

Decision Summary RA20011

This document summarizes my reasons for issuing Authorization RA20011 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document RA20011. All decision documents and the full application are available on the Natural Resources Conservation Board (NRCB) website at 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 February 14, 2020, Pilgrim Dairy Ltd. (Pilgrim Dairy) submitted a Part 1 application to the NRCB to construct a new earthen liquid manure storage (EMS) at an existing dairy CFO. The Part 2 application was submitted on February 18, 2020. On August 10, 2020, I deemed the application complete.

The Part 2 application proposes to construct a circular EMS (68 m diameter and 5 m deep) with a compacted soil liner. It also proposes to decommission the existing EMS. 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.)

a. Location

The existing CFO is located at NE 30-42-26 W4M in Ponoka County, roughly 7.5 km southwest of the Town of Ponoka. The terrain is undulating to rolling.

b. Existing permitted facilities

The CFO is grandfathered with a deemed registration under section 18.1 of AOPA. Since AOPA came into effect on January 1, 2002, the NRCB has issued the CFO Registration RA05051 and Authorization RA14021. (The NRCB determined the CFO’s grandfathered status when it issued Registration RA05051. The determination is in the accompanying decision summary.)

Collectively, these NRCB permits and the CFO’s deemed registration allow Pilgrim Dairy to construct and operate a 150 milking cow dairy (plus associated dry cows and replacements) CFO. The CFO’s deemed and NRCB-permitted facilities are listed in Authorization RA14021 and the appendix to it.

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.)

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

On August 10, 2020, the NRCB emailed referral letters and a copy of the application to Ponoka County, Alberta Health Services (AHS), Alberta Environment and Parks (AEP), Alberta Agriculture and Forestry (AF), and utility right of way holder Gull Lake Deer Creek Gas Co-op Ltd.

3. Responses from the municipality and referral agencies

I received a response from persons representing the county, AHS, AEP, AF and the Gull Lake Deer Creek Gas Co-op.

Mr. Tom Webber, the assistant chief administrative officer with Ponoka County, indicated in a phone conversation that he has no concerns with this application. As noted in section 2, Ponoka County is a directly affected party.

The application's consistency with Ponoka County's municipal development plan is addressed in Appendix A, attached.

Mr. Gordon Watt, an executive officer/public health inspector with AHS, recommended approval of the application. He also provided several comments related to the protection of water wells, he also indicated that any abandoned or un-used wells should be properly decommissioned, that appropriate control measures should be implemented to prevent potential nuisances from impacting nearby residences and businesses, and that deceased livestock should be disposed of in accordance with the Nuisance and General Sanitation Regulations 2003, and any other applicable legislation.

Ms. Laura Partridge, a senior water administration officer with AEP, indicated that additional water licensing is not required at this time and did not raise concerns with this application.

Mr. Al Spink, a member of the inspection and investigation section of AF's animal health and assurance branch, did not raise concerns with this application.

Mr. Don Hoskins, the general manager of the Gull Lake Deer Creek Gas Co-op, did not raise concerns with this application.

A copy of the responses to this application were provided to the applicant for their information.

4. 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.) 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 Pilgrim Dairy's existing CFO facilities were assessed in 2014. According to that assessment, the existing EMS poses a moderate potential risk to groundwater and a low potential risk to surface water. The heifer shed and dry cow barn, the facilities which were assumed to be the next highest risk, both present a low potential risk to groundwater and surface water.

Approval RA05051 already included conditions (the installation and monitoring of an EMS leakage detection system) to address the risk posed by the existing EMS.

The circumstances have not changed since that assessment was done. As a result, a new assessment of the risks posed by the CFO's existing facilities is not required.

Considering that the proposed EMS will have an engineer's approved liner (that meets AOPA liner requirements) and based on results of the environmental risk screening that I completed, the proposed circular EMS will pose a low risk potential risk to surface water and groundwater.

5. Other factors considered

The application meets all relevant AOPA requirements, with the terms and conditions summarized in part 6.

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

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

- 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

6. Terms and conditions

Authorization RA20011 permits the construction of the new circular EMS. Authorization RA20011 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 RA20011 includes conditions that:

- Set a deadline of November 30, 2023 for the approved construction to be completed
- Require submission of an engineer's completion report for the new EMS
- Prohibit Pilgrim Dairy from placing manure in the new EMS until it has been inspected by the NRCB following its construction

- Require the existing EMS to be decommissioned

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

7. Conclusion

Authorization RA20011 is issued for the reasons provided above, in the attached appendices, and in Technical Document RA20011.

Authorization RA20011 should be read in conjunction with the deemed registration, Registration RA05051 and Authorization RA14021, which remain in effect.

September 30, 2020

(Original Signed)
Jeff Froese
Approval Officer

Appendices:

- A. Consistency with the municipal development plan
- B. Explanation of conditions in Authorization RA20011

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.”)

Pilgrim Dairy’s CFO is located in Ponoka County and is therefore subject to that county’s MDP. Ponoka County adopted the latest revision to this plan in October 2018, under Bylaw 6-08-MDP. The relevant sections of the MDP are discussed below.

Section 2 of the MDP contains 11 numbered “policies” relating to CFOs. Of these, policies 2.7, 2.9, 2.10 and 2.11 are not relevant to this application for the reasons set out above. The remaining policies in section 2 are discussed below.

Under policy 2.1, the county “encourages” the development of CFOs to add value to crop production and provide “more employment and income per acre of land.” However, the policy also states that the environment and neighbours’ rights “must be protected.” This policy likely isn’t a relevant “land use provision” because it relates broadly to economic development, not CFO siting. Regardless, it provides a general context for interpreting and applying the other policies in section 2.

Policy 2.2 states that it’s the county’s belief that “very large CFOs are inappropriate in this part of Alberta, and requests the NRCB not to allow them here (in Ponoka County).” This policy defines “very large” as “more than ten times” the threshold for approvals in the Part 2 Matters Regulation under AOPA. In this case, the threshold for approvals for dairies are 200 milking cows, so a “very large” dairy CFO in Ponoka County would have at least 2,000 milking cows. This application does not propose an increase in livestock and the CFO is already permitted with a capacity of 150 milking cows plus associated dry cows and replacements. This does not fit the definition of a “very large” CFO as set out in policy 2.2 and the CFO as a whole is therefore consistent with this policy.

Policy 2.3 has two parts. The first part states that no new CFO shall be established within specified distances to itemised urban developments, watersheds and land within a CFO exclusion zone in an Area Structure Plan (ASP) that has been adopted by bylaw. This CFO is not located within any of the specified setbacks, so the first part of this policy is not applicable to this CFO or this application.

The second part of policy 2.3 of the MDP calls for “very strict” conditions on manure handling and storage in the Chain Lakes and Maskwa Creek watersheds. This CFO is not located within either of these watersheds. Further, this policy likely isn’t a “land use provision” because it calls for discretionary judgements about what conditions are “very strict.” In addition, section 22(2.1)

of AOPA precludes me from considering MDP provisions “respecting tests or conditions related to the construction of or the site for a confined feeding operation or manure storage facility” and regarding the land application of manure. Even if I did consider this provision, the proposed circular EMS meets AOPA’s technical requirements for manure handling and storage and, in my opinion, those requirements are considered to be “very strict.”

Policy 2.4 calls for the NRCB to “set strict rules for the timely incorporation of manure within a mile of any urban municipality or rural residence.” Section 22(2.1) of AOPA precludes me from considering this policy because it relates to the land application of manure. The regulations under AOPA regulate the manure application process, including timely incorporation in specified circumstances (see section 24 of the Standards and Administration Regulation which sets out the manure incorporation requirements under AOPA for different cropping methods).

Policy 2.5 requests the NRCB not to allow the siting of CFOs within two miles of “any lake” unless the “regulators” are “convinced” that the CFO’s manure management system is “fail-safe” and the CFO poses “no reasonable risk of contamination of the lake.” This policy is likely not a “land use provision” because its “fail-safe” and “reasonable risk” tests call for discretionary, CFO-specific judgements. The policy may also be a “test or condition,” which I am precluded from considering under AOPA’s section 22(2.1). Regardless, this is an existing CFO which is not located within two miles of a lake identified in the MDP.

Policy 2.6 states that CFOs “should not be established or expanded” where there is “any risk that runoff will contaminate domestic water supplies.” This policy likely is not a “land use provision” because it calls for discretionary judgements about acceptable risks. (The policy’s “any risk” test is a low risk threshold, but I read the threshold as more than “minor” or “insignificant.”) The proposed facility meets AOPA’s operational and design requirements, which are designed to minimize the risks to surface water and groundwater. Further to this, this is not an application to establish a CFO or to expand the existing one (there is no application for more livestock or an increase in manure production) at this time. For this reason, this policy is not applicable to this application.

Policy 2.8 applies to new CFOs and uses, but essentially modifies, AOPA’s MDS requirements by measuring the AOPA-derived minimum distance of separation to the edge of an adjacent landowner’s property. This application is not for a new CFO and so policy 2.8 is not applicable to this application.

Based on the above, I conclude that the application is not inconsistent with the land use provisions of the Ponoka County’s MDP. The county’s response supports my conclusion.

In my view, the text of Ponoka County’s MDP also provides a clear intent to incorporate the land use bylaw (LUB), in sections 1.4, 1.6, 4.10, 10.3, 12.1, 17.5 and in Appendix A. Following the NRCB Operational Policy 2016-7: *Approvals*, part 8.2.3, I also considered Ponoka County’s LUB 7-08-LU. Under that bylaw, the subject land is currently zoned Agricultural (AG). CFOs are listed as a permitted land use within this land use zoning, provided that they hold the required authorization (or permit) under AOPA. As noted in this decision summary, the CFO already holds a registration and an authorization under AOPA.

APPENDIX B: Explanation of conditions in Authorization RA20011

Authorization RA20011 includes several conditions, discussed below:

a. Construction above the water table

Section 9(2) of the Standards and Administration Regulation under the *Agricultural Operation Practices Act* (AOPA) prohibits construction of a manure storage facility if the bottom of its liner is less than one metre above the water table at the site “at the time of construction.”

The base of the proposed earthen liquid manure storage’s (EMS) liner is to be at a depth of 5.6 m below ground. The geotechnical report attached to Application RA20011 indicates that the water table was deeper than 4.8 m near the proposed EMS in January 2020. Despite this, other geotechnical information for this CFO suggests that the water table maybe as shallow as 2.76 m below ground.

Based on this information, the proposed EMS may or may not meet the one metre requirement of section 9(2). This is because the height of the water table can vary over time due to climatic conditions and season. The lack of adequate depth to water table indicated in Pilgrim Dairy's report 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 during construction.

b. Groundwater protection requirements

Pilgrim Dairy proposes to construct the new EMS with a 1.1 metre thick compacted soil liner. Section 9 of AOPA’s Standards and Administration Regulation specifies a maximum hydraulic conductivity for this type of liner in order to minimize leakage.

To demonstrate compliance with this standard, Pilgrim Dairy provided lab measurements 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 = 1×10^{-9} cm/sec
 Expected field k = $10 \times (1 \times 10^{-9}$ cm/sec) = 1×10^{-8} cm/sec

The regulations provide that the actual hydraulic conductivity of a one metre thick compacted soil liner must be equivalent to or not be more than 1×10^{-7} cm/sec.

In this case, the lab measurement was 1.1×10^{-8} cm/sec. With the required ten-fold modification, the expected field value is 1.1×10^{-7} cm/sec. This expected value is above the maximum value in the regulations. Despite this, a 1.1 m thick liner will provide an equivalent protection as required in the regulations.

To provide additional assurance that the as-built EMS adequately protects groundwater, Authorization RA20011 includes a condition requiring Pilgrim Dairy to provide an engineer’s completion report certifying that the as-built EMS was constructed according to the proposed procedures and design specifications including:

- that it was constructed under the supervision of an engineer
- that it was constructed of the same liner material as that used for hydraulic conductivity testing
- that the inlet is located in the lower quarter of the facility
- the horizontal and vertical dimensions of the facility including elevations above and below grade, berm heights, and side slopes
- that its constructed liner is at least 1.1 m thick
- the location is the same as in the application
- confirm that the liner was constructed in accordance with the specifications stated in Envirowest Engineering's Site and Soil Assessment Liquid EMS Design report (project 1911-424409; July 8, 2020)

c. Construction Deadline

Pilgrim Dairy proposes to complete construction of the proposed circular EMS by November 30, 2023. This time-frame is considered to be reasonable for the proposed scope of work. The deadline of November 30, 2023 is included as a condition in Authorization RA20011.

d. Post-construction inspection and review

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 manure is placed in the newly constructed facilities. Authorization RA20011 includes a condition stating that Pilgrim Dairy shall not place manure in the new EMS until NRCB personnel have inspected it and confirmed in writing that it meets the authorization requirements.

e. Decommissioning of existing EMS

As part of the application for the new EMS, Pilgrim Dairy has indicated that it will decommission the existing EMS as the new one is constructed. I interpret this decommissioning to be in accordance the decommissioning of a facility in accordance with Technical Guideline Agdex 096-90, "Closure of Manure Storage Facilities and Manure Collection Areas".

I note that decommissioning a facility while its replacement is being constructed can be a logistical challenge, so in my opinion it is prudent to require the old EMS to be decommissioned after the new one is constructed and approved for use.

To ensure that the existing EMS is decommissioned properly and in a timely order a condition will be placed in the permit requiring the permit holder to decommission the existing EMS within one year of new one being constructed and approved for use by the NRCB. The decommissioning must be completed in accordance with the requirements of Technical Guideline Agdex 096-90, for facility type 1, earthen liquid manure storage facilities with a moderate risk level.