



Decision Summary RA24001

This document summarizes my reasons for issuing Approval RA24001 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document RA24001. 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 approval. For additional information on NRCB permits please refer to www.nrcb.ca.

1. Background

On January 2, 2024, Craig Ference on behalf of Ference Land & Cattle Corp. submitted a Part 1 application to the NRCB to construct a new beef CFO.

The Part 2 application was submitted on January 2, 2024. On January 24, 2024, I deemed the application complete.

The proposed CFO involves:

- Permitting a new CFO with a capacity of 6,000 beef finishers
- Permitting the previously constructed north livestock pens – 335 m x 137 m
- Permitting the previously constructed south livestock pens – 198 m x 274 m
 - Pens 8 and 9 (62.5 m x 52.4 m each) have not been constructed yet.
- Constructing south runoff control catch basin – 41 m x 40 m x 4 m deep
- Constructing north runoff control catch basin – 40 m x 70 m x 4 m deep

The applicant also requested a variance under section 17 of AOPA of the prohibition against manure storage facilities and manure collection areas less than 100 metres away from water wells. That variance request is discussed in Appendix D and section 9, below.

The north, and most of the south livestock pens were constructed in the summer and fall of 2023. As the pens are already constructed, these facilities are considered to be unauthorized construction. Therefore, the NRCB's compliance division issued a compliance directive (CD 23-06) on September 15, 2023, directing Ference Land & Cattle to stop using them after April 15, 2024, and to obtain an AOPA permit to be able to use them.

a. Location

The proposed CFO is located at E ½ 17-34-2 W4M in Special Area No. 4, approximately 4 km east of Kirriemuir, Alberta. The terrain is slightly hummocky with a general slope to the south and southwest, as well as to the north and northeast.

2. Notices to affected parties

Under section 19 of AOPA, the NRCB notifies (or directs 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:

- 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 person or municipality entitled to divert water from that body within 10 miles downstream;
- the municipality where the CFO is located 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 the size of this CFO the specified distance is two (2) miles. (The NRCB refers to this distance as the “notification distance”.)

None of the CFO facilities are located within 100 m of a bank of a river, stream, or canal.

A copy of the application was sent to Special Area No. 4, which is the municipality where the CFO is to be located.

The NRCB gave notice of the application by:

- public advertisement in the Consort Enterprise newspaper in circulation in the community affected by the application on January 24, 2024, and
- sending 20 notification letters to people identified by Special Area No. 4 as owning or residing on land within the notification distance.

The full application was made available for viewing during regular business hours and was posted on the NRCB website for public viewing.

3. Notice to other persons or organizations

Under section 19 of AOPA, 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.

A referral letter and a copy of the complete application were emailed to Alberta Environment and Protected Areas (EPA).

I also sent a copy of the application to Telus and Dry Country Gas Co-op Ltd. as they are right of way holders.

I did not receive any responses from these organizations.

4. Alberta Land Stewardship Act (ALSA) regional plan

Section 20(10) of AOPA requires that an approval officer must ensure the application complies with any applicable ALSA regional plan.

There is no ALSA regional plan for the area where the proposed CFO is to be located.

5. Special Area Land Use Order (LUO) consistency

I have determined that the proposed CFO is consistent with the land use provisions of Special Area No. 4's land use order (LUO). (See Appendix A for a more detailed discussion of the Special Area's planning requirements.)

6. AOPA requirements

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

- 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's nutrient management requirements regarding the land application of manure
- Meets AOPA groundwater protection requirements for the design of floors and protective layers of manure storage facilities and manure collection areas

With the terms and conditions summarized in part 12 and in Appendix E, the application meets all relevant AOPA requirements. The exemptions and variances that are required to address the AOPA requirements around the 100 metre setback to water wells are discussed in the following parts of this decision summary.

7. Responses from municipality and other directly affected parties

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." Special Area No. 4 is an affected party (and directly affected) because the proposed CFO is located within its boundaries.

Ms. Taryl Abt, a development officer, provided a written response on behalf of Special Area No. 4. Ms. Abt stated that the application is consistent with Special Area No. 4's land use order (LUO). The application's consistency with the land use provisions of Special Area No. 4's LUO is addressed in Appendix A, attached.

Apart from municipalities, any member of the public may request to be considered "directly affected." The NRCB received a response from one individual.

Mr. Kevin Clark (E½ 8-34-2 W4M) submitted a response and owns or resides on land within the 2 mile notification radius for affected persons. Because of his location within this radius, and because he submitted a response by the deadline, he qualifies for directly affected party status. (See NRCB Operational Policy 2016-7: Approvals, part 7.2)

Mr. Clark raised concerns regarding:

- The actual livestock numbers included in the application
- Manure spreading records (soil testing)
- Complaint from 2016
- Runoff from cow-calf and CFO operation

- Location of the cow-calf and the beef feeder operations
- Water usage

These concerns are addressed in Appendix B.

8. Environmental risk of CFO 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 and/or groundwater monitoring for the facility. In this case a determination was made, and no monitoring is required.

Additionally, as part of my review of this application, I assessed the risk to the environment posed by the CFO's existing (unauthorized pens) and proposed manure storage facilities and manure collection areas. I used the NRCB's environmental risk screening tool (ERST) to assist in my assessment of risk to surface water and groundwater (see NRCB Operational Policy 2016-7: Approvals, part Approvals, parts 9.17 and 9.18). The tool provides for a numeric scoring of risks, which can fall within 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.)

The assessment found that all the existing (unauthorized pens) and proposed facilities pose a low potential risk to groundwater and surface water.

9. Variances (for already constructed pens)

The applicant applied for a variance of the requirement for a water well to be at least 100 m away from a manure storage facility/manure collection area. I determined that the existing south pen area, which was constructed without a permit, is located within the required AOPA setback from two existing water wells. As explained in Appendix D, I am prepared to issue a variance to the 100 m water well setback due to the proper construction of the wells, located inside a shed, and the location upslope, from the south pens area.

10. Exemptions

I determined that the proposed pens 8 and 9 are located within the required AOPA setback from a water well. As explained in Appendix C, an exemption to the 100 m water well setback is warranted due to proper construction of the well and the location inside a shed from pens 8 and 9.

11. Other factors

Because the approval application is consistent with the LUO land use provisions, and meets the requirements of AOPA and its regulations, I also considered other factors.

AOPA requires me to consider matters that would normally be considered if a development permit were being issued. The NRCB interprets this to include aspects such as property line and road setbacks related to the site of the CFO. (Grow North, RFR 2011-01 at page 2). Approval officers are limited to what matters they can consider though as their regulatory authority is limited.

Although Ms. Abt did not list the setbacks required by Special Areas No. 4, she indicated that the application meets the recommended facility and manure disposal setbacks under the land use order.

I have considered the effects the proposed CFO may have on natural resources administered by provincial departments. AEP has not made me aware of statements of concern submitted under section 73 of the *Environmental Protection and Enhancement Act* or under section 109 of the *Water Act* in respect of the subject of this application. Furthermore, the application meets AOPA's technical requirements.

I am not aware of any written decision of the Environmental Appeals Board for this location (<http://www.eab.gov.ab.ca/status.htm>, accessed February 29, 2024).

Finally, I considered the effects of the proposed CFO on the environment, the economy, and the community, and the appropriate use of land.

Consistent with NRCB policy 2016-7: Approvals, part 9.10.9, I presumed that the effects on the environment are acceptable because the application meets all of AOPA's technical requirements. In my view, this presumption is not rebutted and the directly affected party's concerns have been addressed.

Consistent with NRCB policy 2016-7: Approvals, part 9.10.9, as the application is consistent with the land use order (LUO), the proposed development is presumed to have an acceptable effect on the economy and community. In my view, this presumption is not rebutted and the directly affected party's concerns have been addressed.

I also presumed that the proposed CFO is an appropriate use of land because the application is consistent with the land use provisions of the LUO (see NRCB Operational Policy 2016-7: Approvals, part 9.10.9). In my view, this presumption is not rebutted.

12. Terms and conditions

Approval RA24001 specifies the cumulative permitted livestock capacity as 6,000 beef finishers and permits the construction of the north and south runoff control catch basins, feedlot pens 8 and 9, and the previously constructed north and south livestock pen areas.

Approval RA24001 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 RA24001 includes conditions that generally address construction deadlines and construction inspections. For an explanation of the reasons for these conditions, see Appendix E.

13. Conclusion

Approval RA24001 is issued for the reasons provided above, in the attached appendices, and in Technical Document RA24001.

April 12, 2024

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

Appendices:

- A. Consistency with the municipal land use planning
- B. Concerns raised by directly affected party
- C. Exemptions from water wells setbacks
- D. Variances
- E. Explanation of conditions in Approval RA24001

APPENDIX A: Consistency with the municipal land use planning

Under section 20 of AOPA, an approval officer may only approve an application for an approval if the approval officer holds the opinion that the application is consistent with the “land use provisions” of the applicable municipal development plan (MDP). An MDP is a statutory plan provided for under section 632 of Part 17 of the *Municipal Government Act* (MGA).

The Special Areas Board is constituted under the *Special Areas Act* and is not subject to Part 17 of the MGA. However, the Special Areas Board has adopted a Land Use Order (LUO) to regulate and control the use and development of lands and buildings within Special Areas 2, 3 and 4, and to facilitate orderly and economic development in those areas. Under these circumstances, the LUO is equivalent to a MDP for the purposes of AOPA’s MDP consistency requirement. See NRCB Operational Policy 2016-7: Approvals, part 9.2.5, also DeJong, NRCB Decision RFR 2006-11, pp. 2-3 (concluding that, in applying the act’s MDP consistency requirement, an approval officer can consider a municipality’s land use bylaw, when the municipality is not legislatively required to adopt an MDP and has not done so).

While I will treat the Special Areas Board’s LUO as an MDP, I will still focus on the LUO’s “land use provisions.” The NRCB interprets the term “land use provisions” as covering 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 9.2.7) Under this interpretation, the term “land use provisions” also excludes 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.”) Therefore, any tests or conditions in the LUO will not be considered.

Ference Land & Cattle’s CFO is located in Special Area No. 4 and is therefore subject to the Special Areas Board LUO. (The LUO was enacted on March 3, 2015, under Ministerial Order No. MSL: 007/15.)

Under the LUO, the subject land is currently zoned as Agricultural District. Section 19 of the order states that the “purpose and intent” of this district is to “provide for extensive agriculture, while accommodating similar and compatible uses.” CFOs do not fall within the LUO’s definition of “extensive agriculture.” Nor does the LUO’s list of permitted or discretionary uses for the Agricultural District, in section 19, include CFOs. However, Appendix 2 of the LUO states that CFOs “may be located only within the Agricultural District,” which logically implies that CFOs may be located within that district. Appendix 2 of the LUO also includes four sections that provide further guidance regarding locating CFOs within the Agricultural District.

Section 1. States that “confined feeding operations shall be excluded” from numerous named locations, from provincially recognized “Historical or Cultural sites,” and from an 800 metre zone adjacent to the banks of the Red Deer and South Saskatchewan Rivers.

The proposed CFO is not located within any of these exclusion areas.

Section 2. Areas requiring mitigation – Indicates areas within Special Areas where mitigation is required if CFOs are located there.

The proposed CFO complies with the environmental protection requirements set out in AOPA which do address these recommendations and mitigation.

Section 3. Recommended Facility Setback.

- (1) From occupied dwellings, confined feeding operation facilities shall be setback according to the Category 4 Minimum Distance Separation (MDS), with a 1,600.00 metres minimum from occupied dwellings not owned or under the control of the CFO operator, without written consent of the owner/occupant.
- (2) Notwithstanding the above, circumstances may dictate an increased MDS based upon localized environmental aspects of topography, wind, and open spaces between the proposed facility and an occupied dwelling not under the control of the CFO. The Municipal Planning Commission shall be provided with the opportunity to provide a substantiated recommendation on any increased MDS.
- (3) From towns, villages, hamlets (with multiple dwellings), and community recreational facilities, confined feeding operation facilities shall be set back according to the Category 4 Minimum Distance Separation, with a minimum 3,200.00 metres from the North and West and a minimum 2,400.00 metres from the South and East. The purpose of varied setback distances is to recognize the differing impacts of odour and noise that may be generated by a CFO and carried along the prevailing winds.
- (4) Facility setback distances may be reduced through the use of technological developments such as odour limiting biofilters at the facility.

Section 3 refers to the term “minimum distance separation (MDS)”. The LUO does not define this term; I therefore presume that it refers to the MDS requirements in AOPA.

Under NRCB policy, approval officers should not consider provisions that are based on or modify the MDS requirements in AOPA. (See Operational Policy 2016-7: *Approvals*, part 9.2.8) Regardless, Ference Land & Cattle’s application meets these LUO policies.

Section 4. Recommended Setback for Manure Disposal - Discusses required setbacks for manure spreading from neighbouring residences, using category 4 Minimum Distance Separation. A minimum manure disposal setback of 1 mile for occupied residences is included. A minimum manure disposal setback of 1.5 to 2 miles (depending on direction) for hamlets with multiple residences and community recreation facilities is also included.

Section 20(1.1) of AOPA states: “In considering ... whether an application is consistent with the municipal development plan land use provisions, an approval officer shall not consider ... any provisions respecting tests or conditions related to the construction of or the site for a confined feeding operation...nor... the application of manure, composting materials or compost.” I have reviewed parts of section 3 and all of section 4 of Appendix 2 of the Special Areas LUO and I have determined them to be provisions respecting tests or conditions related to the construction of a CFO or the application of manure; and therefore, these sections will not be considered. Irrespective, the operator is required to meet the environmental protection requirements set out in AOPA which do address these recommendations.

In their response letter, the Development Officer, on behalf of Special Area No. 4 indicated that the Special Areas Municipal Planning Commission has reviewed the application and they have no concerns.

For these reasons, I conclude that the application is consistent with the relevant land use provisions of the Special Areas Board LUO.

APPENDIX B: Concerns raised by the directly affected party

The directly affected party (Mr. Kevin Clark) raised a number of concerns and questions which are listed and summarized below, together with my analysis and conclusions.

In an email dated March 2, 2024, Craig Ference, on behalf of Ference Land & Cattle Corp, responded to the issues raised in the written response:

- 1. Livestock numbers** – The respondent raised questions regarding the actual number of animals included in the application, since the applicant has claimed other animal numbers under other companies.

Applicant's response:

The applicant stated the following:

“We have multiple partnerships (including a JV with Echo Sands Ranching) where some of our mother cows and feeder cattle are kept. As well we get feeder/fat cattle fed in custom feedlots including Korova and Rim Rock. The home feedlot near Kirriemuir, the location in question, does not hold, nor do we have all the cattle that we own located there. We will house the amount that we are permitted for as that is the capacity.”

“The barbwire pens are seasonal pens. We plant corn in them in the growing season.”

Approval officer's conclusion:

The application is for a beef CFO with a maximum capacity of 6,000 finishers.

The applicant has a seasonal cow-calf operation. During the growing season, the cow-calf pairs are turned out to pasture. The seasonal feeding and bedding area is then used as cropland.

- 2. Manure application** – The respondent asked about manure spreading records for the last 5 years, results of soil test for nitrogen levels, and nitrate levels in slough and water wells.

Applicant's response:

The applicant stated the following:

“Our manure is spread on all our land locations given in the application and we do soil sampling yearly to check levels.”

Approval officer's conclusion:

AOPA sets out manure management standards for all agricultural operations in Alberta.

Under AOPA, CFOs and anyone who handles 500 tonnes or more per year of manure must keep records for a minimum of five years. Record keeping is required for manure production, manure transfer, and manure application. A person who applies a total of 500 tonnes or more of manure in a year must conduct soil tests at least once every three years on each field before applying manure or compost. If a person applies manure more than once every three years to a field, he or she must still stay within the specified limits in the regulations for soil nitrate-nitrogen and salinity.

Manure application is regulated under sections 24 and 25 of the Standards and Administration Regulation.

Under section 24(3)(d) of the regulation, one option for manure application is for a permit applicant to satisfy an approval officer that they have access to sufficient land base to apply their manure for the first year following the granting of the application.

For this proposal, 750 hectares of land in the dark brown soil zone are required for manure spreading. Ference Land & Cattle has secured 774 hectares of land for manure spreading. Therefore, the application meets the land base requirement in section 24(3)(d) of the regulation.

The Standards and Administration Regulation has other requirements to protect surface and groundwater from excessive application of manure (section 25). These include soil testing requirements, soil salinity limits, nitrate-nitrogen limits, setbacks based on the slope of the terrain to common bodies of water, and setbacks to water wells and residences. Under the regulation (section 28), the operator must also keep manure spreading and soil sampling records for five years and provide those records to the NRCB upon request.

When followed, all of these AOPA requirements will provide protection to neighbours from manure runoff, nutrient leaching, and nuisances from manure spreading.

To date, the NRCB has not had a reason to review records from the applicant. Now that the CFO is permitted, the operator is responsible to follow all these requirements.

Complaints about CFO-related issues can be reported to the NRCB's 24-hour toll-free reporting line (1-866-383-6722). An NRCB inspector will follow up on the concern. Neighbours can also call any NRCB office during regular business hours if they have questions about permit conditions or ongoing AOPA operational requirements.

- 3. Water runoff from cow-calf and CFO operations** – Mr. Clark indicated that Ference Land & Cattle claims that only the cow-calf operation runoff goes to the south.

Approval officer's conclusions

I conducted two site visits to verify the topography and the general slope of the land at the proposed CFO site. I found that the terrain at the site, where the south pens area is located has been re-sloped to drain towards the location where the south runoff control catch basin will be located. The north pens area has a general slope to the north towards the location where the north runoff control catch basin will be located.

The seasonal cow-calf operation on the east of the proposed CFO slopes to the south.

Incidences of non-compliance can be reported to the NRCB's 24 hour a day reporting line (1-866-383-6722). An NRCB inspector will follow up on the concern.

- 4. Location of the cow-calf and CFO operations** – The respondent questioned the location of the CFO and the cow-calf operation, and whether they operate multiple CFOs.

Applicant's response:

The applicant stated the following:

"We have multiple partnerships (including a JV with Echo Sands Ranching) where some of our mother cows and feeder cattle are kept. As well we get feeder/fat cattle fed in custom feedlots including Korova and Rim Rock. The home feedlot near Kirriemuir, the

location in question, does not hold, nor do we have all the cattle that we own located there.”...

Approval officer’s conclusions

The application at the E1/2 17-34-2 W4M is for 6,000 beef finishers CFO. The application did not include other locations or other animal numbers.

At this location the applicant also has a seasonal cow-calf operation. During the growing season, the cow-calf pairs are turned out to pasture. The seasonal feeding and bedding area is then used as crop land.

5. Water supply – Mr. Clark asked about the water consumption at the feedlot.

Applicant’s response:

The applicant stated the following:

“The water usage varies seasonally. We have multiple wells and this has all been tested and we track very closely as is in our best interest to ensure our cattle water supply is adequate.”

Approval officer’s conclusions

Alberta Environment and Protected Areas (EPA) is responsible for licensing the use of groundwater and surface water in the province. The water licensing process includes an opportunity for neighbours to provide input. Therefore, for efficiency and to avoid inconsistent regulation, NRCB approval officers generally do not consider water supply concerns when reviewing AOPA permit applications, other than ensuring that applicants sign one of the water licensing declarations listed in the Part 2 application form. (This declaration is on pages 5 and 6 of 52 of Technical Document RA24001.)

A copy of this decision will also be forwarded to EPA for its information.

6. Complaint from 2016 – Mr. Clark asked the outcome of a 2016 complaint regarding Double F Farms’ CFO.

Applicant’s response:

The applicant stated the following:

“Kevin Clark himself was the person that made the complaint in 2016 and is my understanding NRCB came out and found nothing whatsoever wrong, or what Kevin was alluding to”

Approval officer’s conclusions

The NRCB received an odour complaint on August 29, 2016 regarding Double F Farms. This complaint was originally sent to the Special Areas Board and then passed on to the NRCB.

An NRCB inspector attended the site and met with Mr. Craig Ference. The inspector noticed that the pens were being cleaned at the time. The inspector made the operator, and the development officer at Special Area No. 4, aware of manure management requirements under AOPA.

APPENDIX C: Exemption from water well setbacks

1. Water Well Considerations

The proposed pens 8 and 9 are to be located less than 100 m from a water well. I have confirmed on a site visit that one water well is located approximately 50 m from the proposed pens. 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 pens 8 and 9 are presumed to be low if the applicant's proposed pens 8 and 9 meet 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 MCA/MSF
- d. Whether the well is up- or down-gradient from the MCA/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 9.10.2.

The water well:

Based on information provided by the applicant and from the Alberta Environment and Protected Areas (EPA) water well database, the water well located approximately 50 m northwest of pens 8 and 9 is likely EPA water well ID # 177647. This well is reported to have been installed in 1989 and has a perforated or screened zone from 43.9 m to 46.3 m below ground level across stratigraphy. The well was installed with an above ground casing. I note that in my conversations with the applicant, the water well is only used presently to water the livestock. The well's log identifies protective layer or layers from ground surface to 20.1 m below ground level. The well has a cuttings seal from ground surface to 41.2 m below ground level. 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 down-gradient of the CFO and MCA.

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

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

In this case, the results of the water well exemption screening tool suggest that an exemption is likely as seen in page 12 of 52 of Technical Document RA24001.

Based on the above, I am prepared to grant an exemption to the 100 m water well setback requirement for pens 8 and 9.

APPENDIX D: Variances

Because the manure storage facility (MSF)/manure collection area (MCA) has already been constructed (unauthorized), an exemption under section 7(2) of the SAR is not available.

The south pens area is located less than 100 m from water wells. I have confirmed on a site visit that two water wells are located approximately 20 m and 40 m from the pen area. This is in conflict with the section 7(1)(b) of the Standards and Administration Regulation (SAR).

Approval officers must not grant variances lightly or in the absence of substantive evidence they will produce equivalent levels of protection (see Board Decision 03-04, *AAA Cattle Ltd.* p 24). I will consider whether a variance is warranted to the water wells.

Water Well Considerations

On March 14, 2024, the CFO operator requested a variance to the water well setback requirement on the grounds that they were properly constructed and are not at risk.

In this case, the facility has already been constructed (without a permit) but may cause a risk to the environment. I therefore 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.

In this case, I have used the same tools that I would normally use to determine if an exemption is warranted. I consider the water well exemption framework as useful for assessing the degree of protection for the water well in relation to a MSF/MCA. In this case, I presume that the risks of direct aquifer contamination from the MSF/MCA are low if the MSF/MCA meets (or otherwise meets) AOPA's technical requirements to control runoff and leakage. However, when determining whether an MSF/MCA that otherwise meets AOPA's technical requirements provides the same or greater protection and safety as provided for by the regulations, I also assess whether water wells themselves could act as conduits for aquifer contamination.

One indicator that a variance provides the same or greater protection and safety is if the aquifer into which the well is drilled is not likely to be contaminated by the MSF/MCA.

The potential risks of direct aquifer contamination from the MSF/MCA are presumed to be low if the MSF/MCA meets AOPA's technical requirements to control runoff and leakage.

In this case, I felt the following factors were relevant to determine the protection of the aquifer in relation to 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

The first water well (ID# 177647):

Based on information provided by the applicant and from the Alberta Environment and Protected Areas (EPA) water well database, the water well located approximately 20 m east of the south pens area is likely EPA water well ID # 177647. This well is reported to have been

installed in 1989 and has a perforated or screened zone from 43.9 m to 46.3 m below ground level across stratigraphy. The well was installed with an above ground casing. I note that in my conversations with the applicant, the water well is only used presently to water the livestock. The well's log identifies protective layer or layers from ground surface to 20.1 m below ground level. The well has a cuttings seal from ground surface to 41.2 m below ground level. 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 down-gradient of the CFO and MSF/MCA.

The second water well (ID #1501807):

Based on information provided by the applicant and from the Alberta Environment and Protected Areas (EPA) water well database, the water well located approximately 40 m south of the south pens area is likely EPA water well ID # 1501807. This well is reported to have been installed in 2009 and has a perforated or screened zone from 41.5 m to 46 m below ground level across stratigraphy. The well was installed with an above ground casing. I note that in my conversations with the applicant, the water well is only used presently to water the livestock. The well's log identifies a protective layer from ground surface to 19.5 m below ground level. The well has a bentonite seal from ground surface to 39.6 m below ground level. 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 of the CFO and MSF/MCA.

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 well². This tool is useful in gauging the level of protection of groundwater.

Because we use the water well exemption screening tool to determine if a water well is going to be impacted when a variance is considered. The water well exemption screening tool indicates that there is a low potential for groundwater to be impacted by the MSF/MCA.

In this case, the results of the water well exemption screening tool suggest that an exemption is likely as seen in page 12 of 52 of Technical Document RA24001.

Based on the above information it is my assessment that varying the 100 m setback rule for the south pens area would offer the same degree of protection and safety as that provided for by the regulations; and therefore, I am prepared to grant a variance to the 100 m water well setback requirement for the south pens area.

² A complete description of this tool is available under CFO/Groundwater and Surface Water Protection on the NRCB website at www.nrcb.ca.

APPENDIX E: Explanation of conditions in Approval RA24001

Approval RA24001 includes several conditions, discussed below:

a. Groundwater protection requirements

Ference Land & Cattle proposes to construct the new runoff control catch basins and the floor of the feedlot pens using a naturally occurring protective layer. Section 9 of AOPA's Standards and Administration Regulation specifies a maximum hydraulic conductivity for this type of protective layer in order to minimize leakage.

Ference Land & Cattle measured the hydraulic conductivity of the protective layer by installing a monitoring well (or water table well) at the time of borehole drilling. This approach provides an adequate representation of the protective layers proposed to be used to protect the groundwater resource.

The regulations provide that the actual hydraulic conductivity of a 2 metre thick naturally occurring protective layer must not be more than 1×10^{-6} cm/sec for solid manure storage facility or solid manure collection area.

For a catch basin, the regulations provide that the actual hydraulic conductivity of a 5 metre thick naturally occurring protective layer must not be more than 1×10^{-6} cm/sec.

In this case, the in-situ measurement was 2.9×10^{-8} cm/sec for the feedlot pens, and 4.2×10^{-8} cm/sec for the catch basins. These values are below the maximum value in the regulations. Therefore, the proposed naturally occurring protective layers meet the hydraulic conductivity requirement in the regulations and no additional condition is required.

b. Construction Deadline

Ference Land & Cattle proposes to complete construction of the catch basins and the two remaining livestock pens by May 2024. However, unforeseen circumstances may cause delays where additional time is needed. Therefore, a deadline of November 30, 2025, is included as a condition in Approval RA24001.

c. Post-construction inspection

The NRCB routinely inspects newly constructed facilities to assess whether the facilities were constructed in accordance with the permit requirements. To be effective, these inspections must occur before livestock or manure are placed in the newly constructed facilities. Approval RA24001 includes conditions stating that Ference Land & Cattle shall not place livestock or manure in the manure storage or collection portions of the livestock pens 8 and 9, and shall not place manure impacted runoff in the manure storage or collection portions of the new run off control catch basins until NRCB personnel have inspected the facilities and confirmed in writing that they meet the approval requirements.