

Decision Summary BA20014

This document summarizes my reasons for issuing Authorization BA20014 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document BA20014. 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 August 21, 2020, Yoke Farm Ltd. submitted a Part 1 application to the NRCB to replace an existing earthen liquid manure storage with a new synthetic lined liquid manure storage (50 m x 50 m x 4 m) at an existing dairy CFO. The Part 2 application was submitted on August 24, 2020. On August 28, 2020, I deemed the application complete.

While reviewing the application, an addition (21 m x 23 m) to the existing dairy barn was identified that was constructed after January 1, 2002 without a permit under AOPA. The applicant informed me that addition was constructed in 2013 along with the replacement of the existing concrete scrape and drive alleys with new concrete within the existing dairy barn (87 m x 23 m) (total final barn dimensions 108 m x 23 m). When the barn addition was constructed and the scrape alleys were replaced, none of the existing pits were altered. The barn renovation and addition was completed to improve housing the existing livestock at the CFO. As a part of this application I will be permitting this previously completed construction. Jason Moodie, Inspector with NRCB compliance has been made aware of the unauthorized construction and has been documenting for compliance purposes.

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 28-61-27 W4M in Westlock County, roughly 9 km from Pibroch, AB. The terrain is relatively flat sloping to the south east. The nearest common body of water is an oxbow from the Pembina River approximately 195 metres to the southeast.

b. Existing permitted facilities

The CFO previously existed prior to January 1, 2002 with a capacity greater than the AOPA permitting thresholds, this assessment is based on infrastructure on site. Despite this, no official grandfathering has been completed to date at this CFO. As this application is for an authorization I will not be making an official grandfathering determination at this time.

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 existing 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 NRCB Operational Policy 2016-7: *Approvals*, part 7.11.2.)

Westlock County is both an affected and directly affected party because the proposed construction is located within its boundaries.

On August 28, 2020, the NRCB emailed referral letters and a copy of the application to the Westlock County, Alberta Health Services (AHS), Alberta Environment and Parks (AEP), and Alberta Agriculture and Forestry (AF).

3. Responses from the municipality and referral agencies

I received responses from Westlock County, AHS, and AF. No response was received from AEP.

Ms. Kathleen Deshoux, a development officer with Westlock County, provided a written response on behalf of the county. As noted in section 2, Westlock County is a directly affected party.

Ms. Deshoux stated that the application is consistent with Westlock County’s municipal development plan (MDP) and that there are no area structure plans (ASP) or intermunicipal development plans (IDP) that apply. The application’s consistency with the county’s MDP is addressed in Appendix A, attached.

Ms. Deshoux also listed the setbacks required by Westlock County’s land use bylaw (LUB). The application meets these setbacks. The property is zoned agriculture district in which CFOs are listed as discretionary use in this district.

Ms. Lu Wang, a public health inspector, replied on behalf of AHS. In her response she enquired if the application meets the setback requirements of AOPA and if the applicant has plans for odour and pest control. As explained in Section 5, below, the application meets the AOPA technical requirements with the exception of the two water wells which have been granted a variance (see Appendix B). With regards to odour and pest control, AOPA setbacks are designed to mitigate some of the issues for neighbouring residences.

Mr. Dennis Urban, an inspector, replied on behalf of AF. Mr. Urban stated AF has no concerns with the application.

4. Environmental risk screening of existing and proposed facilities

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

All of the CFO's existing and proposed facilities pose a low potential risk to groundwater or surface water: (The CFO's existing facilities are listed in Technical Document BA20014.)

5. Other factors considered

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

In addition, the proposed construction is consistent with the land use provisions of Westlock 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 already constructed and proposed construction:

- 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 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

I also determined that the dairy barn addition and floor reconstruction, which was completed without a permit, are located within the required AOPA setback from two existing water wells. However, as explained in Appendix B, I am prepared to issue a variance to the 100 metre water well setback requirement due to the location of the wells and their construction.

6. Terms and conditions

Authorization BA20014 permits the construction of the synthetic lined liquid manure storage and permits the addition to the dairy barn and the reconstruction of the dairy barn floors.

Authorization BA20014 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 BA20014 includes conditions that:

- Set a deadline of December 1, 2023 for the approved construction to be completed
- Require submission of the concrete specifications and an engineer's completion report
- Prohibit Yoke Farm's from placing manure in the new liquid manure storage until the facility has been inspected by the NRCB following its construction
- Require the existing earthen manure storage to be decommissioned

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

7. Conclusion

Authorization BA20014 is issued for the reasons provided above, in the attached appendices, and in Technical Document BA20014.

October 8, 2020

(Original signed)

Nathan Shirley
Approval Officer

Appendices:

- A. Consistency with the municipal development plan
- B. Variance to water well setback requirements
- C. Explanation of conditions in Authorization BA20014

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.”)

Yoke Farm’s CFO is located in Westlock County and is therefore subject to that county’s MDP. Westlock County adopted the latest revision to this plan in April 2016, under Bylaw #05-2016.

Section 4.1 of the MDP relates to the agricultural area policies.

Policy 4.1.1.3 clarifies that the “primary use” of this area is for both “extensive and intensive agricultural uses and confined feeding operations”. This is considered a general guiding principle and is not considered a land use provision, therefore this is not relevant to my decision. In any respect, this application is consistent with this provision.

Policy 4.1.2.2 states that the county will provide “input” to the NRCB on applications for new or expanded CFOs, based on the “technical and locational merits” of each application. This policy is likely not a land use provision because it requires site-specific, discretionary determinations (see Operational Policy 2016-7, *Approvals*, part 8.2.5). Therefore, this policy is not relevant to the MDP consistency determination required by section 22(1) of AOPA. At any rate, the application is not for a new or expanding CFO.

Policy 4.1.2.2 states further that CFOs and manure storage facilities “must fully satisfy all the requirements and regulations adopted under the Act, specifically the minimum distance separation requirements and land base requirements.” Policy 4.1.2.3 states “Minimum distance separations for CFOs shall conform to standards set out in the Agricultural Operations Practices Act.” Together, the use of the term “minimum distance separation” in policies 4.1.2.2 and 4.1.2.3 appear to be a reference to the minimum distance separation (MDS) requirement in section 3 of the Standards and Administration Regulation under AOPA. These MDP policies are likely not relevant to my MDP consistency determination, because these policies are based on AOPA’s MDS requirements. (See also Operational Policy, *Approvals*, part 8.2.5). That said, the CFO meets the MDS requirements under AOPA and meets all other AOPA technical requirements.

Policy 4.1.2.4 specifies CFOs requiring an approval, registration, or authorization maintain a 2.4 km setback from “corporate boundaries of any urban municipality within Westlock County” or a 0.8 km CFO setback from “Community Areas designated on Map 7.2.” Yoke farm’s is not within any of these setbacks and therefore meets this policy’s setback requirement.

Policy 4.1.2.5 states that CFOs are “discouraged from locating in environmentally sensitive areas where slope instability and or groundwater contamination may be a concern.” This policy

is likely not a land use provision because it requires site-specific, discretionary determinations (see Operational Policy 2016-7, Approvals, part 8.2.5). Therefore, this policy is not relevant to the MDP consistency determination required by section 22(1) of AOPA. At any rate, the application meets the “technical and locational” requirements of AOPA and is not for a new CFO.

Policy 4.1.2.6 states that in addition to AOPA, Area Structure Plans (ASP) in Westlock County and MDP policies in respect to CFOs should be followed. The development officer confirmed that there are no ASPs or IDPs in place at this time that are applicable to this location.

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

In my view, the text of Westlock County’s MDP also provides a clear intent to adopt provisions from the LUB, in sections 1, 3, 4, 5, and 6. Following the NRCB Operational Policy 2016-7: Approvals, part 8.2.3, I also consider Westlock County’s Land Use Bylaw (LUB) #04-2016. Under that bylaw, the subject land is currently zoned as Agriculture District. CFOs (as defined by AOPA) are listed as discretionary use under this zoning.

Under NRCB policy, CFOs are considered to be consistent with an LUB if CFOs are listed as either a permitted or discretionary land use for the relevant land use district (See NRCB Operational Policy 2016-7: Approvals, part 8.3) However, Section 7.7.1 of the LUB expressly exempts CFOs from municipal control under the LUB, because CFOs are regulated by the NRCB under AOPA.

For these reasons, I conclude that the application is not inconsistent with Westlock County’s LUB.

APPENDIX C: Variance to water well setback requirements

According to the application, two water well are located within 100 metres of the dairy barn addition and floor reconstruction. As noted in Technical Document BA20014, neither of these wells are located within 100 m of the proposed synthetic lined liquid manure storage.

In the NRCB's *Approvals Policy* (Operational Policy 2016-7: part 8.7.1) approval officers are to measure the distance to a water well to a manure collection area or manure storage facility such as a barn, pen or other related manure collection area from the closest part of the entire facility (including the existing and proposed portions). Because of this proximity, the applicant's dairy barn addition and floor reconstruction that was completed without a permit conflict with a section 7(1) of the *Standards and Administration Regulation* under AOPA, which prohibits the construction (and expansion) of manure storage facilities within 100 metres of water wells. The regulation allows approval officers to grant an exemption from this prohibition for proposed facilities but not for existing (already constructed) ones.

As the regulation does not contemplate exemptions for existing facilities, I need to either deny the application or alternatively consider if a variance is warranted under AOPA's section 17(1). It is my opinion that considering a variance is appropriate in this case.

On September 28, 2020 the applicant requested a variance to the water well setback requirement to the dairy barn and addition on the grounds that both wells are properly landscaped, maintained and located upslope from the dairy barn.

Approval officers must not grant variances or exemptions lightly or in the absence of substantive evidence they will produce equivalent levels of protection (see Decision 03-04, *AAA Cattle Ltd.* p 24). In considering whether a variance is appropriate for the pens, I have used the same tools that I would normally look at to determine if an exemption is warranted. I consider the water well exemption framework discussed above as useful for assessing the degree of protection for the water well in relation to the pens. In this case I note that the risks of direct aquifer contamination from the dairy pens are low if the MSF/MCA meets AOPA's technical requirements to control runoff and leakage. I also assess whether water wells that are less than 100 metres from the MSF/MCA could act as conduits for aquifer contamination. The results of that assessment are discussed below.

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 manure storage facility or manure collection area.

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

The following factors may help 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
- 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

The two wells are:

- Water well ID #1830100 (well located on the north end of the yard) was drilled in 2010 and is located approximately 60 m North of the dairy barn and is properly protected, landscaped with a an above ground level casing. The well lithology indicates clay to a depth of 38 m followed by clay with alternating sand and gravel seems. The surface casing bottom is at 73 m with perforations to the secondary casing from 109 m to 115 m. The applicant indicated that they draw from this well at a depth of 67 m which corresponds with a coarse grained sand and gravel seem.
- Water well ID #243684 (House well): This well is located approximately 57 m to the East of the dairy barn behind a shed in a protected bored culvert. The well log information is unknown and does not contain age or lithology encountered.

There is a third well onsite that was drilled in 2018 (located more than 100m) that the well log info matches the 2010 well indicating clay with some intermittent sand seems and no screen installed until 47 m. The applicant indicated that they draw from this well at a depth of 40 m.

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. (A complete description of this tool is available under CFO/Groundwater and Surface Water Protection on the NRCB website at www.nrcb.ca.) This tool is also useful for assessing the degree of protection for the water well in relation to the pens. The 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, water well 1830100 and 243684 scored 12 and 24 in the first and 5 and 8 in the second risk screening stages, respectively.

Based on the above information it is my assessment that varying the 100 metre setback rule for the dairy barn (including the addition) would offer the same degree of protection and safety as that provided for by the regulations for the following reasons:

- The dairy barn and the land surrounding it slope away from both wells.
- The floor of the dairy barn is built of concrete that meets the AOPA technical guidelines.
- In the unlikely event that any manure did leave the dairy barn, it is unlikely to migrate directly into the UGR because of the clay till protective layer across the site.

APPENDIX C: Explanation of conditions in Authorization BA20014

a. Construction above the water table

Sections 9(2) of the Standards and Administration Regulation under AOPA prohibit construction of a manure storage facility if its bottom is less than one metre above the water table at the site “at the time of construction.” The application suggests the water table is approximately 5 metre below ground surface with the bottom of the proposed synthetically lined liquid manure storage at 3 metres below ground surface, indicating that the water table could potentially be located within 1 m of the liner during its installation. However, because the height of the water table can vary seasonally, a condition is included requiring the applicant to cease construction of the synthetically lined liquid manure storage and notify the NRCB immediately if the water table is encountered during construction.

b. Construction Deadline

Yoke Farms proposes to complete construction of the proposed new synthetic lined liquid manure storage by 2023. This time-frame is considered to be reasonable for the proposed scope of work. The deadline of December 1, 2023 is included as a condition in Authorization BA20014.

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 BA20014 includes a condition requiring:

- A written completion report for the synthetically lined liquid manure storage, stamped by a professional engineer, certifying that the synthetic lined liquid manure storage has been constructed in accordance with the liner manufacturers’ requirements. At a minimum, the report must confirm that the liquid manure storage is constructed in the approved location; confirm the size of the synthetic lined liquid manure storage, including depths above and below grade; and confirm that the synthetic liner was installed in accordance with the liner manufacturers’ requirements, including under membrane surface preparation and proper sealing of any seams.

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. Authorization BA20014 includes a condition stating that Yoke Farms shall not place manure in the manure storage portions of the new liquid manure storage until NRCB personnel have inspected the facility and confirmed in writing that it meets the authorization requirements.

d. Decommissioning of existing earthen manure storage

As the new synthetic liquid manure storage is proposed to replace the existing earthen manure storage, a condition will be included requiring Yoke Farm’s to properly decommission this facility. This decommissioning must be in accordance with Technical Guideline Agdex 096-90, “Closure of Manure Storage Facilities and Manure Collection Areas’. Confirmation of this must be provided and accepted by the NRCB.