

Decision Summary RA18083

This document summarizes my reasons for issuing Approval RA18083 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document RA18083. That document and the full application are available from the decisions search engine on the Natural Resources Conservation Board (NRCB) website at www.nrcb.ca. My decision is based on the act and its regulations, the policies of the NRCB, the information contained in the application, and all other materials in the application file.

1. Background

On October 16, 2018, the Hutterian Brethren Church of Hughenden (Hughenden Colony) submitted a Part 1 application (RA18072) to the NRCB to expand an existing multi species confined feeding operation (CFO). That application was withdrawn on November 9, 2018. On that same day, Hughenden Colony submitted a new Part 1 application (RA18083) for the expansion of the same CFO. In the first application a portion of the CFO's poultry livestock was not stated. The second Part 1 application included all of the colony's poultry livestock, but omitted the swine livestock that was stated in the previous application. I discussed this matter with a representative of the colony. The omission of the swine livestock from the first Part 1 to the second Part 1 was an error. For this reason, and to avoid requiring the CFO to submit a third Part 1 application, I am reading the CFO's amount of existing livestock to be a combination of the numbers stated in the first and second Part 1 applications. Those livestock numbers are:

- 6,048 laying chickens
- 10,000 pullet chickens
- 2,700 broiler chicken units (see further discussion in Appendix B, below)
- 700 ducks
- 150 geese
- 300 turkeys (mixed sex)
- 250 swine (sows) farrow to finish
- 8 milking cows plus associated dry cows and replacements

The Part 2 application was submitted on November 30, 2018. On February 6, 2019, I deemed the application complete.

The proposed CFO expansion involves:

- Increasing the number of laying chickens from 6,048 to 20,000
- Constructing a layer chicken barn (71.6 m x 18.6 m) with an attached office and egg cooler (33.8 m x 21.3 m) and manure storage (11.0 m x 18.6 m).

The office and egg cooler attached to the barn are an "ancillary structure," under sections 1(b.6) of AOPA and 1(1)(a.1) of the Agricultural Operations, Part 2 Matters Regulation, because it will not be used to store or collect manure or to confine livestock. Therefore, under section 4.1 of that regulation, this structure does not need to be permitted under the act.

Under AOPA, this type of application requires an approval. (This is one of several types of

“permits” issued under AOPA. For an explanation of the different types and when each one applies, see www.nrcb.ca.)

a. Location

The existing CFO is located at NE/NW 7-40-7 W4M. The proposed layer chicken barn will be located adjacent to the existing CFO at SE 18-40-7 W4M in Municipal District (M.D.) of Provost. The existing CFO, as well as the proposed barn, are located roughly eight kilometres southeast of Hughenden, AB. The CFO is located in a hummocky area.

b. Existing permitted facilities

The CFO is grandfathered with a deemed approval under section 18.1 of AOPA. This deemed approval allows the construction and operation of a multi species CFO with the livestock capacity stated in Appendix B, attached. The CFO’s grandfathered status is also explained in Appendix B. The CFO’s deemed facilities are listed in the appendix to Approval RA18083.

2. Notices to affected parties

Under section 19 of AOPA, the NRCB is required to notify (or direct the applicant to notify) all parties that are “affected” by an approval application. Section 5 of AOPA’s Part 2 Matters Regulation defines “affected parties” as:

- the municipality where the CFO is or is to be located
- any other municipality whose boundary is within a specified distance from the CFO, depending on the size of the CFO
- all individuals who own or reside on land within a specified distance from the CFO, depending on the size of the CFO

For this application, the distance is one mile. (The NRCB refers to this distance as the “affected party radius.”)

Municipalities that are affected parties are defined by the act to be “directly affected” and are entitled to provide evidence and written submissions. M.D. of Provost is an affected party (and therefore also a directly affected party) because the existing CFO and the proposed layer chicken barn are located within its boundaries.

All other parties who receive notice of the application may request to be considered “directly affected.” Under NRCB policy, all individuals who own or reside on land within the affected party radius are presumed to be “directly affected” if they submit a written response to the notice within the prescribed timeline. See NRCB Operational Policy 2016-7: *Approvals*, part 6.2.

Under section 20 of the act, all directly affected parties are entitled to a reasonable opportunity to provide evidence and written submissions regarding the application.

All directly affected parties are also entitled to request an NRCB board review of the approval officer’s decision on the approval application.

The NRCB published notice of the application in the Provost News on February 6, 2019 and posted the full application on the NRCB website for public viewing. The NRCB also emailed referral letters and a copy of the complete application to the M.D. of Provost, Alberta Health Services (AHS) and, Alberta Environment and Parks (AEP). Three courtesy letters were sent to

people identified by M.D. of Provost as owning or residing on land within the affected party radius.

3. Responses to the application

I received responses from the M.D. of Provost and AHS. No responses were received from AEP or from any other parties.

Mr. Tyler Lawrason, the Chief Administrative Officer with the M.D. of Provost, indicated during a phone call, and in a follow up email, that the M.D. of Provost was not opposed to this application. Mr. Lawrason did not confirm if the application was consistent with the M.D. of Provost's municipal development plan. The application's consistency with the M.D. of Provost's municipal development plan is addressed in Appendix A, attached. As noted in section 2, the M.D. of Provost is a directly affected party.

Mr. Gregory Ward, an AHS public health inspector/environmental health officer, did not raise any concerns with the application. His response included statements related to the *Nuisance and Sanitation Regulation (AR243/2003)* under the *Public Health Act*. To generalize Mr. Ward's response, no new water wells are to be constructed within 100 metres of the any sewage lagoons or within 50 metres of effluent on ground surface. Also, the operation of this CFO expansion must be compliant with the *Nuisance and Sanitation Regulation* by ensuring that deceased livestock and other related waste from the CFO expansion do not become a nuisance or conflict with any other applicable legislation. Mr. Ward's response also discussed the installation and monitoring of three groundwater wells.

As stated in the referral letter to AHS, I can only consider comments with respect to matters that I am authorized to consider under AOPA, which do not include compliance with the *Nuisance and General Sanitation Regulation* (AOPA relates to manure storages and collection facilities not sewage lagoons or effluent on ground surface). Alberta Health Services' comments have been provided to the applicant for their information and action.

As noted in this decision summary and further documented in Technical Document RA18083 the proposed layer chicken barn (including its attached manure storage) meets all AOPA technical requirements. Several of these requirements are designed to prevent or minimize manure leakage and other related nuisances. Considering that the proposed barn, its attached manure storage and the other assessed facilities all pose a low potential risk to surface water and groundwater (based on screening results of the Environmental Risk Screening Tool, see Technical Document RA18083), I am not requiring the CFO to install monitoring wells or monitor any groundwater wells at the CFO at this time.

Copies of the responses to this application's public notice were provided to the applicant by email. The permit holder is reminded that they are required to comply with all applicable rules and regulations, including but not limited to those under the *Public Health Act*.

4. Environmental risk screening of existing and proposed facilities

As part of my review of this application, I assessed the risk to surface water and groundwater posed by the CFO's existing and proposed manure storage facilities. I used the NRCB's environmental risk screening tool for this purpose (see NRCB Operational Policy 2016-7: *Approvals*, part 8.13). The tool provides for a numeric scoring of risks, which can fall within either a low, moderate, or high risk range. (A complete description of this tool is available under CFO/Guides on the NRCB website at www.nrcb.ca.)

For the sake of efficiency, I first assessed the CFO's existing the earthen liquid manure storage cells (EMS) and the dairy barn including its attached corrals using the risk screening tool. The EMS cells and the dairy barn (and its corrals) appear to be the manure storages with the higher relative risk, as both were constructed before AOPA and both have limited information on the geotechnical properties of their manure collection and storage liners. My risk assessment found that these facilities pose a low risk to groundwater and surface water. Because these are assumed to be the CFO's highest risk facilities, I presume that the CFO's other existing facilities also pose a low risk to both groundwater and surface water. Therefore, further assessment of the risks posed by these other facilities, using the NRCB's environmental risk screening tool, is not necessary.

I also assessed the proposed new layer chicken barn (with the attached manure storage), using the NRCB's risk screening tool, and determined that it will pose a low risk to groundwater and surface water.

5. Other factors considered

The application meets all relevant AOPA requirements, with the terms and conditions summarized in part 6.¹

In addition, the proposed CFO expansion is consistent with the land use provisions of M.D. of Provost's municipal development plan. (See Appendix A for a more detailed discussion of the county's planning requirements.)

With respect to the act's technical requirements, the proposed CFO expansion:

- With a condition meets the groundwater separation requirement (see Part 6, below, and Appendix C)
- Meets the required AOPA setbacks from all nearby residences (AOPA setbacks are known as the "minimum distance separation" requirements, or MDS)
- Meets the required AOPA setbacks from water wells, springs and common bodies of water
- Has sufficient means to control surface runoff of manure
- Meets AOPA's nutrient management requirements regarding the land application of manure
- Meets AOPA groundwater protection requirements for the design of floors and liners of manure storage facilities

In addition, I assessed the effects of the proposed CFO expansion on the environment. Consistent with NRCB policy, I determined that these effects are acceptable because the application meets all of AOPA's technical requirements and the directly affected parties' concerns have been adequately addressed. I also determined that the application's effects on the economy and community are acceptable, and that the proposed CFO expansion is an appropriate use of land. Under NRCB policy, these determinations are based on the application's consistency with the municipal development plan. (See NRCB Operational Policy 2016-7: *Approvals*, part 8.2.)

1. For a summary of these requirements, please see the [2008 AOPA Reference Guide](#), available on the NRCB website at www.nrcb.ca/Guides.

6. Terms and conditions

Approval RA18083 specifies the new permitted livestock capacity as:

- 20,000 chicken layers
- 10,000 chicken pullets
- 4,075 chicken broilers
- 700 ducks
- 150 geese
- 300 turkeys (mixed sex)
- 250 swine (sows) farrow to finish
- 8 milking cows plus associated dry cows and replacements

Approval RA18083 also permits the construction of the new layer chicken barn with its attached manure storage.

Approval RA18083 also contains terms that the NRCB generally includes in all AOPA approvals, including terms stating that the applicant must follow AOPA requirements and must adhere to the project descriptions in their application and accompanying materials.

In addition to the terms described above, Approval RA18083 includes conditions that:

- Require construction to cease and the permit holder is required to contact the NRCB immediately if groundwater is encountered or observed to be one metre or less from the bottom of the manure storage liners during construction
- Set a deadline of November 30, 2022 for the approved construction to be completed
- Require the concrete used to construct the liner of the manure collection and storage portion of the layer chicken barn and its attached manure storage to be sulphate resistant and have a minimum 56-day compressive strength of 30 MPa
- Require written confirmation from a qualified third party that the concrete used for the manure collection and storage areas meets the required specifications
- Prohibit Hughenden Colony from placing manure or livestock in the layer chicken barn and its attached manure storage until the facilities have been inspected by the NRCB following their construction

For an explanation of the reasons for these conditions, see Appendix C.

7. Conclusion

Approval RA18083 is issued for the reasons provided above, in the attached appendices, and in Technical Document RA18083.

Hughenden Colony's deemed approval is therefore cancelled, unless Approval RA18083 is held invalid following a review and decision by the NRCB's board members or by a court, in which case the deemed approval will remain in effect.

March 22, 2019

(Original Signed)
Jeff Froese
Approval Officer

Appendices:

- A. Consistency with the municipal development plan
- B. Grandfathering determination
- C. Explanation of conditions in Approval RA18083

APPENDIX A: Consistency with the municipal development plan

Under section 20 of AOPA, an approval officer may approve an application for an approval or an amendment of an approval only if the approval officer finds that the application is consistent with the “land use provisions” of the applicable municipal development plan (MDP).

The NRCB interprets the term “land use provisions” as covering MDP policies that provide generic directions about the acceptability of various land uses in specific areas and that do not call for discretionary judgements relating to the acceptability of a given confined feeding operation (CFO) development. (See NRCB Operational Policy 2016-7: *Approvals*, part 8.2.5.) Under this interpretation, the term “land use provisions” also excludes MDP policies that impose procedural requirements. In addition, section 20(1.1) of the act precludes approval officers from considering MDP provisions “respecting tests or conditions related to the construction of or the site” of a CFO or manure storage facility, or regarding the land application of manure. Approval officers will only consider setbacks identified in an MDP if they do not directly modify AOPA’s MDS requirements. (These types of MDP provisions are commonly referred to as MDP “tests or conditions.”)

Hughenden Colony’s CFO is located in the M.D. of Provost and is therefore subject to that municipality’s MDP. The M.D. of Provost adopted the latest revision to this plan on March 15, 2011, under Bylaw #2132. Section 7 of the MDP relates to CFOs; its subsections that relate to this application are discussed below.

Threshold interpretation issues

There are two interpretation issues to address before discussing these subsections. First, the MDP does not define the term “confined feeding operation” (or “CFO”). However, the introduction to part 7 of the MDP refers to the province’s assumption of “control” of CFOs under AOPA and to the NRCB’s regulatory authority over CFOs under that act. Also, the MDP’s part 16.1 states that the definitions in the MGA and the LUB apply in the MDP. The LUB uses almost the same definition for “confined feeding operation” that AOPA does, but the LUB makes no reference to AOPA. Based on this discussion, the MDP’s use of the term “CFO” it is my interpretation that these municipal documents references to CFO is, in my opinion, the same as “CFO” as defined in AOPA.

The second interpretation issue is whether, or which of, the subsections were meant to apply to both new CFOs and expansions to existing CFOs. Subsection 7.10 expressly refers to both of these CFO categories, but the other relevant subsections just refer to “CFOs.” However, the introduction to these subsections notes that the M.D. intended section 7 of the MDP to provide guidelines and comments to the NRCB “on applications for new or expanding” CFOs within the municipality. Based on this statement of intent, I interpret all subsections that refer to “CFOs” as applying to both new and expanding CFOs.

MDP setbacks that are “tests or conditions”

Several subsections of section 7 list CFO setbacks from various areas or features.

(i) Subsection 7.4 – setback to open bodies of water

The first of these setbacks is in subsection 7.4, which precludes the construction of “[m]anure storage facilities” (MSFs) within 40 m of any “open body of water.” Subsection 7.4 also

precludes MSFs within 100 m of any springs and water wells. As noted above, the NRCB views these setbacks as tests or conditions. These setbacks appear to be MDP “test or conditions” related “to the site” of a CFO, and therefore excluded from my MDP consistency determination under section 20(1.1) of AOPA. At any rate, the proposed layer chicken barn, with an attached manure storage, meets these setback requirements and meets all other AOPA technical requirements.

(ii) Subsection 7.8 - setback to residences

The next setback is in subsection 7.8 which sets a “minimum distance separation” between CFOs and “adjacent residences.” Under this subsection, there are two different setback sizes, depending on the size of the CFO, as one mile or one and a half miles. (Table 1 in section 7 sets out four categories of CFOs based on their livestock types and numbers.) For the colony’s proposed expansion to 20,000 layer chickens with no changes to other existing livestock at the CFO, the setback distance is 1.0 mile (or roughly 1,609 metres).

This subsection also states that the setback “may be reduced with written permission from neighbouring residents.” Presumably, the term “neighbouring residents” refers to all residences that are within the setback distance from the CFO. Hughenden Colony’s CFO, including its proposed layer barn, are within this 1,609 m setback, because the CFO is roughly 650 metres from a neighbouring residence.

However, the neighbouring residence is outside the required setback under AOPA. That setback is also referred to as the “minimum distance separation” or MDS and is based on the land use zoning for these residences.

As written, the MDP setback is an MDP “land use provision,” as the NRCB has interpreted that phrase, because the setback does not call for a site- or CFO-specific discretionary judgement. However, under NRCB policy, this setback may still not be relevant to my MDP consistency determination if it is “based on” or “directly modifies” AOPA’s MDS requirement. (See NRCB Operational Policy 2016-7: Approvals, part 8.2.5.)

The “based on” and “directly modify” tests in this NRCB policy do not provide a crystal clear line. Rather, there is arguably a spectrum of setbacks that are more or less like the MDS requirement under AOPA.

In this case, the MDP setback of one mile to residences is similar to the MDS under AOPA. In addition to using the same “MDS” name,

- Both setbacks are to residences
- Both setbacks vary, in part, based on the size of the CFO (the AOPA MDS setback varies based on additional factors)
- Both setbacks allow for variances based on the permission of the resident who is within the setback distance to the CFO

In my view, these similarities are close enough to consider the MDP setback as “based on” or “directly modifying” the AOPA MDS requirement. Therefore, it is my determination that this MDP setback is not relevant to my MDP consistency determination.

(iii) Subsection 7.9 – setback to villages, towns, hamlets and lake districts

This subsection provides a minimum distance separation setback between CFOs and villages, towns, hamlets and “lake districts (as identified in the Land Use Bylaw).” As with the setback to residences (in subsection 7.8), this setback varies depending on the CFO’s size and the types of livestock present. Because of the similarities with the setback discussed above, the same rationale apply to these setbacks. Therefore, as discussed above, I have determined that this setback is not relevant to my MDP consistency determination. I consider it to be a test or condition related to the construction of, or the siting of, a CFO that is based on or directly modifies the AOPA MDS requirement.

Regardless, Hughenden Colony’s proposed CFO expansion is not located within the MDP’s one mile setback.

(iv) Subsection 7.10 – rural fringe areas in neighboring municipalities

This subsection essentially applies the setbacks in subsections 7.8 and 7.9 to any residences, villages, towns, hamlets and lake districts, respectively, that are in neighbouring municipalities.

I do not need to make a determination on the impact of the validity of this setback requirement because, Hughenden Colony’s proposed CFO expansion is not within a rural fringe area (based on the M.D.’s maps included with its land use bylaw).

Other MDP provisions that are “tests or conditions”

As noted above, section 20(1.1) of AOPA precludes approval officers from considering MDP provisions that are “tests or conditions related to the construction of or the site” of a CFO or manure storage facility,” or that relate to the “application of manure” to land. Approval officers generally view, as “tests or conditions,” MDP policies that resemble AOPA requirements in either their structure or purpose.

Of the remaining fourteen subsections of section 7, two relate to the land application of manure (subsections 7.7 and 7.17). Three other subsections (7.11, 7.13 and 7.14) provide technology requirements to minimize odours and other nuisance-type effects and are not “land use provisions”. Six of the subsections (7.2, 7.3, 7.4 (setbacks to water wells and springs), 7.6, 7.12, and 7.16) provide requirements to protect groundwater from manure contamination. Three of the subsections (7.4, 7.5 (setback to springs), and 7.15) appear to be intended to protect surface waters from manure contaminated runoff. One subsection (7.1) sets out the minimum parcel size for CFOs.

All of these MDP subsections are considered to be “tests or conditions” under section 20(1.1) of AOPA, because they either:

- Relate to the land application of manure;
- Are conditions relating to the construction of the new manure collection or storage facilities for a CFO site; and/or
- Serve the same purposes as AOPA requirements for the protection of groundwater and surface water, or to minimize nuisance impacts on neighbours.

For these reasons, I have determined that none of these fourteen subsections are relevant to my MDP consistency determination.

I conclude that the application is not inconsistent with the land use provisions of the M.D. of Provost's MDP.

APPENDIX B: Grandfathering determination

Hughenden Colony claims that its CFO is grandfathered (that is, it has a “deemed” permit) under section 18.1 of AOPA.

The CFO is not covered by a municipal development permit (or permit issued under the *Public Health Act*) issued before AOPA came into effect on January 1, 2002. However, under section 18.1(1)(a) of AOPA, the CFO may still be grandfathered if:

- the CFO “existed” on January 1, 2002; and,
- the CFO facilities were at a size that was at or greater than the permit threshold sizes under AOPA. (See NRCB Operational Policy 2016-6: *Public Notice on Grandfathering Decisions*, part 1.)

To determine whether the CFO meets these two criteria, the NRCB must consider, among other things what facilities existed at the site on January 1, 2002, including their dimensions, types of physical structures and other physical characteristics.

Based on a review of information available during my site visit, from available air photos, and documentation provided by the applicant, I find that the following facilities existed at N1/2 7-40-7 W4M and SE 18-40-7 W4M on January 1, 2002. Because of this, these facilities are considered to be grandfathered facilities:

- Layer and pullet chicken barn, includes offices and cooler 54.9 m x 13.4 m
 - Layer livestock area 48.1 m x 6.5 m
 - Pullet livestock area 43.8 m x 6.4 m
 - Each area houses four rows of cages that measure 1.2 m wide that run the full length of the livestock housing portions of the barn. These cages are stacked three layers high.
- Broiler chicken barn, includes office and storage 30.5 m x 9.8 m
 - Broiler livestock area 27.9 m x 9.5 m
- Turkey barn 36.6 m x 7.3 m
 - Livestock housing area 36.0 m x 6.8 m
- Duck and goose barn 24.4 m x 7.3 m
 - Livestock housing area 24.1 m x 7.0 m
- Duck and goose pen 47.0 m x 27.4 m
- Swine barn complex 1 30.5 m x 10.4 m and 16.5 m x 67.3 m
 - Dry sow barn 1 30.5 m x 10.4 m, livestock space 30.1 m x 9.8 m
 - Swine barn 1 67.1 m x 12.8 m
 - Farrowing room 24.7 m x 7.4 m
 - Includes 28 farrowing crates
 - Weaner room 24.7 m x 3.9 m
 - Grower and finisher room 39.0 m x 12.5 m
- Swine barn complex 2 57.7 m x 16.6 m (east-west) and 73.4 m x 12.4 m (north-south)
 - Dry sow, weaner and farrowing barn 54.1 m x 16.2 m
 - Includes 32 farrowing crates
 - Grower and finisher barn 60.2 m x 11.9 m
- Overall complex includes office and storage space
- EMS cell 1 (triangular shaped, with rounded corners) 70 m x 61 m x 40 m
- EMS cell 2 (square shaped, with rounded corners) 39 m x 37 m

- Milking barn (36.3 m x 9.8 m) includes office, parlour and storage spaces
- Milking cow pen (77.4 m x 39.6 m)
- Cows and replacement pen (24.3 m x 9.3 m)

Under section 18.1(2)(a) of AOPA, if a CFO existed on January 1, 2002, the CFO's deemed capacity is its physical capacity to confine livestock on January 1, 2002.

In Part 1 applications RA18072 and RA18083, the colony's claimed physical capacity on January 1, 2002 is:

- 6,048 laying chickens
- 10,000 pullet chickens
- 2,700 broiler chicken units
- 700 ducks
- 150 geese
- 300 turkeys (mixed sex)
- 250 swine (hogs) farrow to finish
- 8 milking cows plus associated dry cows and replacements

The colony was not able to provide documentation indicating what amount of livestock was present at the CFO in 2002 to support this livestock capacity claim. Despite this, the colony was able to provide details on the number of farrowing crates in the swine barns and the dimensions of cages in the layer and pullet barn. (The colony has indicated in writing that the number of farrowing crates and the dimensions of poultry cages at the CFO has not changed since 2002.)

To confirm if the livestock capacity claimed in the Part 1 applications is reasonable, I used Technical Guideline Agdex-096-81, "*Calculator for Determining Livestock Capacity of Operations as They Existed on January 1, 2002.*" My assessment has found that all of the applicant's claimed livestock numbers are reasonable.

Layer and pullet chicken barn capacity

The livestock housing portions of the layer and pullet barn measures 48.1 m x 6.5 m and 43.8 m x 6.4 m for the layer chicken and pullet portions of the barn, respectively. Each area houses four rows of cages that measure 1.2 m wide that run the full length of the livestock housing portions of the barn (48.1 m). These cages are stacked three layers high.

Layer chicken capacity = cage area / area requirement per bird x number of cages
 Cage area = 1.2 m wide x 48.1 m long (57.72 m²)
 Area requirement varies from 0.04129 m² for white birds to 0.04516m² for brown birds
 Number of cages = 4

Based on the above the barn's laying chicken capacity is expected to be between 5,592 and 5,113 laying birds. The claimed barn capacity is eight percent more than the calculated white chicken capacity and fifteen percent more than the calculated brown chicken capacity.

A barn's pullet chicken capacity is normally calculated based on the overall available floor space available for birds (free run barns are typical for pullets). However, the colony has indicated that its pullets are housed in cages that are in the same configuration as the layer chickens cages stated above. For this reason, I calculated the barn's pullet capacity using the area available in the cages, not based on the floor space.

Pullet chicken capacity = barn area / bird space allocation

Barn area = four rows of 1.2 m wide x 43.8 m long cages, each cage is stacked three tiers high (630.72 m²)

Bird space allocation = 0.06503 m² (to be conservative I am not using the smaller space allocation of 0.04645 m² also listed in the calculator for broilers/pullets)

Based on the above, the barn's capacity is expected to be 9,699 pullets. The calculated capacity is within three percent of the claimed capacity.

Broiler chicken barn capacity

The livestock housing portion of the broiler chicken barn measures 27.9 m x 9.5 m and the application states a livestock capacity of 2,700 units.

I spoke with a representative of the Alberta Chicken Producers and was informed that it is more appropriate to determine a barn's capacity based on the amount of area available for livestock (and the amount of feed and water stations in that facility), not based on quota units. This agrees with the capacity determination process outlined in Agdex-096-81 (the method typically used by NRCB staff). However, Agdex-096-81 does not rely on the amount of feed and water stations in that facility. In Agdex-096-81:

Broiler chicken capacity = barn area / bird space allocation

Barn area = 265 m²

Bird space allocation = 0.06503 m² for larger broilers

Based on the above the barn's broiler chicken capacity is expected to be approximately 4,075 broilers.

Currently, one quota unit for broiler chickens is equivalent to the annual production of 20 kg of birds*.

20 kg per quota unit x 2,700 units = 54,000 kg of chicken per year

54,000 kg / 2.2 kg per chicken* = 24,545 birds per year

24,545 birds per year / 6.5 cycles per year (8 week cycles are typical*) = 3,776 broilers per cycle

*- from Alberta Chicken Producer's website, <https://www.chicken.ab.ca/chicken-industry/>, accessed January 10, 2019

The claimed broiler chicken barn (quota) capacity is approximately eight percent less than the 2019 calculated barn capacity.

Turkey capacity

The livestock housing portion of the turkey barn measures 36.0 m x 6.8 m.

Based on the 2003 Code of Practice for the Care and Handling of Farm Animals – Chickens, Turkeys and Breeders from hatchery to Processing Plant, turkey space requirements are 0.19 m² for broilers (under 6.2 kg), 0.19 m² to 0.28 m² for hens (6.2 kg to 9.8 kg), 0.28 m² to 0.37 m² for light toms (9.8 kg to 13.3 kg) and 0.37 m² for heavy toms (13.3 kg and over).

Turkey barn capacity = barn area / bird space allocation
Barn area = 244.8 m²
0.37 m² per heavy tom (conservative category used)

The CFOs claimed turkey capacity of 300 is significantly under what could be housed in the existing barn. Based on this, the claim to have 300 turkeys is supported.

Duck and goose capacity

The duck and goose barn's livestock area measures 24.1 m x 7.0 m. Attached to the barn is a pen that measures 47.0 m x 27.4 m for the ducks and geese.

Since ducks and geese are not common animals to grandfather, I was not able to locate literature related to duck and goose animal space requirements from in or around 2002. As a proxy, I compared this grandfathering to two recent CFOs. At one CFO there was an application to construct a barn with an 18.3 m x 18.3 m area for 1,300 ducks and geese. In the other, there was a grandfathering determination at an existing CFO for 200 ducks/geese that were housed in a 6.1 m x 25.8 m barn (with an associated livestock exercise pen, cumulatively approximately 6,000 m²). Based on this I am of the opinion that it would be reasonable to expect the barn housing density for ducks and geese to range from 0.1211 m² to 0.2576 m² per bird.

Barn capacity = barn area / bird space allocation
Barn area = 168.7 m²
Bird space allocation = a range from 0.1211 m² to 0.2576 m² per bird

Based on the above the duck and goose barn could reasonably house between 655 and 1,393 ducks and/or geese.

Swine capacity

The CFO's swine operation consists of two swine barn complexes. Both complexes are reported to include areas for farrowing, weaners, growers and finishers (typical for farrow to finish operations). The colony has reported that barn complex one has 28 farrowing crates and that complex two has 32 crates.

Swine (sow) capacity = (365 / (weaning days plus 7) x number of litters per year) x
number of farrowing crates
Weaning days typically ranges from 20 to 28 days
The number of litters per year range from 2.47 to 2.34
The total number of farrowing crates is reported to be 60

Based on the above the CFO's calculated swine (sow) capacity is expected to potentially range from 328 to 267 sows. The claimed sow capacity is seven to 31 percent less than the calculated sow capacity. As noted above, the swine barn complexes also include areas for weaner, grower, and finisher pigs. Based on this, the claim to be a farrow to finish swine operation is supported.

Dairy capacity

The dairy portion of the CFO includes a milking barn (36.3 m x 9.8 m, includes an office, parlour and storage spaces (9.3 m x 11.8 m)), a milking cow pen (77.4 m x 39.6 m) and a cow and

replacement pen (24.3 m x 9.3 m). Of the total milking cow area (including pens and space in the barn for livestock), approximately 3,500 m² is available for livestock housing.

Milking cow capacity (loose housing) = barn area / animal space allocation
Area available for livestock = 3,500 m²
Animal space allocation = 13.94 m² per milking cows (loose housing)
and 13.94 m² to 23.23 m² for penned cows and replacements (from beef category)

Based on the above the dairy portion of the CFO has more than adequate space to house significantly more than what is required for eight milking cows plus dries and replacements.

Conclusion

Given that management practices differ between CFO operators, livestock densities more or less than those used for the capacity calculations above are not uncommon. I believe that the claimed number of animals stated above is within a range that can be housed in the grandfathered facilities.

Based on the above, the CFO is considered to have a deemed approval and a deemed capacity of:

- 6,048 laying chickens
- 10,000 pullet chickens
- 3,776 broiler chickens
- 700 ducks
- 150 geese
- 300 turkeys (mixed sex)
- 250 swine (hogs) farrow to finish
- 8 milking cows plus associated dry cows and replacements

APPENDIX C: Explanation of conditions in Approval RA18083

Approval RA18083 includes several conditions, discussed below:

a. Construction above the water table

Under sections 9(2) and (3) of AOPA's Standards and Administration Regulation, the bottom of a manure storage facility (MSF) must be at least one metre above the water table "at the time of construction."

In the application the water table is estimated to be 2.1 m below ground. The layer barns manure storage is proposed to be 2.4 m below ground.

Based on this information, the proposed manure storage does not meet the one metre requirement of sections 9(2) and (3). However, because the height of the water table can vary over time (and because this depth is just an estimation by the applicant), the lack of adequate depth to water table indicated in Hughenden Colony's application does not mean that there will be an inadequate depth at the time of construction. To address this variability and ensure that the depth requirement is met at the time of construction, a condition is included requiring applicant to cease construction and notify the NRCB immediately if the water table is encountered or observed to be one metre or less from the bottom of the manure storage liners during construction.

b. Construction Deadline

Hughenden Colony proposes to complete construction of the proposed new layer chicken barn and its attached manure storage by November 30, 2022. This time-frame is considered to be reasonable for the proposed scope of work. The deadline of November 30, 2022 is included as a condition in Approval RA18083.

c. Post-construction inspection and review

The NRCB's general practice is to include conditions in new or amended permits to ensure that the new or expanded facilities are constructed according to the required design specifications. Accordingly, Approval RA18083 includes conditions requiring:

- the concrete used to construct the liner of the manure collection and storage portion of the layer chicken barn (including the attached manure storage) to be sulphate resistant and to have a minimum compressive strength of 30 MPa at 56 days
- Hughenden Colony to provide documentation to confirm the specifications of the concrete used to construct the manure storage and collection portions of the layer chicken barn and its attached manure storage.

The NRCB routinely inspects newly constructed facilities to assess whether the facilities were constructed according to their required design specifications. To be effective, these inspections must occur before livestock or manure are placed in the newly constructed facilities. Approval RA18083 includes conditions stating that Hughenden Colony shall not place livestock or manure in the manure storage portions of the new layer chicken barn and the manure storage attached to it until NRCB personnel have inspected these facilities and confirmed in writing that they meet the approval requirements.