

Decision Summary RA20034

This document summarizes my reasons for issuing Approval RA20034 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document RA20034. 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 June 23, 2020, Rosebud Feeders Ltd. and Agra Risk Solutions Inc. (Rosebud Feeders) submitted a Part 1 application to the NRCB to expand an existing beef CFO.

Between June 23 and October 22, 2020, several revisions to the application were submitted. I identified, to the applicant and their engineer, some matters that needed to be addressed prior to the application being deemed complete. I also consulted with colleagues within the NRCB, including the NRCB's Monitoring Review Team, in relation to the geotechnical report to determine if my interpretation of the information provided to me was reasonable, determine if any alternatives may exist, and identify any other information that would satisfy my concerns.

On November 3, 2020, I met with the applicant and advised them that the application likely did not meet AOPA requirements as it stood, in particular the groundwater protection requirements for a protective layer under pen areas two and three. The applicant asked me to continue processing the application, as it was. Under section 4 of the Administrative Procedures Regulation of AOPA and in accordance with section 3(3) of NRCB's Operational Policy 2016-4: Resolving Disputed Permit Information Requirements Between the Applicant and Approval Officer, I continued processing the application. Section 4 of the regulation allows an applicant six months to provide requested information.

The applicant retained an agent to assist with the remainder of the application process. On March 9, 2021 I provided the agent with the application materials, all the versions of the geotechnical reports, deficiency items and other information.

Between May 19, 2021 and February 22, 2022, several revisions to the application were submitted (one of which involved the removal of pen area two). On March 1, 2022, I deemed the application complete. After the application was deemed complete, one final amendment relating to an additional catch basin within the previously proposed CFO footprint was filed. Considering how the newly proposed catch basin would not affect the footprint of the CFO and will not increase the amount of disturbance or environmental risk I was of the opinion that redoing public notice was not warranted.

The final version of the application proposes:

- Increasing livestock numbers from 4,500 to 7,000 beef finishers

- Constructing three feedlot pen areas, 78 m x 95 m (area one), 68 m x 337 m (area three) and 68 m x 315 m (area four), utilizing a natural occurring protective layer
- Constructing three compacted soil lined catch basins (basin one: 55 m x 15 m x 2.5 m deep, basin two: 40 m x 62 m x 2.5 m and basin three: 40 m x 67 m x 4 m) to control runoff from the proposed pen areas and some of the existing pens that do not contribute runoff towards the river

The final version of the application also proposes to move existing feedlot pens away from the river. This plan is further discussed in part 6a and Appendix A, below.

a. Location

The CFO is located at SW 28-27-25 W4M and proposes to expand into NW 21-27-25 W4M in Rocky View County, roughly nine kilometres east of the Town of Irricana Alberta. The Rosebud River flows near the west and north sides of the CFO (approximately 150 m from the existing northern pens); an oxbow to the river is located to the east of the CFO (approximately 135 m from the existing eastern pens).

b. Existing permit

The existing CFO is permitted under NRCB Approval RA16071. That permit allows for the construction and operation of a 4,500 beef finisher feedlot CFO at SW 28-27-25 W4M. The CFO's existing permitted facilities are listed in the appendix to Approval RA20034.

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 miles. (The NRCB refers to this distance as the “affected party radius.”)

A copy of the application was sent to Rocky View County, which is the municipality where the CFO is located. Other municipalities were not notified as the CFO is located more than 100 m from the bank of any river, stream or canal. Additionally, no other municipalities have a boundary within the affected party radius.

The NRCB gave notice of the application by public advertisement in the Rocky View Weekly on November 10, 2020 (when the applicant asked me to continue processing the application, as it was) and again on March 1, 2022 (when it was deemed complete). The full application was made available for viewing on the NRCB website on both dates. As a courtesy, on November 10, 2020, fifty letters were sent to people identified by Rocky View County as owning or residing

on land within the affected party radius. On March 1, 2022 fifty-two letters were sent to people identified by Rocky View County as owning or residing on land within the affected party radius. One of the letters from March 2022 was returned as it could not be delivered.

It should be noted that the Part 1 application and the initial Part 2 application included facilities in SW 28-27-25 W4M, NW 21-27-25 W4M and SE 28-27-25 W4M. One of the application revisions to the Part 2 application removed the facilities (part of catch basin one and pen area 2) from SE 28-27-25 W4M. Since the Part 1 application included a larger CFO footprint I used that larger footprint to determine the affected party radius for the 2020 and 2022 public notices.

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.

On November 10, 2020 and on March 1, 2022, referral letters and a copy of the complete application were emailed to referral agencies and utility right of way holders, as they have a utility right of way on the land. The referral agencies included Alberta Health Services (AHS), Alberta Environment and Parks (AEP), and the Western Irrigation District (WID). The right of way holders included EQUUS, Rocky View Gas Co-op, and Ember Resources Inc.

None of the above responded to 2020 referral letters that were sent to them. When I provided concerned responses to referral agencies (see NRCB Operating Policy 2016-7; Approvals, part 7.5.4) AHS and AEP responded to the NRCB. Those responses are discussed in Appendix D, below.

AHS and the WID responded to the 2022 referral letters.

Ms. Carol Brittain, a public health inspector with AHS, discussed the application and the CFO with me. In that conversation I discussed with her the concerns that I had received. She indicated that non-specific health concerns could be difficult to assess, as such she was challenged to provide a meaningful response. I have not received further correspondence from her since our discussion.

Ms. Charlotte Mandel, an assessment/billing specialist with the WID, expressed concerns related to agricultural runoff and contamination of water and storm water management. She questioned where water from the operation was being sourced and if there was waste treatment on site. As noted in part 1, above, this application proposes three catch basins to contain runoff from the existing and proposed pens. One existing pen area poses a moderate potential risk to surface water, but conditions are included in the permit to address this risk. The applicant has signed a waiver in their application where there is intent to pursue a license under the *Water Act* independent of the application under AOPA. I interpret the “waste” to be reference to manure. As noted on page 16 of Technical Document RA20034 the CFO has access to adequate land base for manure spreading.

I have not received responses from AEP or the right of way holders in response to the 2022 correspondence that the NRCB sent to them. I did not follow up with AEP in 2022 as I had already discussed the file in depth with representatives of AEP previously, see Appendix D.

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.

As required by section 4(1) of the South Saskatchewan Regional Plan I considered that document's Strategic Plan and Implementation Plan and determined that the application is consistent with those plans. In addition, there are no notices or orders under the Regulatory Details portion of the SSRP that apply to this application.

5. Municipal Development Plan (MDP) consistency

I have determined that the proposed CFO expansion is consistent with the land use provisions of Rocky View County's MDP. (See Appendix B for a more detailed discussion of the county's planning requirements.)

6. AOPA requirements

a. Flood plain separation

The CFO's existing northern pens were constructed and permitted (from the deemed permit, now part of Approval RA16071) before AOPA and its flood plain separation requirement (section 8 of the Standards and Administration Regulation) came into effect. As such, these pens are grandfathered.

Despite being grandfathered and constructed before AOPA's requirements came into effect, these pens may still pose a risk to surface water. I assessed that risk using the NRCB's Environmental Risk Screening Tool (ERST), a description of that tool is in part 8 below. The feedlot's grandfathered northern pens, which drain towards the river, pose a moderate potential risk to surface water. The *response to surface water risk levels from ERST scoring flow chart* questions in the case of moderate potential risk scores if the risk factors dictate further actions being taken.

In application RA20034, there is a commitment to pull back the fences in the northern portion of the feedlot, I am accepting this as a commitment to address the potential risk these pens pose to surface water. The commitment to relocate the pens' fence and my flood plain considerations are further discussed in Appendix A. Conditions related to the pulling back of the fences are discussed in Appendix F and part 11 below.

b. Other AOPA requirements

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

- Meets the required AOPA setbacks from nearby residences, with one exception (AOPA setbacks are known as the "minimum distance separation" requirements, or MDS). The owner of that residence has signed a written waiver of the MDS requirement to their residence
- 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 liners/protective layers of manure storage facilities and manure collection areas

- Does not meet the 100 m setback requirement from water wells to MCAs and MSFs. Despite this, an exemption to this requirement is warranted, see part 9 and Appendix E

With the terms and conditions summarized in part 11, the application meets all relevant AOPA requirements.

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." Rocky View County is an affected party (and directly affected) because the CFO is located within its boundaries.

On December 8 and 15, 2020, and on March 29, 2022 Ms. Jessica Anderson, the policy supervisor (planning) with Rocky View County, provided written responses on behalf of the county. All three responses were relatively similar; she requested clarity on some of the proposed facilities and an undeveloped road allowance near the CFO. I forwarded these questions on to the applicant.

In 2020 Ms. Anderson stated that the application is generally consistent with the land use provisions in Rocky View County's municipal development plan. She went on to state that the application is also consistent with the Land Use Bylaw district.

In her 2022 correspondence, she indicated that the CFO is not affected by area structure plans, conceptual schemes or intermunicipal plans. She indicated that the CFO is on land zoned as agricultural, general district, and indicated that land within 3,200 m of the site is zoned as agricultural, general district or small parcel districts.

The application's consistency with the land use provisions of Rocky View County's municipal development plan is addressed in Appendix B, attached.

Apart from municipalities, any member of the public may request to be considered "directly affected." In 2020 the NRCB received responses from ten individuals. In 2022 the NRCB received responses from four parties consisting of ten individuals. Several of the persons and parties replied in both 2020 and 2022. These persons are listed in Appendix C; their concerns are summarized in Appendix D.

All of the people who submitted responses own or reside on land within the two mile notification radius for affected persons. Because of their location within this radius, and because they submitted a response, they qualify for directly affected party status. (See NRCB Operational Policy 2016-7: Approvals, part 6.2 and Appendix C.)

The directly affected parties raised concerns related to the CFO's proximity to a flood plain, impacts to surface water and groundwater, impacts from manure spreading and field work, effects on human health, effects on the community and quality of life, AOPA processes, dead animals, cumulative effects, impacts to roads, concerns with the application's contents, and suggested alternatives to what was proposed. These concerns are addressed in Appendix D.

Conditions have been attached to the approval to address concerns related to flood plain separation (see part 11, below).

The NRCB considers a person who owns a residence within the MDS of the CFO, and who waives the MDS requirements in writing to be automatically directly affected (See NRCB Operational Policy 2016-7: Approvals, part 6.2). R&M Schwengler provided an MDS waiver and are therefore a directly affected party.

8. Environmental risk of CFO facilities

When reviewing a new approval 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, 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.) Although the risk screening tool gives a "score", it is only a screening tool, and that additional information is often considered and used for a more comprehensive risk assessment at the site. 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 Rosebud Feeders' existing CFO facilities were assessed in 2017. The assessment indicated that the potential risks posed to surface water and groundwater were low.

Since the previous risk assessment was completed, evidence and concerns related to the CFO and its potential risk to the river have been brought to my attention. For these reasons, and with additional information, I reassessed the risks posed by the CFO's existing facilities. My reassessment found that the feedlot's existing pens draining towards the river pose a low potential risk to groundwater and a moderate potential risk to surface water. The feedlot's existing pens that drain away from the river pose a low potential risk to groundwater and surface water. The location of these pens is indicated in Technical Document RA20034 on pages 8 and 12.

Conditions will be included in the permit to address the moderate potential risk posed by the CFO's existing pens that drain towards the river.

I also risk screened the proposed pen areas and catch basins and determined that they all pose a low potential risk to surface water and groundwater.

9. Exemption

I determined that proposed pen areas three and four (treated as one for risk assessment purposes) are located within the required AOPA setback from a water well. As explained in Appendix E, an exemption to the 100 metre water well setback is warranted. Despite an exemption being warranted, the existing permit has an existing water well monitoring condition to monitor this situation. The applicant has not applied to modify this condition, and in accordance with NRCB policy the existing condition will be carried forward into the new permit.

10. Other factors

Because the approval application is consistent with the MDP 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.

Under section 22(c) of Rocky View County's Land Use Bylaw (LUB) # C-4841-97, last updated September 8, 2020 under bylaw 8186-2021, CFOs are exempt of all requirements in the LUB. Further, the response from the county for this application did not raise any MDP or LUB related concerns.

I have forwarded a copy of the application, and responses to the application which raised concerns, to AEP. AEP has not raised concerns to me related to the administration of natural resources. AEP has not made me aware of statements of concern submitted under section 73 of the Environmental Protection and Enhancement Act / section 109 of the Water Act in respect of the subject of this application.

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 May 12, 2022).

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

Consistent with NRCB policy (Approvals Policy 8.7.3), 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 parties' concerns have been addressed, see Part 6a and Appendices A and D for further discussion.

Consistent with NRCB policy (Approvals Policy, section 8.7.3), if the application is consistent with the MDP then the proposed development is presumed to have an acceptable effect on the economy and community. In my view, this presumption is not rebutted because the application meets AOPA requirements and for the reasons in Appendices B and D.

I also presumed that the proposed CFO modifications is an appropriate use of land because the application is consistent with the land use provisions of the municipal development plan (see NRCB Operational Policy 2016-7: Approvals, part 8.7.3). In my view, this presumption is not rebutted.

11. Terms and conditions

Approval RA20034 specifies the cumulative permitted livestock capacity as 7,000 beef finishers and permits the construction of catch basins one, two and three, and pen areas one, three and four.

Approval RA20034 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 RA20034 includes conditions that generally address flood plain separation, facility decommissioning, construction deadlines, monitoring, document submission and construction inspection. For an explanation of the reasons for these conditions, see Appendix F.

For clarity, and pursuant to NRCB policy, I consolidated the NRCB issued Approval RA16071 into the new permit. Permit consolidation helps the permit holder, municipality, neighbours and other parties keep track of a CFO's requirements, by providing a single document that lists all the operating and construction requirements. Consolidating permits generally involves carrying forward all relevant terms and conditions in the existing permits into the new permit, with any necessary changes or deletions of those terms and conditions. This consolidation is carried out under section 23 of AOPA, which enables approval officers to amend AOPA permits on their own motion. Appendix F discusses which conditions from the historical permits are or are not carried forward into the new approval.

12. Conclusion

Approval RA20034 is issued for the reasons provided above, in the attached appendices, and in Technical Document RA20034.

The NRCB-issued Approval RA16071 is therefore superseded, and its content consolidated into this Approval RA20034, unless Approval RA20034 is held invalid following a review and decision by the NRCB's board members or by a court, in which case Approval RA16071 will remain in effect.

June 3, 2022

(original signed)
Jeff Froese
Approval Officer

Appendices:

- A. Flood plain separation
- B. Consistency with the municipal development plan
- C. Determining directly affected party status
- D. Concerns raised by directly affected parties
- E. Exemptions from water well setback
- F. Explanation of conditions in Approval RA20034

APPENDIX A: Flood plain separation

As discussed in part 6a and 8 above, the feedlot's existing northern pens that drain towards the river pose a moderate potential risk to surface water. The application includes a commitment to address this risk by moving the pens away from the river and its flood plain.

a. Requirements under the Standards and Administration Regulation (SAR)

Section 8(1) of the SAR requires that the 1:25 year maximum flood level at a manure collection area (MCA) or manure storage facility (MSF) be not less than one metre below any part of the facility where run-on can come into contact with the stored manure.

I note that the CFO is located approximately 150 m from the Rosebud River and that responses to this application from directly affected parties (discussed below and in Appendix) expressed concerns that Rosebud Feeders' CFO is located too close to a "known" flood plain.

To better assess the expressed concerns and the CFO's location relative to the river's flood plain, I first consulted the AEP flood website at <https://floods.alberta.ca/>. That website does not indicate that the CFO is located near a known flood plain. However, a representative of AEP indicated that the province has not completed a flood hazard study for the area of the CFO. The representative recommended that a detailed flood assessment be undertaken (AEP's response was forwarded to the applicant for consideration).

Because the 1:25 year flood plain has not been determined for the Rosebud River near this site, and because concerns related to flooding had been expressed, I reviewed section 8(2) of the SAR. That section states that if the 1:25 year flood plain can't be determined, the MCAs and MSFs must be one metre above where run on from the highest known flood level can contact manure.

I am of the opinion that meeting the requirement of either of these portions of section 8 of the SAR is a method of addressing the environmental risk and the expressed concerns, see Appendix, below.

b. Information related to the flood plain

Using section 8(2), I considered what would be the highest known flood level in various ways. One of the respondents submitted photographs they reported to be from a 1997 flood. Further, responses claimed that ice jams may cause the river to back up into the CFO.

I consulted with staff of Rocky View County who provided me with hydrotechnical historical information (that I provided to the applicant, see Technical Document RA20034) related to the bridges up-gradient and down-gradient of the CFO that cross the Rosebud River. I note that Report BF02409, for the bridge downgradient of the CFO, states that in 1952 the bridge structure was shifted by river ice. I also note how when I was at this bridge in December 2020 the bridge held a cast steel stamp dated 1954. The report from the county also specifies that in 1960 high water from the river reached the bottom chord (lowest portion) of the bridge and that in 1969, the river spilled over the north bank of the river at this bridge. The 1969 event appears to be the most recent note in this report where the channelized portion of the Rosebud River has flooded into surrounding land near the bridge. Accordingly, I am using this information as a proxy for the highest known flood plain for the CFO and what flood conditions may be at the CFO as a result of ice damming. I also note that the bridge down gradient of the CFO will be

subject to more runoff than the one upgradient (due to its larger catchment area). I am conservatively doing so based on the limited amount of presently available information.

In December 2020, the NRCB measured the lowest point on the bridge deck to be 4.75 m above frozen pooled water below the down gradient bridge chord (referred to as point K in Technical Document RA20034, page 43; height measurements collected by the NRCB start at page 38). Based on this height measurement and the information in the county-provided BF02409 report I am considering a water rise of 4.75 m above the frozen pooled water to be the highest known flood for the area immediately north of the CFO. An additional 1.0 m would need to be added above this highest known flood plain, so the minimum relative level of the CFO facilities would need to be 5.75 m above the frozen pooled water level.

To better understand the CFO's elevation above the river, the NRCB measured assumed relative elevations or levels of the CFO at the east, northern, and western portions of the existing facilities in relation to the river and its oxbows. The western portions of the CFO (existing and proposed) are located greater than four meters above the bridge bottom flood levels. The eastern portions of the CFO (existing and proposed) are located greater than one meter above the bridge bottom flood level, as measured at the east oxbow.

Despite the east and west portions of the CFO being above the one metre above the high water level, the northern existing portion of the feedlot is not as high above the river. In this area, the incised or channelized portion of the river is only 3.1 m deep (measured from frozen water to the immediate south bank, referred to as point G in Technical Document RA20034, page 40). If the river were to spill over the channelized portion, due to an ice jam or other flood causing events, it would only have to rise an additional 0.6 m before the lowest point of the northern pens (point B, Technical Document RA20034, page 40) would be in contact with flood water. As stated on page 44 of Technical Document RA20034 "... if the Rosebud River water level reached the bottom of the bridge at Point K, Point B would be under 1.08 m (-1.67 m +0.59 m) of water. Adding 1.08m of water to the site level at Point B (902.99 m, derived from the applicant supplied topographic survey and the NRCB measurements, see Technical Document RA20034, page 42) results in a bridge bottom flood level at Point B of 904.07 m (assumed relative site elevation)."

In other words, the assumed relative elevation of the highest known flood at the feedlot's location would be 904.07 m. One metre above this highest known flood level would be an elevation of 905.07 m.

The application includes a topographic survey that was completed July 2019 with one metre contour intervals (see page 67 of Technical Document RA20034). The topographic survey was completed in the summer, and not the winter, which makes comparing water levels in the river from the survey and NRCB measurements problematic (river discharge is typically greater in the summer than in the winter). Regardless, it does provide elevation contour intervals for a larger area opposed to the relative levels measured by the NRCB in December 2020 at select locations.

The topographic survey indicates two contour intervals on either side of the river north of the CFO with elevations of 899 m. Due to this, the lowest point of the channelized river is at an elevation somewhere between 898 and 899 m. Based on this the channelized portion of the river is approximately 3 - 4 m deep (902 m – (899 m – 898 m)). From the channelized portion of the river to the northern pens there is a relative elevation gain of approximately one metre

(902 m – 903 m). This generally agrees with the measurements completed by the NRCB in December 2020.

c. Pen fence realignment

In application RA20034, there is a commitment to pull back the fences in the northern portion of the feedlot to an elevation of 903.5 m. According to the applicant, this commitment is based on "...the highest know flood level was calculated base[d] on the bridge reports (BF2409 and BF9396). Flooding was recorded at 3.5 m above bank level. Therefore, the regulations require the CFO to be 4.5m above the creek bank..." (see Technical Document RA20034, page 77, item C).

I am interpreting the above to be a commitment to meet the one metre highest known flood plain separation requirement of section 8(2) of the SAR and to close the pens below this elevation. However, I note that the commitment references different information than what I have discussed above, specifically, the "flooding was recorded at 3.5 m above bank level" correlates with the bank height at BF09396 the bridge upgradient of the CFO (Technical Document RA20034, page 63). I have used the more conservative 4.75 m based on the bridge downgradient of the CFO.

- Based on the topographic survey, the lowest point in the northern pens has an elevation of 903.0 m (see Technical Document RA20034, page 40; point B, and page 42)
- Based on the topographic survey and the NRCB measurements, the southern shoulder of the channelized river bank has an elevation of 902.4 m (see Technical Document RA20034, pages 40, 42 and 46; Point B height – Point G height = 0.59 m)
- Based on the same documents, the ice in the river* has an elevation of 899.3 m (see Technical Document RA20034, page 48 (902.4 m – 3.08 m))
* I am using the river ice height above as there is no stated water elevation in the topographic survey.

When the 4.75 m water height from the downgradient bridge, and the one metre requirement from the SAR, are applied to the above assumed ice elevation of 899.3 m, the fence from the northern pens would need to be moved to up to an elevation of 905.1 m.

In accordance with the applicant's commitment, the survey completed by Element Surveys (see Technical Document RA20034, page 67) and the above conservatively based elevation calculations, I am including conditions in the permit that requires the co-permit holders to:

1. Relocate the existing north pens' fences so that no part of the northern pens are located at an elevation lower than 905.1 m.
2. Provide the NRCB with proof, prepared by a qualified third party, that no part of the pens are located at an elevation lower than 905.1 m.
3. Decommission the portions of the northern pens at an elevation less than 905.1 m in accordance with the requirements stated in Agdex 096-90: Closure of Manure Storage Facilities and Manure Collection Areas; Solid Manure Storage Facility Type.

d. Additional considerations

With the fence relocation up the hill and the decommissioning of a portion of the feedlot pens, I have confirmed that the remaining pen area will have adequate space for the proposed 7,000 beef finishers.

Agdex 096-81: Calculator for Determining Livestock Capacity of Operations as They Existed on January 1, 2002 specifies a space requirement of 200 square feet or 18.58 m² per beef finisher.

The currently existing and proposed feedlot pens have a cumulative area of 139,800 m²:

- pens draining away from the river: ~36,000 m²,
- pens draining towards the river: ~47,000 m²,
- area 1: 8,300 m²,
- area 3: 26,000 m² and
- area 4: 22,500 m²

With the relocation of the fence to an elevation of 905.1 m an area of approximately 4,100 m² will be forfeited; 135,700 m² of pen space remains.

APPENDIX B: Consistency with the municipal development plan

Under section 20 of AOPA, an approval officer may only approve an application for an approval or amendment of 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).

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 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.”) “Land use provisions” also do not impose procedural requirements on the NRCB. (See NRCB Operational Policy 2016-7: Approvals, part 8.2.5.)

Rosebud Feeders’ CFO is located in Rocky View County and is therefore subject to that county’s MDP (which the county refers to as the County Plan). Rocky View County adopted the latest revision to this plan on April 10, 2018, under Bylaw 018-0409. The relevant parts of the county’s MDP to this application are discussed below. I note how Rocky View County is in the process of developing a new MDP at this time but that document has not yet been adopted.

Section 8.20 of the MDP states that the county “should make site recommendations on all new or expanded” CFOs and lists several criteria for the county to consider when making these recommendations. The criteria are not directly relevant to my MDP consistency determination as they appear to be intended to govern the county’s responses to individual CFO applications to the NRCB. In addition, the criteria require site and CFO-specific considerations that are involved in permitting decisions, so the criteria are not “land use provisions.” Therefore, this section is not relevant to my MDP consistency determination.

Section 8.21 “recommend[s]” that CFO applicants “provide nearby land owners with technical design information, receive feedback through a public involvement process, and report back to the County on how the proposal addresses public input.” This provision is not considered a land use provision because of its project-specific and procedural focus. Therefore, it is also not relevant to my MDP consistency determination. However, I observe that neighbouring land owners were notified of the application as specified under AOPA. The neighbours have had the opportunity to review and comment on the application. The comments from directly affected respondents to this application’s public notification are summarized in Appendix D.

Section 8.22 states that CFOs should be located in areas where there will be “minimal conflict with non-complementary land uses.” Because the “minimal conflict” and “non-complementary” test calls for a discretionary judgement, the criteria is not a “land use provision” and the section is not relevant to my MDP consistency determination. Nevertheless, as noted in the county’s response, lands within 3,200 m of the CFO are generally zoned for agricultural purposes. Additionally, AOPA requires CFO applications to meet the MDS requirements to neighbouring residences. The MDS is a means of mitigating a CFO’s nuisance impacts. The MDS requirement for this proposed development is met with the provision of a waiver from the closest residence owner. It is therefore my opinion that even if this section applied to my consistency determination, the CFO would meet its requirements.

Section 8.23 states that land uses incompatible with a CFO shall not be supported when proposed within the MDS of the CFO. I interpret this section to apply to incompatible uses encroaching on a CFO, not the CFO encroaching on adjacent land uses. As an approval officer at the NRCB I am unable to consider this section as it applies to non-CFO uses which are outside of my mandate under AOPA and are inapplicable to this application. Regardless, the CFO meets the MDS requirement in AOPA.

Section 8.24 states that a CFO, including its MDS, “should not be located within the boundary of any intermunicipal development plan or notification zone, statutory planning area, hamlet, residential area, institutional use, or federal, provincial, or municipal park or recreation area.”

For these reasons, I conclude that the application is consistent with the land use provisions of Rocky View County’s MDP. The county’s responses do not conflict with my conclusion.

In its response, the county stated that this CFO is not affected by any area structure plans, conceptual schemes, or intermunicipal plans. The proposed CFO expansion therefore meets these requirements.

APPENDIX C: Determining directly affected party status

In accordance with the Approvals Policy (Operational Policy 2016:7, part 6.2) the following individuals qualify for directly affected party status because they own a residence within the minimum distance separation (MDS) and waived the MDS requirement in writing:

Schwengler, R&M
NW 20-27-25 W4M

The following individuals qualify for directly affected party status because they submitted a timely response to the application and they own or reside on land within the “affected party radius,” as specified in section 5(c) of the Agricultural Operation, Part 2 Matters Regulation (see NRCB Operational Policy 2016:7 – Approvals, part 6.2):

Gagnon, P&S
SW 26-27-27 W4M

Harwood, G (Sr), G (Jr) and J (referred to as the Harwoods below)
SE 8-27-25 W4M

Hudson, J
Edmonton, AB

Kent, D
NW 23-27-25 W4M

Rau, S
SW and SE 4-28-24 W4M

Rau, V&J
NE and SE 27-27-25 W4M

Steiger, J
NW 20-27-25 W4M

I note that the locations of land ownership or residences stated in the Harwood, J Hudson, and S Rau responses to the application are not within the “affected party radius”. Despite this, Rocky View County identified a G E Harwood, J Hudson and S Rau as owners of land within the “affected party radius” (the stated addresses in the responses to the application correlate with the list of addresses and names provided by the county as parties within the affected party radius). For this reason, I am considering the Harwoods, J Hudson and S Rau as directly affected parties.

APPENDIX D: Concerns raised by directly affected parties

The tables set out below summarize the concerns or claimed effects expressed in response to this application along with identifying the parties who expressed them. My discussion of and conclusions on those concerns follow each set of concerns.

Claimed effect(s) or concern(s)	Respondent(s)
<p>1. Impacts to the Rosebud River and surface water</p> <p>a. The CFO is too close to the Rosebud River</p> <p>b. Is the CFO able to mitigate all runoff (interpreted to be from existing and proposed facilities), the worst case scenario (snow melt and spring rain) should be considered, a claim was expressed that runoff needs to be pumped off and trucked away seasonally</p> <p>c. Concerns that the CFO is too close to a “known” flood plain and flooding from the river due to ice jams will reach the CFO (includes photos)</p>	<p>P&S Gagnon, Harwoods, J Hudson, D Kent, S Rau, V&J Rau</p>

Approval Officer’s conclusions

1a. Under Section 7(1)(c) of the Standards and Administration Regulation (SAR), a manure storage facility (MSF) or manure collection area (MCA) must not be constructed within 30 m of a common body of water (the Rosebud River is a common body of water as defined in the Standards and Administration Regulation or SAR).

I note that there are sloughs in the field to the south and west of the CFO. This land completely surrounding the sloughs to the south and west is controlled by either Rosebud Feeders or Agra Risk Solutions. For this reason, I do not consider them to be common bodies of water and will not discuss them further here.

To be conservative, I am considering the oxbows to the north and east of the CFO and the draw located to the north of it to be common bodies of water.

I note how the feedlot’s existing northern pens were constructed before AOPA came into effect in 2002. These pens are located approximately 30 m from the draw located north of the CFO. Since these pens were constructed before AOPA came into effect, they are exempt from the 30 m setback requirement. All of the proposed facilities in this application are located in excess of the 30 m setback to the river, oxbows and draw noted above. Despite being located more than 30 m from the river, the feedlot’s northern pens pose a risk to the river. That risk is discussed in part 8 and Appendix A and is addressed with the condition(s) in part 11 and Appendix F.

1b. Section 6 of the SAR relates to surface water control systems at CFOs. In brief, this section authorizes an approval officer to require an owner or operator of a CFO to either have a natural, constructed, or combination thereof, system to control run on and runoff. That system’s construction and design must not significantly alter surface water, not affect a non-flowing water body, not be located in a fish bearing water body, and if required by the NRCB must be endorsed by a professional engineer.

The application includes three catch basins. In brief, section 19 of the SAR states that a CFO must construct a “catch basin” that is designed to intercept and store runoff if required by an approval officer. That catch basin must be able to store a one day rainfall event that has a 1:30 year probability of occurring. A catch basin’s storage volume is to be judged on its 0.5 m freeboard depth not at its top of bank level. I note how previous versions of the regulation considered snow load (for runoff purposes) while the current version does not. For this reason, I am only considering concerns related to runoff from rainfall and not from snow load.

The above sections of the regulation, along with what exists and is proposed at the CFO are discussed below.

Existing facilities

Runoff from the CFO’s existing pens are directed either to the north towards the river or to the south away from the river, to the new proposed catch basin three that meets AOPA requirements. As noted in Part 8 above, I completed a new environmental risk screening using the NRCB’s Environmental Risk Screening Tool (ERST) for the feedlot’s existing pens, as concerns were expressed in relation to the pen’s proximity to a “known” flood plain. For the risk screening I broke the pens into those drain towards the river and those that don’t (see Technical Document RA20034, page 11). The pens draining away from the river pose a low potential risk to surface water and the ones draining towards the river pose a moderate potential risk to surface water. That risk is largely due to the pens’ proximity to the river, and their possible proximity to a flood plain, and the draw that is located between the two. Conditions have been added to the permit that will reduce the potential risk they pose to the river (see Part 6a of this decision summary and Appendices A and F).

Proposed facilities

As noted in Technical Document RA20034 two adequately sized catch basins (for a 1:30 year precipitation runoff event) are proposed to control runoff from the proposed pen areas. Because of this, I am of the opinion that this concern is addressed.

1c. As discussed in part 6a and Appendix A of this decision summary, in my view, the existing east and west sides of the existing feedlot, along with the proposed catch basins and pen areas meet the flood plain requirements of AOPA. However, based on available information the northern pens draining towards the river do not. Accordingly, I have added conditions to the permit to address this. Those conditions are discussed in Appendix F.

Claimed effect(s) or concern(s)	Respondent(s)
2. Impacts to water wells a. groundwater contamination and supply, b. a possible semiconfined aquifer in the area and the risk posed to it by the CFO expansion	P&S Gagnon, J Hudson, S Rau, V&J Rau, J Steiger, Harwoods

Approval Officer’s conclusions

2a. The NRCB’s Approvals Policy (Operating Policy 2016-7, part 8.10) states that approval officers will not consider water supply concerns (I interpret this to include water source concerns) when reviewing an AOPA application other than ensuring that the applicant signs a *Water Act* declaration in their Part 2 application. In this case, the applicant signed a declaration where they want their AOPA application processed separately from the requirements of licensing under the *Water Act*.

That same part of the Approvals Policy states that water supply related concerns will be forwarded to Alberta Environment and Parks (AEP). I forwarded AEP copies of the concerned responses to this application.

Mr. Jianrong Wang, a water approvals hydrogeologist with AEP, asked me to request information from three parties who responded to the application. He requested information that would assist him in responding to expressed concerns. Only two of those concerned parties responded to me. I forwarded those responses on to Mr. Wang as requested.

For a concerned party located approximately 1,260 m to the east of the CFO, Mr. Wang indicated that the CFO was unlikely to impact the concerned party's water wells (note: in Technical Document RA20034 I have determined that this residence is located approximately 1,970 m away from the eastern proposed boundary of the CFO). Mr. Wang based his assessment on information from that concerned party's provided information where the wells were relatively deep and there are thick clay and shale layers above these water well screens.

For another concerned party located east of the CFO, Mr. Wang indicated that in the absence of a water well log from the concerned party, he couldn't comment. Rather, he noted how that concerned party's water well was reported to be located in a pit and that this would make the water well more susceptible to surface runoff and contaminants.

As noted in Technical Document RA20034 the applicant has proposed to utilize naturally occurring protective layer(s) and compacted soil liners to protect groundwater from contamination by manure. The proposed protective layers for the pens and the protective liner for the catch basins meet AOPA requirements. Pen area three does not meet the 100 m water well setback requirement, but an exemption is warranted (see Appendix E, below).

2b. In my technical review of the application, I reviewed the water wells at the CFO and noted that there is potential for groundwater from a depth as shallow as 2.7 m to be utilized as a water resource. This is the depth I used for my environmental risk screening, unless more specific information from borehole logs were available for that area. The results of my risk screening indicate that the proposed pens and catch basins all pose a low potential risk to groundwater.

Claimed effect(s) or concern(s)	Respondent(s)
3. Manure disposal and field work a. impacts to water quality, land contamination i.e., fertilizer, and pesticide use b. is adequate land base available, c. impacts to neighbours	P&S Gagnon, J Hudson, S Rau, V&J Rau

Approval Officer's conclusions

3a. Sections 24, 25, and 27 of the SAR lay out the requirements for the land application of manure as a means of preventing land contamination from manure. In very general terms, a person cannot land apply manure so that it causes a risk to the environment, including surface water and groundwater. The regulation establishes required setbacks for manure spreading near water bodies, water wells, springs, and residences. These setbacks are often dependent on field conditions and must be assessed on a field-by-field basis. The regulation also includes nutrient loading limits to ensure that the soil is not overloaded with nutrients. Provided that the requirements of these sections are met, the risk to water quality is presumed to be acceptable.

If a person has concerns regarding manure collection or storage facilities, spreading or other CFO-related issues, those concerns can be reported to the NRCB's 24-hour reporting line (1-866-383-6722). The call will be followed up on by an NRCB inspector. Parties can also call any NRCB office during regular business hours if they have questions about permit conditions or ongoing AOPA operational requirements.

The AOPA focuses on land application of manure, composting materials, and compost. Herbicide and pesticide use is distant from AOPA's focus and not governed by AOPA. Under the NRCB's Approvals Policy (Operational Policy 2016-7, part 8.12.1) approval officers do not generally determine whether a proposed development complies with legislation or regulations other than AOPA and its regulations.

3b. Section 24(3) of the SAR provides four options for nutrient and manure management. This application opted for the fourth option, where a permit applicant seeks 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 application 546 hectares of land in the black soil zone is required for manure spreading. The applicant has provided information in their application indicating that they have access to 925 hectares of land (in the black soil group) for manure spreading. I reviewed the air photos of the proposed manure spreading lands to ensure the accuracy of the land with regards to setbacks and areas otherwise not suitable for manure spreading. As identified in Technical Document RA20034 the application meets the land base requirement in section 24 of the regulation by over 100 hectares.

3c. Section 24 of the SAR has requirements to address nuisances from manure spreading. In general, manure, including compost, must be incorporated within 48 hours of application. Despite this, manure does not need to be incorporated on forage or directly seeded crops, and if it is spread (without incorporation) no closer than 150 metres from a residence or other structure occupied by people.

If a person has concerns regarding manure collection or storage facilities, spreading or other CFO-related issues, those concerns can be reported to the NRCB's 24 hour reporting line (1-866-383-6722). The call will be followed up on by an NRCB inspector. Persons can also call any NRCB office during regular business hours if they have questions about permit conditions or ongoing AOPA operational requirements.

Claimed effect(s) or concern(s)	Respondent(s)
4. Effects on human health due to various CFO related nuisances	P&S Gagnon, J Hudson, Harwoods, S Rau, V&J Rau

Approval Officer's conclusions

AOPA and its regulations do not specify allowable effects on human health. For this reason, I forwarded these concerns and claimed effects on to Ms. Carol Brittain, a public health officer/executive officer with AHS. This was done in accordance with the NRCB's Approvals Policy (Operational Policy 2016-7, part 8.8). I note how the policy goes on to state that approval officers do not consider the health and odour effects of CFO air emissions on their own initiative when reviewing approval applications.

The effects of a CFO on human health are relevant to my consideration of “effects on the community.” As explained in part 9 of the decision summary, above, following NRCB policy, I begin with the presumption that the effects of the proposed CFO on the community are acceptable because the application meets the land use provisions of the municipal development plan, and the municipality does not specifically preclude CFOs from this area under its land use bylaw.

This proposed CFO expansion meets the minimum distance separation (MDS) requirement of AOPA (with one waiver) which is a means of mitigating the nuisances from a CFO.

MDS is measured from the outside residence wall to the closest manure storage facility or manure collection (includes existing and proposed facilities) at a CFO. Schedule 1 to the SAR establishes how MDS is calculated, section 4 of that schedule establishes objectives for MDS based on the land use zoning where a residence is located.

Rocky View County’s response to this application stated that lands within 3,200 m of where the CFO is situated is generally zoned Agricultural General district. Despite this, there are two parcels zoned as Agricultural Small Parcel located to the east and south. Section 310 of the county’s land use bylaw states that the purpose of this land use district is to allow for traditional and emerging trends in agriculture to be developed on smaller parcels. Based on this, I considered this land use zoning to be in line with category 1 for MDS purposes.

The MDS setback for residences on category 1 land zonings (agricultural purposes) for this application is 774 m. The MDS requirement is met for all residences surrounding the CFO aside from the Schwengler residence. The owners of that residence provided the applicant with a MDS waiver for this application.

The closest concerned party to express nuisance concerns owns a residence at NE 27-27-25 W4M. That residence is located approximately 1,910 m east of the eastern extent of the proposed CFO expansion, over double the MDS setback requirement.

In the NRCB’s Approvals Policy (Operational Policy 2016-7, part 8.8.1) approval officers will presume that if a proposal for a new or expanded manure storage facility or manure collection area meets AOPA’s MDS requirements, the nuisance effect on nearby residences is acceptable.

I realize that some of the neighbours to the CFO may experience some CFO caused and related nuisance impacts from time to time. Many issues that arise relating to the operation of a CFO, and other disagreements, can be resolved through good communication between neighbours and the CFO operator.

Claimed effect(s) or concern(s)	Respondent(s)
5. Community effects a. owner not residing in neighbourhood, b. financial impacts to local rate (tax) payers and impacts to property values	P&S Gagnon, Harwoods, J Hudson

Approval Officer’s conclusions

5a. The concerned parties did not provide details to establish how the owner of this CFO not living in the community would impact them or the community. At any rate, AOPA does not require a CFO owner to live at or in the neighbourhood of the CFO.

5b. In several review decisions, the NRCB’s Board members have consistently stated that concerns regarding effects on land or property values (which property tax rates are typically based on) are “not a subject for [the Board’s] review under AOPA” or for approval officers’ consideration of permit applications. According to the board, impacts on property values are a land use issue which is a “planning matter dealt with by municipalities in municipal development plans and land use bylaws.” (See, Pigs R Us Inc., RFR 2017-11/BA17002 page 6.)

Claimed effect(s) or concern(s)	Respondent(s)
6. AOPA process concerns a. who monitors conditions of the application, b. there should be a public meeting, c. neighbours not notified by the NRCB, inadequate public notice	Harwoods, V&J Rau

Approval Officer’s conclusions

6a. If a permit is issued pursuant to an application, it will typically include conditions related to what has been applied for. Approval officers and inspectors at the NRCB follow up with the permit holder on those conditions.

If a person has concerns regarding a CFO, those concerns can be reported to the NRCB’s 24 hour reporting line (1-866-383-6722). The call will be followed up on by an NRCB inspector. Parties can also call any NRCB office during regular business hours if they have questions about permit conditions or ongoing AOPA operational requirements.

6b. Section 20(1)(b)(iv) of AOPA allows approval officers an option to hold “meetings and other proceedings” with respect to an approval application (and only if the application is consistent with the land use provisions of the MDP and meets the technical requirements in the regulations). Approval officers, who do not speak publicly about the merits of an application, do not routinely convene public meetings unless requested by the applicant. However, approval officers regularly have conversations and provide information to parties, including municipalities, CFO operators, and neighbours to provide information on the AOPA permit application process. These conversations continue even after a permit has been issued.

6c. The official notice of the application was in the November 10, 2020 and March 1, 2022 editions of the Rocky View Weekly. Further, courtesy letters were sent to persons identified by the county as owners or residents of land within the two mile affected party radius. Further

details on the public notice required in the AOPA for this application and how it was handled on this file are included in part three of this decision summary. The notice provided for this application meets the requirements under AOPA.

Claimed effect(s) or concern(s)	Respondent(s)
7. Impacts from deceased livestock; odour, disease spreading insects, scavengers, dead animal disposal methods used	P&S Gagnon, V&J Rau

Approval Officer's conclusions

The disposal of deceased livestock in Alberta is not within the regulatory mandate of the NRCB. Rather, it is regulated by Alberta Agriculture, Forestry and Rural Economic Development (AFRED) under the *Animal Health Act*. Given AFRED's regulatory role, concurrent oversight of dead animal disposal and associated concerns by the NRCB would be inefficient and might lead to inconsistency with AFRED requirements.

In accordance with the NRCB's Approvals Policy (Operational Policy 2016-7, part 8.11), I forwarded concerns related to dead animal disposal to representatives of AFRED's inspection and investigation section for their information.

Claimed effect(s) or concern(s)	Respondent(s)
8. Effects to quality of life	P&S Gagnon, V&J Rau

Approval Officer's conclusions

AOPA sets out the minimum distance separation requirement that CFOs are required to meet. The minimum distance separation requirement helps minimize the nuisance impacts that maybe experienced by a CFO's neighbours. As noted previously, the CFO and its proposed expansion meets this requirement with a waiver. Despite the MDS being met, it is possible that neighbouring residences may experience nuisances from the CFO from time to time.

Often, any issues that arise relating to nuisances from the operation of a CFO can be resolved through good communication between neighbours and the CFO operator. However, if a member of the public has concerns regarding a CFO, including whether the operation is complying with AOPA, they may contact the NRCB through its toll free reporting line (1-866-383-6722). An NRCB inspector will follow up on the concern.

Claimed effect(s) or concern(s)	Respondent(s)
9. Cumulative effects of having several other cattle operations in the area	P&S Gagnon, V&J Rau

Approval Officer's conclusions

AOPA does not expressly require approval officers to consider the cumulative effects of proposed developments together with those of other existing CFOs or other activities in the area. Further, the NRCB's Board members have directed approval officers not to consider cumulative effects in their permitting decisions. In a 2011 decision, the Board stated that consideration of cumulative effects is "not within the Board's regulatory mandate. As a statutory decision maker, the Board takes its direction from the authorizing legislation. AOPA does not provide for cumulative effects assessment." (Zealand Farms, RFR 2011-02 at 5.)

Claimed effect(s) or concern(s)	Respondent(s)
10. Impact to roads: increased traffic on roads, need for dust abatement and concerns over who will pay	Harwoods

Approval Officer's conclusions

Traffic and maintenance requirements on the county roads may have changed over the years due to the development of this CFO; this may change further if a CFO expands. However, the county has jurisdiction over local roads and did not raise concerns regarding a potential increase in traffic dust or maintenance costs due to this development.

Claimed effect(s) or concern(s)	Respondent(s)
11. Errors in the Part 2 application: names of CFO neighbours not properly stated, inaccurate distances stated, no mention of seasonal sloughs or oxbows	V&J Rau

Approval Officer's conclusions

Approval officers complete an independent review of applications which includes but is not limited to review of aerial photographs of the CFO and surrounding lands. Technical Document RA20034 includes a review of these matters where these concerns are addressed.

Claimed effect(s) or concern(s)	Respondent(s)
12. Geotechnical or engineering concerns <ul style="list-style-type: none"> a. conflicting information in the report related to water table depth, concern of a fluctuating water table depth due to flooding events, b. inconsistency of soil terminology used in the report, c. a relatively high bedrock depth could be indicative of an elevated flood risk, d. hydraulic conductivity results from borehole 19BH06 are inconclusive e. liners should be required a hydraulic conductivity of 1.8×10^{-6} cm/s doesn't meet requirement 	V&J Rau

Approval Officer's conclusions

12a. I am aware that a flooding event (or related events) could impact the depth to a water table at a site. As noted in Technical Document RA20034 there is a variability in the soil below the proposed feedlot expansion. Based on this, I expect that there will also be variability in the water table depth at the proposed CFO expansion. Despite this, the water table separation requirement of section 9 applies "at the time of construction". As noted in Technical Document RA20034, pages 25, 27, 29, and 33, the proposed pens and catch basins will meet the water table separation requirement.

12b. Soil terminology and soil properties, specifically particle size analytical results, are discussed in Technical Document RA20034, pages 25, 27, 29, and 33.

12c. As noted previously, AEP has indicated that a detailed flood assessment should be undertaken. The response from AEP related to the CFO's proximity to the river has been forwarded to the applicant for their information. To the best of my knowledge the applicant has not completed a detailed flood plain assessment as requested by AEP. The NRCB has completed elevation measurements and compared them to a topographic survey and bridge flood information from Rocky View County (see Appendix A, the contents of Appendix A are not to be considered a detailed flood plain assessment). Conditions to address the CFO's proximity to the river and its flood plain are included in part 11 and Appendix F.

12d. I forwarded this concern to the NRCB's science and technology division. Their response indicated that the methods used in the report are acceptable practice if properly done. The geotechnical report attached to the application states that the site of the hydraulic conductivity test was hydrated numerous times prior to the test occurring and that hydration is critical for accurate representation of the soil tested. I accept that the hydraulic conductivity test results which were completed by a professional engineer are conclusive for borehole 19BH06.

12e. Pages 27 and 29 of Technical Document RA20034 discusses the hydraulic conductivity testing that was completed in 2021 and associated soil thicknesses and particle size analytical results. A hydraulic conductivity of 1.8×10^{-6} cm/s is greater than what is stated in section 9 of the SAR. Despite this, the combination of soil thickness and hydraulic conductivity provide an equivalent or greater protection than a two metre thickness with a hydraulic conductivity of 1.0×10^{-6} cm/s.

Claimed effect(s) or concern(s)	Respondent(s)
13. Alternatives should be considered such as moving away from the river, putting livestock under roof rather than conventional feedlot pens (to reduce odour improve manure and urine management)	V&J Rau

Approval Officer's conclusions

It is an approval officer's role to decide if proposed facilities meet AOPA requirements or not, not which method the applicant or parties who have expressed concerns with it would prefer. A copy of this concern was forwarded to the applicant for their information and consideration. I note how the application amendment removed proposed pen area two which does increase the distance from the CFO pens to the oxbow to the east.

APPENDIX E: Exemption from water well setback

The proposed south pen area, pen areas three and four, are to be located less than 100 m from a water well. I have confirmed during a site visit that a water well (with GIC ID 1020768) is located approximately 25 m from these pens. This is in conflict with 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 collection area (MCA), and, if required, a groundwater monitoring program is implemented.

The potential risks of direct aquifer contamination from the MCA are presumed to be low if the applicant's proposed 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 MCA
- d. Whether the well is up- or down-gradient from the 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.

Water well 1020768 is reported to have been installed in 2000 and has a perforated or screened zone from 53.3 m to 89.9 m below ground level across interbedded shale and sandstone layers. This well was installed with an above ground casing; the soil around this well is elevated to direct runoff away from it. This well is reported to be used for non-domestic purposes. The well's log identifies protective layer of till from 0.3 m to 2.7 m below ground level. The well has a driven seal from 36.6 m to 37.2 m below ground level across a sand and gravel layer. The well appeared to be in good condition at the time of my site inspection. The well is within metres of existing feedlot pens and appears to be cross gradient to pen areas three and four.

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 not likely as seen in Technical Document RA20034.

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

Despite the above, I am of the opinion that an exemption is warranted on a few factors. First, Approval RA16071 already includes a condition requiring annual water well testing. Results of that testing indicates that chloride and nitrate concentrations in groundwater from this well are relatively consistent. I note how the permit holder has not applied to have this condition removed from the permit; conditions of this nature are typically carried forward in the case of a decision like this. Second, the proposed pen areas three and four meet AOPA's protective layer requirements. As discussed previously, they pose a low potential risk to groundwater based on the results of an ERST that I performed.

Based on the above, I am prepared to grant an exemption to the 100 m water well setback requirement for pen area three and four.

APPENDIX F: Explanation of conditions in Approval RA20034

Approval RA20034 includes several conditions, discussed below, and carries forward a condition from Approval RA16071 (see section 2 of this appendix). Construction conditions from Approval RA16071 that have been met are identified in the appendix to Approval RA20034.

1. New conditions in Approval RA20034

a. Relocation of northern pens' fence to an elevation of 905.1 m

The applicant has included a commitment in Application RA20034 to pull back (up the hill) the fences of the northern pens (see Technical Document RA20034, page 67). As discussed in Part 6a and Appendix A I interpret this to be a commitment to move the fences back to an elevation of 905.1 m as indicated in the topographic survey part of Application RA20034 and Technical Document RA20034.

The permit holder must provide the NRCB with proof, prepared by a qualified third party, that the relocated fence is at or above an elevation of 905.1 m. The fence relocation must occur before livestock are allowed to enter the newly permitted pens.

b. Decommissioning of northern pens below an elevation of 905.1 m

As noted in part 6a and Appendix A, I interpret the realignment of the feedlot's northern pen fence to also be a commitment to decommission the portions of the northern pens below an elevation of 905.1 m in accordance with Technical Guideline Agdex 096-90, "Closure of Manure Storage Facilities and Manure Collection Areas", for facility type 3, solid manure storage facilities.

To ensure that the pens below an elevation of 905.1 m are decommissioned in a meaningful timeline, a condition will be placed in the permit requiring the decommissioning to occur on or before November 30, 2023. In addition to this, the NRCB must be provided with a completed manure storage/collection area closure worksheet for the decommissioned pens on or before November 30, 2023.

c. Groundwater protection requirements

Rosebud Feeders proposes to construct each of the catch basins with a 1.6 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, Rosebud Feeders 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 one metre thick compacted soil liner must not be more than 5×10^{-7} cm/sec.

In this case, the lab measurement was 7.9×10^{-8} cm/sec. With the required ten-fold modification, the expected field achievable value is 7.9×10^{-7} cm/sec. This expected value is greater than the maximum value in the regulations. Despite this, a 1.6 m thickness will provide an equivalent protection to a one metre thickness with a hydraulic conductivity of 5×10^{-7} cm/sec. Therefore, the proposed liner meets the groundwater protection requirement in the regulations.

d. Construction Deadline

Rosebud Feeders proposes to complete construction of the proposed feedlot expansion, including three pen areas and three catch basins by December 30, 2024. This time-frame is considered to be reasonable for the proposed scope of work. The deadline of December 30, 2024 is included as a condition in Approval RA20034.

e. 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, Approval RA20034 includes a condition requiring Rosebud Feeders to provide an engineer's completion report for the catch basins, prepared by a professional engineer, certifying that the catch basins:

1. have been constructed with the same material as tested from borehole 19BH09
2. have been constructed in accordance with the proposed design including the liner thickness, the number of lifts of soil in the construction of the liner, the liner's moisture content and compaction rate
3. were constructed to the proposed horizontal dimensions, vertical dimensions (including portions above and below ground) and inside wall slopes;

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. Approval RA20034 includes a condition stating that Rosebud Feeders shall not place livestock or manure in the new pens and shall not allow manure impacted runoff to enter the new catch basins until NRCB personnel have inspected the new facilities and confirmed in writing that they meet the approval requirements.

2. Condition carried forward from Approval RA16071

Condition one states:

The permit holder shall sample and test raw groundwater from water well #1020768, according to water well monitoring requirements prescribed by the NRCB in writing. The NRCB may, based on the monitoring results and at its discretion, revise those requirements from time to time, in writing.

As noted in the previous appendix the applicant has not requested to alter the condition, so it will be carried forward into the new permit.