

Decision Summary RA22029

This document summarizes my reasons for issuing Authorization RA22029 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document RA22029. 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.

Under AOPA this type of application requires an authorization. For additional information on NRCB permits please refer to www.nrcb.ca.

1. Background

On December 6, 2022, Markus Hehli on behalf of Mosnang Holsteins Ltd. (Mosnang) submitted a Part 1 application to the NRCB to construct a new young heifer barn (54.9 m x 20.5 m) at an existing dairy confined feeding operation (CFO). The floor of the barn will consist of a concrete and a clay liner.

The Part 2 application was submitted on April 25, 2023. On May 4, 2023, I deemed the application complete.

a. Location

The existing CFO is located at NW 12-43-2 W5M in Ponoka County, roughly 7.5 kilometres northeast of Rimbey, Alberta. The terrain is generally rolling, sloping to the south.

The CFO is already permitted under Registration RA12001.

2. Notices to affected parties

Under section 21 of AOPA, the NRCB notifies all parties that are “affected” by an authorization application. Section 5 of AOPA’s Part 2 Matters Regulation defines “affected parties” as:

- the municipality where the CFO is located or is to be located
- in the case where part of a CFO is located, or is to be located, within 100 m of a bank of a river, stream or canal, a municipality entitled to divert water from that body within 10 miles downstream
- any other municipality whose boundary is within a notification distance. In this case, the notification distance is ½ mile(s) (805 m) from the CFO

A copy of the application was sent to Ponoka County, which is the municipality where the CFO is located. The CFO is not located within 100 m of the bank of the river, stream, or canal.

3. Notice to other persons or organizations

Under NRCB policy, the NRCB may also notify persons and organizations the approval officer

considers appropriate. This includes sending applications to referral agencies which have a potential regulatory interest under their respective legislation.

Referral letters and a copy of the complete application were emailed to Alberta Health Services (AHS), Alberta Environment and Protected Areas (EPA) and Alberta Agriculture and Irrigation (AGI).

I also sent a copy of the application to Pembina Pipeline Corp., Fortis Alberta Inc., Gull Lake Deer Creek Gas Co-op Ltd., i3 Energy Canada Ltd., and Cenovus Energy Inc.

I received a response from AHS.

Ms. Kristina Croce, an AHS executive officer, indicated that AHS has no concerns with this application and included some comments under the Public Health Act and its regulations.

4. Municipal Development Plan (MDP) consistency

I have determined that the proposed construction is consistent with the land use provisions of Ponoka County's municipal development plan. (See Appendix A for a more detailed discussion of the county's planning requirements.)

5. AOPA requirements

With respect to the technical requirements set out in the regulations, the proposed construction:

- Meets the required AOPA setbacks from all nearby residences (AOPA setbacks are known as the "minimum distance separation" requirements, or MDS) with an exemption under Section 3(5)(c) of the Standard and Administration Regulation (The proposed barn is within the footprint of the existing CFO and away from the closest neighboring residences).
- Meets the required AOPA setbacks from 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 and manure collection areas

With the terms and conditions summarized in part 9, the application meets all relevant AOPA requirements. The exemptions that are required to address the AOPA requirements around the water well setbacks are discussed in the following parts of this decision summary.

6. Responses from municipality

Directly affected parties are entitled to a reasonable opportunity to provide evidence and written submissions relevant to the application and are entitled to request an NRCB Board review of the approval officer's decision. Not all affected parties are "directly affected" under AOPA.

Municipalities that are affected parties are identified by the act as "directly affected." Ponoka County is an affected party (and directly affected) because the proposed facility is located within its boundaries.

Mr. Peter Hall, Assistant CAO with Ponoka County, provided a written response on behalf of the county. Mr. Hall stated that the application is consistent with Ponoka County's land use provisions of the MDP. The application's consistency with Ponoka County's MDP is addressed

in Appendix A, attached.

Mr. Hall indicated that the application meets the setbacks required by Ponoka County's land use bylaw (LUB).

7. Environmental risk of facilities

New CFO facilities which clearly meet or exceed AOPA requirements are automatically assumed to pose a low risk to surface and groundwater. However, there may be circumstances where, because of the proximity of a shallow aquifer, or porous subsurface materials, an approval officer may require surface or groundwater monitoring for the facility. In this case a determination was made, and surface or groundwater monitoring is not required.

When reviewing a new authorization application for an existing CFO, NRCB approval officers assess the CFO's existing buildings, structures, and other facilities. In doing so, the approval officer considers information related to the site and the facilities, as well as results from the NRCB's environmental risk screening tool (ERST). The assessment of environmental risk focuses on surface water and groundwater. The ERST 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 supported 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 Mosnang's existing CFO facilities were assessed in 2012 using the ERST. According to that assessment, the facilities posed a low potential risk to surface water and groundwater.

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.

8. Exemptions

I determined that the proposed young heifer barn is located within the required AOPA setback from two water wells. As explained in Appendix B, an exemption to the 100 metre water well setback is warranted due to the construction details and location upslope of the water wells.

9. Terms and conditions

Authorization RA22029 permits the construction of the new young heifer barn.

Authorization RA22029 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 RA22029 includes conditions that generally address a construction deadline, document submission, and a construction inspection. For an explanation of the reasons for these conditions, see Appendix C.

10. Conclusion

Authorization RA22029 is issued for the reasons provided above, in the attached appendices, and in Technical Document RA22029.

Authorization RA22029 must be read in conjunction with Registration RA12001 which remains in effect.

June 22, 2023

(Original signed)
Francisco Echegaray, P.Ag.
Approval Officer

Appendices:

- A. Consistency with the municipal development plan
- B. Exemptions from water wells setbacks
- C. Explanation of conditions in Authorization RA22029

APPENDIX A: Consistency with the municipal development plan

Under section 22 of AOPA, an approval officer may only approve an application for an authorization if the approval officer holds the opinion that the application is consistent with the “land use provisions” of the applicable municipal development plan (MDP).

This does not mean consistency with the entire MDP. In general, “land use provisions” cover MDP policies that provide generic directions about the acceptability of various land uses in specific areas.

Conversely, “land use provisions” do not call for discretionary judgements relating to the acceptability of a given confined feeding operation (CFO) development. Similarly, 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.”). “Land use provisions” also do not impose procedural requirements on the NRCB. (See NRCB Operational Policy 2016-7: Approvals, part 8.2.5.)

Mosnang’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.

Sections 2.1 to 2.8 of the MDP deal with CFOs. I have reviewed these sections, and find that these provisions generally apply to new or expanding CFOs. The MDP does not define “expansion,” so I will use the definition in the Part 2 Matters Regulation under AOPA. Section 1(1)(d)(i) of that regulation defines an “expansion” as the construction of additional facilities to confine more livestock. Mosnang’s application does not involve confining more livestock, so I conclude that it is not an “expansion” under this definition. Therefore, the MDP policies relating to CFO “expansions” do not apply to Mosnang’s application. Irrespective, the application meets the policies for expanded CFOs.

For these reasons, I conclude that the application is consistent with the land use provisions of Ponoka County’s MDP. The county’s response supports this conclusion.

APPENDIX B: Exemptions from water wells setbacks

Water Well Considerations

The proposed young heifer barn is to be located less than 100 m from water wells. I have confirmed during a site visit that two water wells are located approximately 30 m and 60 m from it. This is in conflict with the section 7(1)(b) of the *Standards and Administration Regulation* (SAR) under AOPA.

Section 7(2), however, allows for exemptions if, before construction, the applicant can demonstrate that the aquifer into which the water well is drilled is not likely to be contaminated by the manure storage facility (MSF)/manure collection area (MCA), and, if required, a groundwater monitoring program is implemented.

The potential risks of direct aquifer contamination from the MSF/MCA are presumed to be low if the applicant's proposed MSF/MCA meets AOPA's technical requirements to control runoff and leakage. Approval officers also assess whether the water well itself could act as a conduit for aquifer contamination.

In this case, I felt the following factors were relevant to determine the risk of aquifer contamination via the water well:

- a. How the well was constructed
- b. Whether the well is being properly maintained
- c. The distance between the well and the proposed MSF/MCA
- d. Whether the well is up- or down-gradient from the MSF/MCA 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.

The water wells:

Based on information provided by the applicant and from the Alberta Environment and Protected Areas (EPA) water well database, the water well located approximately 30 m east of the proposed young heifer barn is likely EPA water well ID 427429. This well is reported to have been installed in 1987 and has a perforated or screened zone from 24.7 m to 41.8 m below ground level across stratigraphy. The well has an above ground casing. This well is used for non-domestic purposes. The well's log identifies protective layer or layers from ground surface 14 m below ground level. The well has a driven and grout seal from ground surface to 24.6 m below ground level (across the layers). The well appeared to be in good condition at the time of my site inspection and its casing was protected by a welded steel cage. The well is up-gradient from the proposed barn.

Based on information provided by the applicant and from the Alberta Environment and Protected Areas (EPA) water well database, the water well located approximately 60 m northeast of the proposed young heifer barn is likely EPA water well ID 427428. There are no construction details for this well. The well has an above ground casing. This well is used for domestic purposes. The well appeared to be in good condition at the time of

my site inspection and its casing was protected by a welded steel cage. The well is up-gradient from the proposed barn.

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.¹

In this case, the results of the water well exemption screening tool suggest that an exemption is likely as seen in Technical Document RA22029.

¹ A complete description of this tool is available under CFO/Groundwater and Surface Water Protection on the NRCB website at www.nrcb.ca.

APPENDIX C: Explanation of conditions in Authorization RA22029

Authorization RA22029 includes several conditions, discussed below:

a. Groundwater protection requirements

Mosnang proposes to construct the liner for part of the young heifer barn with a 0.5 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, Mosnang 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.

The regulations provide that the actual hydraulic conductivity of a ½ metre thick compacted soil liner must not be more than 5×10^{-7} cm/sec.

In this case, the lab measurement was 2×10^{-9} cm/sec. With the required ten-fold modification, the expected field value is 2×10^{-8} cm/sec. This expected value is below (better than) the maximum value in the regulations. Therefore, the proposed liner meets the hydraulic conductivity requirement in the regulations.

To provide additional assurance that the as-built liner of the young heifer barn adequately protects groundwater, Authorization RA22029 includes a condition requiring Mosnang to provide an engineer's completion report certifying that the liner was constructed with the same liner material as that used for hydraulic conductivity testing, and that the liner of the young heifer barn was constructed according to the proposed procedures and design specifications.

b. Construction Deadline

Mosnang proposes to complete construction of the proposed new young heifer barn by 2023. This time-frame is unrealistic due to the time required for the permitting process, as well as the length of time needed to obtain the liner materials. It is my opinion that a deadline that allows more construction seasons is more reasonable for the proposed scope of work. The deadline of November 30, 2025 is included as a condition in Authorization RA22029.

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, Authorization RA22029 includes conditions requiring:

- a. the concrete used to construct the liner of the manure collection and storage portion of the young heifer barn to meet the specification for category D (solid manure – dry) in Technical Guideline Agdex 096-93 "Non-Engineered Concrete Liners for Manure Collection and Storage Areas."
- b. Mosnang to provide documentation to confirm the specifications of the concrete used to construct the manure storage and collection portions of the young heifer barn.

The NRCB routinely inspects newly constructed facilities to assess whether the facilities were constructed according to their required design specifications. To be effective, and to reduce risk to the operator, these inspections must occur before livestock or manure are placed in the newly constructed facilities. Authorization RA22029 includes a condition stating that Mosnang shall not place livestock or manure in the manure storage or collection portions of the new young heifer barn until NRCB personnel have inspected the facility and confirmed in writing that it meets the authorization requirements.