

## Decision Summary RA20030

This document summarizes my reasons for issuing Approval RA20030 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document RA20030. All decision documents and the full application are available on the Natural Resources Conservation Board (NRCB) website at [www.nrcb.ca](http://www.nrcb.ca) under Confined Feeding Operations (CFO)/CFO Search. 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 May 29, 2020, Gerald Thiessen submitted a Part 1 application to the NRCB to expand an existing swine CFO from 2,500 to 11,300 swine feeder/finisher hogs and to construct two barns. The Part 2 application was submitted on July 14, 2020 and did not revise the amount or type of livestock stated in the Part 1 application. The Part 2 application states that two barns (36.8 m x 93.1 m each overall) and a barn connector facility (30.5 m x 17.7 m) are proposed for construction. Each of these proposed barns would be split into two sub-barns. On August 11, 2020, I deemed the application complete.

The Agricultural Operations, Part 2 Matters Regulation includes two separate swine livestock types for “hogs” that references either finishers (as in farrow to finish) or feeders (as feeders/boars). I interpret Mr. Thiessen’s above stated livestock to be swine feeders as defined in the regulation as he has reports to import weaner sized pigs and export feeder sized (approximately 300 pound pigs). Further, the operation does not include breeding sows.

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](http://www.nrcb.ca).)

#### a. Location

The existing CFO is located at NE 28-43-20 W4M in Camrose County, roughly six kilometres southwest of the Village of Edberg. The CFO is sited on terrain that generally slopes to the south. The closest water body is an intermittent headwater to Meeting Creek located approximately 215 metres south of the CFO.

#### b. Existing permitted facilities

The CFO is grandfathered with a deemed registration under section 18.1 of AOPA. This deemed registration includes Camrose County issued development permits 88-123, 94-065 and 01-095 issued November 4, 1988, September 1, 1994 and July 19, 2001 (01-095 was modified by Camrose County’s Subdivision and Development Appeal Board on September 18, 2001). The deemed registration allows for the construction and operation of a 2,500 swine feeder CFO. The CFO’s deemed facilities are listed in the appendix to Approval RA20030. The CFO’s grandfathered status is explained in Appendix A, attached.

### 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 persons 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 1.5 miles. (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. Camrose County is an affected party (and therefore also a directly affected party) because the CFO is 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 Camrose Booster on August 11, 2020 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 Camrose County, Alberta Health Services (AHS), Alberta Environment and Parks (AEP), and right of way holders: Rife Resources Ltd., and Battle River Natural Gas Coop Ltd. Twenty-five courtesy letters were sent to people identified by Camrose County as owning or residing on land within the affected party radius.

### **3. Responses from the municipality and referral agencies**

I received responses from Camrose County and AEP. No response was received from AHS or the above noted right of way holders.

Ms. Kim MacMurray, a development officer with Camrose County, provided a written response on behalf of Camrose County. As noted in section 2, Camrose County is a directly affected party.

Ms. MacMurray stated that the application complies with Camrose County’s municipal development plan and that no other planning documents apply to the area. The application’s consistency with the land use provisions of Camrose County’s municipal development plan, is addressed in Appendix B, attached.

Ms. MacMurray stated that all land within 1,600 m of NE 28-43-20 W4M is agriculturally zoned. She then stated the setback requirements in Camrose County’s land use bylaw (LUB) is 10 m from all property lines and 40 m from the roadway allowance. I reviewed the scaled site plan

included with this application and note that the proposed facilities are to be located 10 m from the north property line and more than 40 m from the road way allowance.

Ms. Laura Partridge, a senior water administration officer with AEP, indicated in her written response that an application for a license under the *Water Act* had been submitted. She did not raise concerns with this application in her response.

#### **4. Responses from directly affected parties**

The NRCB received responses from Janine Klevgaard and Eldon Egert. Both of these individuals own or reside on land within the one and a half mile radius for affected persons and both individuals submitted responses to the application to the NRCB before the submission deadline. Because of their location within this radius and their responses to the application, they are presumed to be directly affected by the application.

The directly affected parties raised concerns related to odours, improper manure spreading and health concerns. These concerns are addressed in Appendix C.

#### **5. Other directly affected party**

Mr. T.C. Gabert of T.C. Gabert Holdings Ltd. provided a minimum distance separation (MDS) waiver as part of the application. Under NRCB policy, he is presumed to be “directly affected” by the application. See NRCB Operational Policy 2016:7 – Approvals, part 6.2.

#### **6. Environmental risk screening of existing and proposed facilities**

When reviewing new approval applications for an existing CFO, NRCB approval officers normally assess the CFO’s existing buildings, structures, and other facilities, using the NRCB’s environmental risk screening tool to determine the level of risk they pose to surface water and groundwater. This tool provides for a numeric scoring of risks, within either a low, moderate, or high risk range. (A complete description of this tool is available under CFO/Groundwater and Surface Water Protection on the NRCB website at [www.nrcb.ca](http://www.nrcb.ca).) However, if those risks have previously been assessed, the approval officer will not conduct a new assessment, unless site changes are identified that require a new assessment, or the assessment was done with a previous version of the risk screening tool and requires updating. See NRCB Operational Policy 2016-7: Approvals, part 8.13.

In this case, the risks posed by Mr. Thiessen’s existing EMS were assessed in 2008. That assessment indicated that the potential risk posed to groundwater by the EMS was low.

Since the 2008 risk assessment, a new version of the risk screening tool was released (that also assesses the potential risk to surface water and groundwater). For this reason, I re-assessed the risks posed by the CFO’s EMS and the existing barn complex. My assessment found that the EMS and the existing barn complex both pose a low potential risk to both surface water and groundwater.

I also assessed the proposed new barn complex and barn connector facility, using the NRCB’s risk screening tool, and determined that they also pose a low potential risk to groundwater and surface water.

## 7. Other factors considered

The application meets all relevant AOPA requirements, with the terms and conditions summarized in part 8.

In addition, the proposed CFO expansion is consistent with the land use provisions of Camrose County's municipal development plan and land use bylaw. (See Appendix B for a more detailed discussion of the county's planning requirements.)

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

- With use of the expansion factor, meets the required AOPA setbacks from all nearby residences, with one exception (AOPA setbacks are known as the "minimum distance separation" requirements, or MDS). The owner of that residence has signed a written waiver of the MDS requirement to their residence
- Meets the required AOPA setbacks from 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 collection and storage facilities

I also determined that the proposed barns and barn connector facility are located within the required AOPA setback from an existing water well. However, as explained in Appendix D, these facilities warrant an exemption from the 100 metre water well setback due to the well's construction and location upslope from the facilities.

In addition, I assessed the effects of the proposed CFO expansion on the environment. Consistent with NRCB policy, I presume 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 presume 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 presumptions are based on the application's consistency with the municipal development plan and land use bylaw. (See NRCB Operational Policy 2016-7: Approvals, part 8.7.3.) After considering the concerns from the directly affected parties, comments from the referral agencies, and the feedback from the county, I find these presumptions are not rebutted.

## 8. Terms and conditions

Approval RA20030 specifies the new permitted livestock capacity as 11,300 swine feeders and permits the construction of the two barns and the connector facility.

Approval RA20030 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 RA20030 includes conditions that:

- Set a deadline of November 30, 2023 for the approved construction to be completed
- Require construction to cease if the water table is observed to be one metre or less from

- the bottom the facilities' liner during their construction
- Require submission of written confirmation from a qualified third party that the concrete used for the manure collection and storage areas in the new barns and barn connector facility meets the required specifications
  - Prohibit the Thiessens from placing manure or livestock in the new barns and barn connector facility until these facilities have been inspected by the NRCB following their construction

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

**a. Conditions carried forward from previously issued permits**

For clarity, and pursuant to NRCB policy, I consolidated the deemed registration, including Camrose County issued development permits 88-123, 94-065 and 01-095 with Approval RA20030 (see NRCB Operational Policy 2016-7: Approvals, part 10.5). Consolidating permits generally involves carrying forward all relevant terms and conditions in the existing permits into the new permit, with any necessary changes or deletions of those terms and conditions, and then cancelling all existing permits once the new permit is issued. This consolidation is carried out under section 23 of AOPA, which enables approval officers to amend AOPA permits on their own motion.

Therefore, in addition to containing the new terms and conditions summarized above, Approval RA20030 carries forward all of the construction conditions that have been met from Camrose County issued development permits 88-123, 94-065 and 01-095. Those conditions are identified and included in an appendix to the new Approval RA20030.

Pursuant to section 23 of AOPA (approval officer amendments) and the NRCB's Operating Policy 2016-1: Amending Municipal Permit Conditions, I have determined that condition four of Camrose County issued development permit 01-095 should be deleted and not carried forward. Condition five of the same permit should be carried forward, but it is being reworded to reflect current legislation. My reasons for this are provided in Appendix E.

**9. Conclusion**

Approval RA20030 is issued for the reasons provided above, in the attached appendices, and in Technical Document RA20030.

The deemed registration, including Camrose County issued development permits 88-123, 94-065 and 01-095, is therefore cancelled, unless Approval RA20030 is held invalid following a review and decision by the NRCB's board members or by a court, in which case the deemed permit will remain in effect.

October 27, 2020

(Original Signed)  
Jeff Froese  
Approval Officer

## **Appendices:**

- A. Grandfathering determination
- B. Consistency with the municipal development plan
- C. Concerns raised by directly affected parties
- D. Exemption from water well setback
- E. Explanation of conditions in Approval RA20030

## **APPENDIX A: Grandfathering determination**

The CFO holds development permits 88-123, 94-065 and 01-095 issued by Camrose County on November 4, 1988, September 1, 1994 and July 19, 2001, respectively. I note that the 2001 permit was amended by Camrose County's Subdivision and Development Appeal Board and re-issued with modified conditions on September 18, 2001. Collectively, these permits allow for the construction and operation of a CFO. The permits specify the permitted barn dimensions, but not the final earthen liquid manure storage (EMS) dimensions, nor do they state the CFO's permitted animal numbers or type (that is, its "capacity").

Mr. Thiessen claims that, at January 1, 2002, his CFO's capacity was 2,500 feeder/finisher hogs (swine). As noted in Part 1 of this decision summary, I interpret Mr. Thiessen's claimed capacity to be swine feeders as set out in the Schedules to the Agricultural Operations, Part 2 Matters Regulation.

I am treating this as a request for a grandfathering determination. Under section 11(1) of the Administrative Procedures Regulation (and because I am cross-appointed as an NRCB inspector), I investigated the deemed permit status of the CFO. The public notice of the application RA20030 in the Camrose Booster on August 11, 2020 included notice of a grandfathering determination.

To determine whether the CFO is grandfathered and, if so, its deemed capacity, I must consider what facilities existed at the site on January 1, 2002, including their dimensions, types of physical structures and other physical characteristics and how those facilities were being used on January 1, 2002.

My consideration of facility usage includes the number and type of livestock in each facility and the purpose for the livestock's placement in each facility. I also consider how the facility was intended to be used through an entire livestock management period or cycle that included January 1, 2002. Evidence as to how the facilities were used in 2001 and previous years, and in the months and years following January 1, 2002, may be relevant to the two determinations listed above.

In application related correspondence, a representative of Camrose County provided me with a certificate of compliance issued July 11, 2001 to Mr. and Mrs. Thiessen (authored by a representative of Alberta Agriculture, Food and Rural Development). That certificate of compliance stated that the CFO was expanding to 2,500 swine feeders. In addition to this, I located in the NRCB file an engineer's groundwater study report for the site dated July 9, 2001. That report referenced an expansion from 1,100 to 2,500 swine finishers. I consider this second report as further evidence to support the CFO's claimed capacity of 2,500 swine feeders.

Based on a review of a historical air photo of the CFO from Vaultus (circa 1999-2003) it is apparent that two barns (61 m x 14 m and 31 m x 12 m) and a two celled earthen liquid manure storage (EMS with overall dimensions of 68 m x 77 m) existed at the site. The dimensions of the two celled EMS appear to be larger and a third barn appears in the next available air photo from 2008. I note that there is a signed engineer's completion report on file at the NRCB for the EMS dated March 21, 2001. That report confirms that the EMS was expanded to the final dimensions of 34 m x 70 m and 31 m x 70 m before January 1, 2002. There is also the 2001 development permit (01-095) from Camrose County which permitted the construction of the third barn (48 m x 24 m). Documents on file at the NRCB confirm that this third barn was constructed in the fall of 2001 and winter 2001-2002. When the 2008 air photo is compared to the most recent available

one for the site (from summer 2018) the barn and EMS dimensions do not appear to have changed.

Based on the above, it is my determination that the CFO holds a grandfathered or deemed registration with a livestock capacity of 2,500 swine feeders for the above noted barns and the two celled EMS.

## APPENDIX B: Consistency with the municipal development plan

Under section 20 of AOPA, an approval officer may approve an application for 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. (These types of MDP provisions are commonly referred to as MDP “tests or conditions.”)

This CFO is located in Camrose County and is therefore subject to that county’s MDP. Camrose County adopted the latest revision to this plan on April 12, 2016, under Bylaw 1372.

The portions of Camrose County’s MDP relevant to this application are discussed below:

Policy 4.3.7 of the MDP states that applications for new or expanding CFOs shall meet the *Agricultural Operations Practices Act*.

As discussed elsewhere in this decision summary, above this application meets all relevant AOPA requirements.

Policy 4.3.8 states that at the discretion of County Council, large CFOs shall be prohibited in the County.

This policy likely is not a “land use provision” because it calls for discretionary judgements (by Council) about the size of the CFO. The MDP does not define what qualifies as a large CFO. Further, section 8.2.5 of the NRCB’s Approvals Policy (Policy 2016-7) and section 22(2.1) of AOPA prohibit me from considering this policy as part of this MDP consistency determination.

Policy 4.3.9 states that development of new or expanding CFOs shall not be supported within 3,219 m (2 miles) of the City of Camrose, 3,219 m (2 miles) from any recreational lake (defined in the MDP as Miquelon Lake, Little Beaver Lake, Bittern Lake, Red Deer Lake, Buffalo Lake, and Dried Meat Lake) or 1,610 m (1 mile) from any other urban municipality or hamlet as outlined in an IDP.

This CFO is not located within any of the above stated setbacks and is beyond the extents of Camrose County and the Village of Edberg’s IDP. So this policy does not apply to this application.

For the above reasons, I have determined that this application is consistent with the land use provisions of Camrose County’s MDP. As noted in part three of this decision summary, a development officer with Camrose County has indicated that this application is consistent with the county’s MDP, which supports my conclusion.

In my view, the text of Camrose County's MDP provides a clear linkage to the county's land use bylaw (LUB) in section 1.5 of the MDP. Accordingly, I considered the county's LUB (bylaw 1373, last updated March 1, 2020). As noted in part three of this decision summary, the CFO is located on agriculturally zoned land (in the General Agricultural District). Under section 702.2 of the bylaw, CFOs are included in a list of "discretionary" land uses for that zoning category. NRCB policy states that approval officers will presume that an application is consistent with a LUB if the bylaw lists the proposed development as either a permitted or discretionary use (See Operational Policy 2016-7: Approvals, part 8.3).

## **APPENDIX C: Concerns raised by directly affected parties**

As noted in part four of this decision summary, Janine Klevgaard and Eldon Egert are directly affected parties. These parties raised concerns related to odours, improper manure spreading and related health concerns related to manure spreading.

As noted in the courtesy letters and in part 7.4 of the NRCB's Operational Policy 2016-7: Approvals, I provided Ms. Klevgaard's and Mr. Egert's concerns to the applicant. Mr. Thiessen provided written responses to some of the concerns. Those written responses, along with the expressed concerns, is paraphrased below.

### **1. Odour**

Mr. Egert expressed concerns that he and guests to his property are exposed to odours from the CFO. Those odours are reported to be worse when the wind is from the southwest, when the barn's pits are emptied on calm winter days. With an increase in livestock those odours are presumed to be worse.

Approval officer's conclusions:

The minimum distance separation (MDS) is a means of mitigating odour and other related nuisance impacts from CFOs. The NRCB generally considers nuisance effects of a CFO to be acceptable if the MDS requirement is met. Mr. Egert owns land at SE 3-44-20 W4M that is located approximately 2,300 m from the CFO. This land is located within the one and a half mile affected party radius, but beyond the category one MDS setback distance of 706 m of the CFO. Despite the MDS requirement being met, it is possible that persons may occasionally experience odours and other related nuisances from the CFO.

Under part 8.8.1 of the NRCB's Approvals Policy (Operational Policy 2016-7) approval officers will presume that if a proposal for a new or expanded manure storage facility or manure collection area meets AOPA's MDS requirements, the odour effect on nearby residences will be acceptable. This also applies when the expansion factor is used.

The odour concern noted above is relevant to my consideration of "effects on the community." However, as explained in part seven of this decision summary, I presumed that the effects of the proposed CFO on the community are acceptable because the application meets the land use provisions of the municipal development plan. Also, the municipality does not specifically preclude CFOs or CFO expansions in this case. This CFO meets the applicable specified setbacks noted in the other applicable planning documents (municipal development plan and land use bylaw) to the area of the CFO.

Often, any odour related nuisances can be resolved through good communication between the party and the CFO operator. However, if a member of the public has concerns related to a CFO, including whether the operation is complying with AOPA, they may contact the NRCB through its toll free response line (1-866-383-6722). An NRCB inspector will follow up on the concern.

### **2. Improper manure spreading**

Ms. Klevgaard stated in her response to this application that one year (the date was not specified) manure was spread on land adjacent to her residence's property and that the manure was not incorporated.

Applicant's response:

Mr. Thiessen thanked Ms. Klevgaard for expressing her concerns regarding the land application (disposal) of manure and that it be incorporated (worked into the soil) in a timely manner. He stated that doing so was his goal and concern as well. Furthermore he stated that he will try to refrain from disposing the manure directly across the road from the Klevgard's as much as possible.

Approval officer's conclusions:

There are requirements under AOPA (which as developed by Alberta Agriculture and Forestry) and its Standards and Administration Regulation (SAR) for manure spreading. The general rules under section 24 of the SAR are that manure, including compost, must be incorporated (on cultivated land) within 48 hours of application. Despite this, manure does not need to be incorporated if it is spread on forage or directly seeded crops, but a minimum 150 metre setback must be maintained to residences, or other building or structures occupied by people.

Section 24 goes on to state that manure must not be spread on frozen or snow-covered land, unless that spreading has been otherwise approved to occur by the NRCB (which is allowed only if permission has been granted by the NRCB first).

Technical Guideline Agdex 096-70, "Definitions for Frozen and Snow-covered Land", states what qualifies as frozen or snow covered. Essentially if a shovel cannot pierce 15 cm, more than one third of the top 15 cm of soil contains frozen water, or more than 50 percent of a field is covered in 5 cm of snow it meets the definition of being frozen or snow-covered.

The "Applying Manure on Frozen or Snow Covered Land" Fact Sheet from the NRCB elaborates on the process of the considerations which an inspector from the NRCB would use to determine if and when permission would be given for manure spreading on frozen and snow covered land.

The requirements of section 24 of the SAR provide protection to surface water and groundwater, and mitigate the nuisance effects of manure spreading on neighbours.

As noted previously, if a person or party has concerns regarding manure spreading or other CFO-related issues, those concerns can be reported to the NRCB's 24 hour response line (1-866-383-6722). The call will be followed up on by an NRCB inspector. Neighbours and concerned parties can also call any NRCB office during regular business hours if they have questions about permit conditions or ongoing AOPA operational requirements.

Based on the above, I am of the opinion that there is a process in place that addresses Ms. Klevgaard's concerns about manure that was improperly spread.

### 3. Health concerns

Ms. Klevgaard stated that one year, after manure was not properly incorporated, she contracted a bacterial caused disease that is potentially spread from pigs to humans.

Applicant's response:

Mr. Thiessen's veterinarian provided a comment on this concern. In summary, the veterinarian stated that transmission of disease from pigs to humans is possible. Despite this, there is a low risk of disease being spread from pigs to humans. Transmission of the claimed disease would require a person with an open wound to be in direct contact of with an infected pig or its manure. The CFO's veterinarian further stated that the pigs on this CFO are vaccinated for the stated disease and that the "herd at this CFO has never tested positive for this pathogen or exhibited active disease because of this bacterium."

Approval officer's conclusion:

To confirm if the statements from the CFO's veterinarian are accurate, the NRCB discussed this concern, along with the veterinarian's response with Alberta's Chief Provincial Veterinarian. The Chief Provincial Veterinarian could not confirm at the time of the conversation if the livestock at the Thiessen CFO were vaccinated as claimed, but did confirm that the risk of disease transmission from pigs or their manure to humans is very low unless the person has an open wound and is in direct contact with infected livestock or that livestock's manure.

This concern was also forwarded to Alberta Health Services for comment in accordance with part 8.8 of the NRCB's Operational Policy 2016-7: Approvals.

Mr. Gregory Ward, a public health inspector/executive officer with Alberta Health Services indicated that it is not possible to prove if the illness Ms. Klevgaard suffered of was caused by the spreading of manure near her residence. He went on to state that it is possible for manure spreading to be a source of pathogens which could be a source of this type of illness. He referenced the Alberta Agriculture and Forestry's manure spreading setbacks of 150 m to residential areas (AOPA's requirements, discussed above) and that it is possible that manure may have been spread at a closer distance to the Klevgaard residence.

Mr. Ward's response stated that "based on consultations with local medical and health professionals, it has been demonstrated that aerosolization of bacterial and viral pathogens from manure spreading ... can extend to distances >100 m but at a distance of 200 m there was reduction of pathogens to an acceptable level. Therefore based on this current literature Alberta Health Services does not recommend the spreading of manure within 200 meters of a residence."

As noted above, AOPA sets out requirements for manure application and incorporation. AOPA does not allow for manure to be applied on frozen or snow covered land unless permission is granted by the NRCB in advance. It also requires manure to not be spread within 150 m of a residence or other building or structures occupied by people unless that manure is incorporated within 48 hours of its application. Further, this CFO meets the AOPA manure storage requirements (both currently and after the proposed expansion). For these reasons, the CFO is not permitted to spread manure on frozen or snow covered land unless permission is first given by the NRCB.

Based on the above, I am of the opinion that expressed health concern is addressed.

## APPENDIX D: Exemption from water well setback

According to the application, one water well is located within 100 m of the proposed barn complex. I have confirmed during my site inspection and through a review of scaled air photos that there is one water well located approximately 85 m from the proposed barn complex.

Because of this proximity, the applicant's proposed barn complex conflicts with a regulation under AOPA, which prohibits the construction of manure collection areas (MCAs) and manure storage facilities (MSFs) within 100 m of water wells.<sup>1</sup> However, the regulation allows approval officers to grant an exemption from this prohibition. I must therefore consider whether an exemption is appropriate in this instance.

Under the regulation, the test for granting an exemption is whether the "aquifer into which the well is drilled is not likely to be contaminated" by the proposed MSF/MCA. (According to the regulation, when granting an exemption, an approval officer may require the applicant to implement a "groundwater monitoring program.")

The regulation also makes it clear that the applicant has the burden of proving that an exemption is warranted.

In considering whether an applicant has met that burden, approval officers presume that the risks of direct aquifer contamination from the MSF/MCA are low if the applicant's proposed MSF/MCA meets AOPA's technical requirements to control runoff and leakage. However, when determining whether an MSF/MCA that meets AOPA's technical requirements should be exempted from the 100 metre water well setback requirement, approval officers also assess whether water wells that are less than 100 metres from the MSF/MCA could act as conduits for aquifer contamination.

Approval officers assess the following factors to determine the risk of aquifer contamination via the water well:

- How the well was constructed
- Whether the well is being properly maintained
- The distance between the well and the proposed MSF
- The estimated water well pumping rate
- Whether the well is up- or down-gradient from the MSF and whether this gradient is a reasonable indication of the direction of surface and groundwater flow between the two structures

These presumptions and considerations are based on NRCB Operational Policy 2016-7: *Approvals*, part 8.7.1.

Based on information provided by the applicant and from the Alberta Environment and Parks (AEP) water well database, the water well located approximately 85 m of the proposed barn complex is water well 137563.

Water well 137563 is located up gradient from the proposed barn complex. This well is reported to have been installed in 1988 and has a perforated or screened zone from 24.4 m to 36.6 m

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<sup>1</sup> Standards and Administration Regulation, Alta. Reg. 267/2001, section 7(1)(b).

below ground level across sandstone, coal and shale layers. These layers produce approximately 46 litres per minute of water that is reported to be used for livestock and garden watering purposes. The well's log identifies a protective clay layer from ground surface to 13.4 m below ground level. The well has a driven seal at 16.2 m below ground level (across the shallow shale layer).

In addition, the NRCB has developed a "water well exemption screening tool," based on the factors listed above, to help approval officers assess the groundwater risks associated with a nearby water well and to decide whether an exemption from the 100 metre setback to a well is warranted.<sup>2</sup> This tool consists of a two-stage risk screening process; each stage provides a numeric risk "score" based on the information inputted into the tool. The first stage focuses on the well's construction. If the well scores less than 10 at this stage, the tool suggests granting a setback exemption for the subject facility. If the well scores above 28, the tool recommends denying the exemption. Scores between 10 and 28 require applying the second stage of the screening process, which focuses on the gradient and other factors bearing on the risk of manure runoff or leachate reaching the water well. If the risk score at this stage is over 20, the tool suggests denying the setback exemption to the subject well.

For the risk screening process described above, the water well scored 22 and 5 in the first and second risk screening stages, respectively.

Based on the above information it is my assessment that an exemption to the 100 metre setback rule for the proposed barn complex is warranted and offers the same degree of protection and safety as that provided for by the regulations as:

- The proposed barn complex and its load out will have a liner that meets AOPA requirements
- The proposed facilities pose a low potential risk to groundwater when risk screened using the NRCB's environmental risk screening tool
- The results of the water well exemption screening tool indicate that an exemption is likely

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<sup>2</sup> A complete description of this tool is available under CFO/Groundwater and Surface Water Protection on the NRCB website at [www.nrcb.ca](http://www.nrcb.ca).

## **APPENDIX E: Explanation of conditions in Approval RA20030**

Approval RA20030 includes several conditions, discussed below. Approval RA20030 carries forward but modifies an existing condition, deletes an existing condition, and carries forward a number of already met construction conditions from existing permits (see sections 2, 3 and 4 of this appendix).

### **1. New conditions in Approval RA20030**

#### **a. Construction above the water table**

Section 9(2) of the Standards and Administration Regulation under the *Agricultural Operation Practices Act* (AOPA) requires the bottom of a liner of a manure storage facility or manure collection area to be not less than one metre above the water table at the site “at the time of construction.”

Mr. Thiessen proposes to have the floor of the new barns’ pits at a depth of 2.1 metres below ground and the pits in the barn connector facility will be 0.4 metres below ground. A groundwater quality assessment report on file for this CFO dated 2001 indicated that groundwater has been encountered at depths as shallow as 2.2 metres below ground (Envirowest Engineering Ltd., July 9, 2001). Mr. Thiessen estimated the water table to presently be at a depth of four metres below ground. I note how the depth of a water table may vary seasonally, from year to year, and across a site.

Based on this information, the proposed barns’ pits may not meet the one metre water table separation requirement at the time of construction. However, because the height of the water table can vary over time and across a site, the lack of detailed information regarding the depth to the water table in Mr. Thiessen’s application does not mean that the requirement cannot be met 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 observed to be one metre or less from the base of the facilities’ liner during their construction.

#### **b. Construction Deadline**

Mr. Thiessen proposes to complete construction of the proposed new barns and connector facility by November 1, 2021. He notes, though, that the completion date will hinge on climatic conditions and the issuance of approvals from other governing bodies. This time-frame is optimistic in my opinion for the proposed scope of work and the issuance of related approvals from other governing bodies. Due to this, a deadline of November 30, 2023 is included as a condition in Approval RA20030.

#### **c. Post-construction inspection and review**

The NRCB’s general practice is to include conditions in permits to ensure that the new or expanded facilities are constructed according to the required design specifications. Accordingly, Approval RA20030 includes conditions requiring the concrete used to construct the liners of the manure collection and storage portions of the barns and barn connector facility to be sulphate resistant and have a minimum 56-day compressive strength of 32 MPa.

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 RA20030 includes conditions stating that the Thiessens shall not place livestock or manure in

the manure storage or collection portions of the new facilities until NRCB personnel have inspected them and confirmed in writing that they meet the approval's requirements.

## **2. Condition carried forward but modified from development permit 01-095**

Condition five of this permit required the operation to maintain compliance with all regulations as set out in the 2000 Code of Practice for Responsible Livestock Development and Manure Management.

The above code of practice was superseded by the *Agricultural Operation Practices Act* (AOPA) and the regulations pursuant to it. For this reason, this condition will be modified and replaced with the general term in AOPA permits that states *the permit holder shall comply with the requirements of the Agricultural Operation Practices Act (AOPA) and the regulations passed pursuant to that act.*

## **3. Condition not carried forward from development permit 01-095**

Condition four of this permit required that prior to construction of the barn, the necessary approvals must be obtained through Alberta Environment and/or other appropriate departments to withdraw the water required for the proposed development and the existing residence located on the property. It also required that a system for monitoring the water wells on the property be set up.

NRCB-issued permits do not include conditions relating to water well usage (see section 2.2.5 of NRCB Operational Policy 2016-1: *Amending Municipal Permit Conditions.*) because this activity is regulated directly by Alberta Environment and Parks, under the *Water Act*. Given Alberta Environment and Park's regulatory role, concurrent oversight of resources by the NRCB would be inefficient and might lead to inconsistency with Alberta Environment and Parks requirements. For this reason, I am not carrying this condition forward into the new permit.

## **4. Construction conditions from development permits 88-123, 94-065 and 01-095 that are already met**

Municipal development permits 88-123 and 94-065 both included a condition requiring the permit holder to obtain a certificate of compliance from Alberta Agriculture and Forestry (the permits refer to then applicable name of the same government department at that time). I was unable to locate on file, nor was I provided with copies of certificates of compliance from Alberta Agriculture and Forestry related to development permits 88-123 or 94-065. Despite this, I was provided with one related to development permit 01-095. Regardless, based on aerial photos and related documents on file, it appears the barns were constructed and in use since 2002 (see Appendix A above). For this reason, I am of the opinion that these construction conditions are already effectively met.

Condition three of development permit 94-065 required the permit holder to obtain recommendations from Alberta Agriculture related to lagoon (or earthen liquid manure storage/EMS) construction to ensure that the EMS is water tight and will not allow manure to leach into surrounding soils and/or groundwater. I note in the Vaultus air photo (dated between 1999 and 2003, referenced in Appendix A) an EMS was present at the CFO and that it appeared to be in use. For this reason, I am of the opinion that this construction condition is already effectively met.

Municipal development permit 01-095 included a condition requiring the developer to locate all underground utilities prior to starting construction. Further, all three of the previous permits included conditions requiring the permit holder to obtain permits for utilities or a related building permit. I was not able to locate proof that these conditions were met. Despite this, as noted previously, the barns have been constructed since 2002. For this reason, I am of the opinion that these construction conditions are already effectively met.

Condition three of development permit 01-095 required two things. The first was proof from an Alberta Land Surveyor indicating that the lagoon (or EMS) is located more than 1,396 feet from the nearest residence. I was provided with a document prepared by a member of the Alberta Land Surveyors' Association indicating that the EMS was located 1,603 feet from the nearest residence (that document was dated December 6, 2001). Second, the condition required the installation of a liner in the EMS that is inspected by an engineer and that the liner meet the requirements under the Code of Practice. (I interpret this to be the "2000 Code of Practice for Responsible Livestock Development and Manure Management" which was superseded by AOPA and the regulations pursuant to AOPA. I also note how condition five of the Condition five of the initial 2001 permit referred to the 2000 Code of Practice for Responsible Livestock Development and Manure Management.) As noted in Appendix A, the EMS was inspected by a professional engineer. That engineer determined that the EMS liner met the requirements of the "Code of Practice" which I also interpret to be the 2000 Code of Practice for Responsible Livestock Development and Manure Management.

Since these construction conditions are met, or considered to be already met, they will be carried forward and are identified in the appendix to Approval RA20030.