

## Decision Summary RA20027

This document summarizes my reasons for issuing Authorization RA20027 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document RA20027. 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 12, 2020, Byemoor Hutterite Colony (Byemoor Farming) submitted a Part 1 application to the NRCB to construct a compacted soil lined earthen liquid manure storage (EMS) cell at an existing multi-species CFO. The Part 2 application was submitted and deemed complete on May 22, 2020.

The proposed EMS cell is to be 40 m wide, 70 m long and 4.25 m deep with 3:1 sloped interior walls. The proposed EMS cell will allow for additional liquid manure storage and for more manure application options for the CFO. There is no proposed increase in livestock.

Under AOPA, this type of application requires an authorization. (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 3-36-16 W4M in County of Stettler, roughly 12 kilometres northeast of the Hamlet of Byemoor. The landscape surrounding the CFO is gently undulating with a general slope to the north.

#### b. Existing permitted facilities

The CFO holds a deemed or grandfathered approval under section 18.1 of AOPA. The deemed permit includes municipal development permit 9727F, issued by County of Stettler on April 16, 1997. The county-issued permit allowed the construction and operation of two poultry barns. The deemed permit allows for the construction and operation of a multi species CFO.

Since AOPA came into effect on January 1, 2002, the NRCB has issued the CFO Approval RA02015A (which superseded Approval RA02015), Authorization RA03034, and Approval RA06022A (which superseded Approval RA06022). The NRCB determined the CFO’s deemed permit status when it issued Approval RA20015. The determination is in the accompanying decision report.

Collectively, these NRCB permits and the CFO’s deemed approval allow Byemoor Farming to construct and operate a multi-species CFO with 400 sows (farrow to finish), 75 milking cows (including associated dry cows and replacements onsite), 450 beef feeders, 450 beef finishers, 20,000 laying hens (plus associated pullets), 1,400 ducks and geese (I interpret this to be 1,400 ducks and 1,400 geese).

## **2. Notices to affected parties**

Under section 21 of AOPA, notice of an authorization application must be provided to municipalities that are “affected” by the application. Section 5 of AOPA’s Part 2 Matters Regulation lists the categories of municipalities that are affected parties. These categories include the municipality where the CFO is located. Under section 21(2) of the act, all affected municipalities are automatically also “directly affected” parties. The NRCB interprets section 21(3) as allowing affected municipalities to provide written submissions regarding whether the application meets the requirements of the regulations under the act. (See Operational Policy 2016-7: *Approvals*, part 7.11.2.)

The County of Stettler is both an affected and directly affected party because the CFO is located within its boundaries.

On May 22, 2020, the NRCB emailed referral letters and a copy of the application to the County of Stettler, Alberta Health Services (AHS), Alberta Environment and Parks (AEP), and the Paintearth Gas Co-Op Ltd.

## **3. Municipal Development Plan (MDP) consistency**

I have determined that the proposed EMS cell is consistent with the land use provisions of the County of Stettler’s municipal development plan and land use bylaw. (See Appendix A for a more detailed discussion of the county’s planning requirements.)

## **4. Responses to the application**

I received responses from AHS, AEP and the Paintearth Gas Co-Op. No response was received from the County of Stettler.

Mr. Quentin Schatz, a public health inspector/executive officer with AHS, had no objections to this application as there are no water wells within 100 m of the proposed facility.

Ms. Laura Partridge, a senior water administration technologist with AEP, did not raise any concerns with this application. She recommended in her response that the applicant should check if they have adequate water licensing under the *Water Act*.

Mr. Scott Bagshaw, the general manager of the Paintearth Gas Co-Op, did not object to this application.

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

When reviewing a new authorization application 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, which can fall 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 Byemoor Farming's existing CFO facilities were assessed in 2009. According to that assessment, the swine EMS posed a low risk to groundwater. (That risk assessment did not assess the risk posed to surface water.)

Since the 2009 risk assessment, a new version of the risk screening tool was released. For this reason, I assessed the risks posed by the CFO's existing facilities using the new version of the tool. I assumed that the existing swine EMS, dairy EMS and feedlot catch basin pose the highest risk to surface water and groundwater of the CFO's existing facilities due to their location and construction. Under the risk screening tool, all three of these facilities pose a low potential 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 potential risk to both groundwater and surface water. Therefore, a further assessment of the risks posed by the other CFO facilities, using the NRCB's environmental risk screening tool, is not necessary.

I also assessed the proposed new EMS cell using the NRCB's risk screening tool, and determined that it poses a low risk to groundwater and surface water.

## **6. Other factors considered**

The application meets all relevant AOPA requirements, with the terms and conditions summarized in part 7 and in Appendix B.

With respect to the act's technical requirements, the proposed EMS cell:

- 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 groundwater protection requirements for the design of floors and liners of manure storage facilities

## **7. Terms and conditions**

Authorization RA20027 permits the construction of the new EMS cell. It also contains terms that the NRCB generally includes in all AOPA authorizations, 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, Authorization RA20027 includes conditions that:

- Set a deadline of November 30, 2021 for the approved construction to be completed
- Require submission of an engineer's completion report
- Prohibit Byemoor Farming from placing manure or livestock in the new EMS cell until it has been inspected by the NRCB following its construction

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

## **8. Conclusion**

Authorization RA20027 is issued for the reasons provided above, in the attached appendices, and in Technical Document RA20027.

Authorization RA20027 should be read in conjunction with the deemed permit, including municipal development permit 9727F, and NRCB-issued Approvals RA02015A, RA06022A and Authorization RA03034, which all remain in effect.

July 13, 2020

(Original Signed)  
Jeff Froese  
Approval Officer

### **Appendices:**

- A. Consistency with the municipal development plan
- B. Explanation of conditions in Authorization RA20027

## APPENDIX A: Consistency with the municipal development plan

Under section 22 of AOPA, an approval officer may approve an application for an authorization 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 22(2.1) 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.”)

Byemoor Farming’s CFO is located in the County of Stettler and is therefore subject to that county’s MDP. The County of Stettler adopted the latest revision to this plan on June 25, 2014, under Bylaw #1529-14. Section 4.15 of the MDP deals specifically with CFOs. The relevant subsections of this section to this application are discussed below.

Subsection 4.15(d) states that the CFO site “must be located” in either the Agricultural District or the Agricultural Preserve District under the county’s land use bylaw, otherwise the county will ask the NRCB to include a condition in the permit requiring the applicant to obtain rezoning from the county. This CFO is located within the Agricultural District. Therefore, this application is consistent with this MDP policy.

Subsection 4.15(e) states that the “proposed location of a CFO structure must comply with the minimum front, side and rear yard setbacks for farm buildings as described in the land use bylaw.” This is likely not a land use provision as it calls for site specific information. I am of the opinion that this subsection is a test or condition and as noted above shouldn’t be considered as part of my MDP consistency analysis. Regardless, the proposed EMS cell meets the front, rear and side yard setbacks (7.62 m) in the county’s land use bylaw.

Subsection 4.15(f) states that the county *may* request that the NRCB include a condition in the permit requiring the applicant to enter into a road use agreement with the county. This is likely not a land use provision. Nevertheless, the county has made no such request for this application. Further, NRCB policy is not to use AOPA permit conditions to require applicants to enter into road use agreements. (See NRCB Operational Policy 2016-7: *Approvals*, part 8.9.)

Subsections 4.15(h) and (i) preclude new or expanding CFOs within any exclusion zones identified in an intermunicipal development plan or in any area structure, concept or outline plans listed in those subsections. This CFO is located near, but not within the IDP between the County of Paint Earth and the County of Stettler (County of Stettler Bylaw # 1618-19) or within any of the other stated exclusion zones.

For the reasons stated above, I conclude that the application is consistent with the land use provisions of the County of Stettler’s MDP.

In my view, the text of the County of Stettler’s MDP also provides a clear intent to adopt provisions from the land use bylaw (LUB), in sections 1.0, 3.6, 4.1, 4.7, 4.15, and 4.16.

Following the NRCB Operational Policy 2016-7: *Approvals*, part 8.2.3, I also considered the County of Stettler's Land Use Bylaw (most recently amended on May 13, 2020 by Bylaw #1634-20). Under the County's Land Use Bylaw, the subject land is currently zoned as Agricultural District.

CFOs are not listed as permitted or discretionary land uses within the Agricultural District. The LUB provides further direction on this in section 8.1 where CFOs are exempted from the definition of agricultural operations. However, section 91.14 of the bylaw states that the county "supports the location" of CFOs in the Agricultural District, if they "comply with the relevant policies" in the county's MDP, particularly, the exclusion zones cross-referenced in the inter-municipal development plans, and around approved area structure plans, concept plans and outline plans. The county's response to this application indicated that the subject property is not located within any areas covered by area structure plans or intermunicipal development plans. On this basis, I am of the opinion that the CFO does not conflict with the LUB.

## APPENDIX B: Explanation of conditions in Authorization RA20027

Authorization RA20027 includes several conditions, discussed below:

### a. Construction above the water table

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

In 2002 it was determined by an engineer that the water table was deeper than nine metres below ground in the area of the EMS, including the now proposed EMS cell. The bottom of the of the proposed EMS cell is to be four metres below ground. Based on this, and a required two metre thick compacted liner, the bottom of the liner would be six metres below ground.

Based on this information, the proposed new EMS cell is likely to meet the one metre requirement of section 9(2). However, because the height of the water table can vary over time, a condition is included requiring applicant to cease construction and notify the NRCB immediately if the water table is encountered during construction.

### b. Groundwater protection requirements

Byemoor Farming didn't include a proposed thickness for the new EMS cell's liner (wall and floor thickness). Despite this, they provided proof, from a previous geotechnical investigation, that indicated a two metre thick compacted soil liner could meet the requirements of Section 9 of AOPA's *Standards and Administration Regulation*.

The regulation states that the liner of a manure collection area or manure storage facility must provide equal or greater protection than a one metre thickness of compacted soil with a hydraulic conductivity (or rate of flow through that one metre thickness) not more than  $1.0 \times 10^{-7}$  cm/sec.

The information provided by Byemoor Farming included a lab measurement of the hydraulic conductivity of the materials that will be used to construct the compacted soil liner. Lab measurements of hydraulic conductivity are made in a precisely controlled setting and are typically based on a small soil sample. Therefore, the NRCB generally multiplies lab-measured hydraulic conductivity values by a factor of 10 to reflect the potential variability in actual liner materials and conditions that can reasonably be expected to be achieved in the field.

Example:      Hydraulic conductivity = k  
                  Lab k =  $1 \times 10^{-9}$  cm/sec  
                  Expected field k =  $10 \times (1 \times 10^{-9}$  cm/sec) =  $1 \times 10^{-8}$  cm/sec

In this case, the lab measurement of hydraulic conductivity was  $2.0 \times 10^{-8}$  cm/sec. With the required ten-fold modification, the expected field value is  $2.0 \times 10^{-7}$  cm/sec.

A hydraulic conductivity of  $2.0 \times 10^{-7}$  cm/s is faster (or worse) than  $1.0 \times 10^{-7}$  cm/s. However, a two metre thickness of the material already tested will provide the same effective rate of flow as a one metre thick liner with a hydraulic conductivity of  $1.0 \times 10^{-7}$  cm/s. For this reason, the constructed liner (made of the material tested) must be at least two metres thick to meet the regulation's requirement.

To provide additional assurance that the as-built EMS cell adequately protects groundwater, Authorization RA20027 includes conditions requiring Byemoor Farming to provide:

- an engineer's completion report certifying that the EMS cell was constructed with the same liner material as that used for hydraulic conductivity testing, is at least two metres thick, and constructed under the supervision of an engineer.
- proof that the EMS cell inlet has an energy dissipating device that will limit scouring of the floor and walls of the EMS cell
- proof that the EMS cell has agitation ramps and pads to limit damage to the liner

**c. Construction Deadline**

Byemoor Farming proposes to complete construction of the proposed new EMS cell by September 2020. This time-frame may not provide adequate time for the proposed scope of work as poor climatic conditions may prohibit construction. For this reason, the deadline of November 30, 2021 is included as a condition in Authorization RA20027.

**d. 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, Authorization RA20027 includes a condition requiring the new EMS cell to be inspected by the NRCB before it is used to collect or store manure.

To be effective, the inspection must occur before manure is placed in the newly constructed facility. Authorization RA20027 includes a condition stating that Byemoor Farming shall not place manure in the manure storage portions of the new EMS cell until NRCB personnel have inspected it and confirmed in writing that it meets the authorization requirements.