

Decision Summary LA20004

This document summarizes my reasons for denying Application LA20004 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document LA20004. All decision documents and the full application are available on the Natural Resources Conservation Board (NRCB) website at www.nrcb.ca under Confined Feeding Operations (CFO)/CFO Search. My decision is based on the act and its regulations, the policies of the NRCB, the information contained in the application, and all other materials in the application file.

1. Background

On February 3, 2020, Hutterian Brethren Church of Granum (Granum Colony) submitted a Part 1 application to the NRCB to construct a new 8,000 beef finisher CFO. The Part 2 application was submitted on May 13, 2020 with amended animal numbers of 4,500 beef finishers. On May 20, 2020, I deemed the application complete.

The proposed CFO involves the construction of:

- 18 pens – each 60.96 m x 60.96 m
- Catch basin 1 – 40 m x 40 m x 3.1 m deep
- Catch basin 2 – 65 m x 40 m x 3.1 m deep
- Catch basin 3 – 40 m x 40 m x 3.1 m deep

Under AOPA, this type of application requires an approval.

a. Location

The proposed CFO is located at SW 31-11-27 W4M in the Municipal District (MD) of Willow Creek, roughly 7.5 km southwest of the Town of Claresholm. The terrain is hilly with a fairly steep slope on the west and southwest portion of the quarter. This area drains towards Meadow Creek which is 320 m south of the proposed CFO.

2. Notices to affected parties

Under section 19 of AOPA, the NRCB is required to notify (or direct 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:

- the municipality where the CFO is 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 this application, the distance is 1.5 miles. (The NRCB refers to this distance as the “affected party radius.”)

Municipalities that are affected parties are defined by the act to be “directly affected” and are entitled to provide evidence and written submissions. The Municipal District of Willow Creek is an affected party (and therefore also a directly affected party) because the proposed facility is located within its boundaries.

All other parties who receive notice of the application may request to be considered “directly affected.” Under NRCB policy, all individuals who own or reside on land within the affected party radius are presumed to be “directly affected” if they submit a written response to the notice within the prescribed timeline. See NRCB Operational Policy 2016-7: *Approvals*, part 6.2.

Under section 20 of the act, all directly affected parties are entitled to a reasonable opportunity to provide evidence and written submissions regarding the application.

All directly affected parties are also entitled to request an NRCB board review of the approval officer’s decision on the approval application.

The NRCB published notice of the application in the Fort Macleod Gazette on May 20, 2020, and in the Claresholm Local Press on June 3, 2020. The second notice in the Claresholm Local Press was provided as people living in the area informed me that the newspaper mostly read by people living in this area would be the Claresholm Local Press. To ensure adequate time to respond to the public notice, I extended the response deadline from June 17 (Fort Macleod Gazette) to July 2, 2020 (Claresholm Local Press).

The NRCB posted the full application on the NRCB website for public viewing on May 20, 2020. In addition to the public notice, the NRCB also emailed referral letters and a copy of the complete application to the MD of Willow Creek, Alberta Health Services (AHS), Alberta Environment and Parks (AEP), and Alberta Transportation. Four letters were sent to companies owning or operating gas pipelines or electrical lines. Twenty-five courtesy letters were sent to people identified by the MD of Willow Creek as owning or residing on land within the affected party radius. In addition, three more courtesy letters were sent to land owners within the notification radius that were not on the list received from the MD of Willow Creek and an another

3. Responses from the municipality and referral agencies

I received responses from the MD of Willow Creek, AEP, and Alberta Transportation. No response was received from AHS upon receiving the deemed application. However, in a follow-up phone conversation, the AHS representative stated that the current situation, COVID 19 and the pending reopening of schools, ties up most of the available resources.

Ms. Maryann Sandberg, reeve of the MD of Willow Creek, and Ms. Cindy Chisholm, manager of planning and development with the MD of Willow Creek, each provided a written response on behalf of the MD of Willow Creek. As noted in section 2, the MD of Willow Creek is a directly affected party.

Neither Ms. Sandberg nor Ms. Chisholm commented if the application was consistent with the land use provisions of the MD of Willow Creek’s municipal development plan but voiced concerns in respect to the haul routes. Both stated that there are several bridges on these haul routes that must be crossed to get to the CFO site and pointed out that the expected traffic is beyond the carrying capacity of these bridges. This concern is addressed in Appendix C. The application’s consistency with the MD of Willow Creek’s municipal development plan is addressed in Appendix A, attached.

The NRCB also received a written response from Leah Olsen, development/planning technologist with Alberta Transportation and Jeff Gutsell, hydrogeologist with AEP.

Ms. Olsen stated in her response that a permit from her department is not required and, given the information provided and strictly from Alberta Transportation's point of view, her department does not anticipate that the confined feeding operation as proposed would have any appreciable impact on the provincial highway network. She then continued to state that her department has no objections to the issuance of an NRCB permit.

Mr. Gutsell stated in his response that AEP has not yet received an application for a water licence for the CFO. He also stated that there are no existing water licenses issued for this land location and that this area is not linked to any of the irrigation districts. He calculated that the anticipated water need would be up to 133,000 cubic meters of water per year and requested the applicant to contact AEP to provide information about the source of water and to apply for a water licence prior to constructing. Although water licensing is solely under the jurisdiction of AEP, I discuss this issue in respect to the directly affected party concerns (Appendix C). A copy of the letter was forwarded to the applicant for his information and action. In a follow-up email, Granum Colony's agent indicated that Granum Colony was able to finalize their transportation route for water access and that AEP had advised that water rights are available.

4. Responses from other directly affected parties

The NRCB received 57 submissions (from 90 individuals).

Six of these submissions (from 11 individuals) were received by the NRCB after the submission deadline in the public notice. One of these submissions (from I. and B. Robertson) was submitted late due to the fact, that I could not reach them in time to direct them where to send their SOC. Because of this, the response of these two individuals was submitted one day after the SOC deadline. This response will be included as a timely response in my determination of directly affected party status. The other five submissions (from L. Culham, D. and D. Manning, L. and M. Edwards, R. Manchulenko, and J. Jowett) were submitted after the deadline for responses, and did not identify exceptional circumstances that would warrant an extension. The authors of these submissions also do not reside within the affected party radius, therefore, I will not further consider their submissions in my approval decision. However, their concerns were similar in nature to the concerns voiced by other individuals who submitted concerns.

Of the 83 people who submitted timely responses, 19 own or reside on land within the 1.5 mile radius for affected persons. Because of their location within this radius, these 19 individuals are presumed to be directly affected by the application.

As for the remaining 64 respondents who do not own or reside on land within the 1.5 mile radius for affected persons, in carefully considering their statements, I determined that five are considered to be directly affected by the approval application. Appendix B sets out my reasons for determining which parties are not considered directly affected. The concern raised by these parties are the same as, or very similar to, concerns raised by the directly affected parties, which are addressed in this decision summary (Appendix C).

These 24 directly affected parties raised a variety of concerns about the proposed CFO. These include surface water and groundwater contamination, water quantity, suitability of the liner, location in floodplain, impact of traffic on county roads and bridges, nuisance impacts, and property values.

All of the directly affected parties' concerns are addressed in Appendix C.

5. Environmental risk screening of proposed facilities

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

Based on this assessment, it was concluded that all of the CFO's proposed facilities pose a low potential risk to both groundwater and surface water. The risk assessment considered the proximity to the adjacent Meadow Creek and the highest flood level suggested in AEP's response to my inquiry of known flood elevations in this area.

6. Factors considered

In reviewing the application from Granum Colony, I considered all applicable AOPA requirements. While I have determined that the application:

- Has the ability to meet the required AOPA setbacks from all nearby residences (AOPA setbacks are known as the "minimum distance separation" requirements, or MDS) with a survey
- Meets the required AOPA setbacks from water wells, springs and common bodies of water
- Has sufficient means to control surface runoff of manure
- Meets AOPA's nutrient management requirements regarding the land application of manure
- Meets AOPA groundwater protection requirements for the design of floors and liners of manure storage facilities with conditions, and
- Is consistent with the land use provisions of the MD of Willow Creek's MDP.

I have also determined that the proposed CFO is likely to pose materially negative and long-lasting effects on the community that can also include a negative impact on the MD's overall economy. Additionally, because the existing transportation infrastructure is inadequate to support this proposed CFO, it is also not an appropriate use of the land.

As required by section 4(1) of the South Saskatchewan Regional Plan (SSRP), 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.

7. Conclusion

For the reasons provided above, in the attached appendices and in Technical Document LA20004, Approval LA20004 is denied.

August 24, 2020

(original signed)
Carina Weisbach
Approval Officer

Appendices:

- A. Consistency with the municipal development plan
- B. Determining directly affected party status
- C. Concerns raised by the MD of Willow Creek and directly affected parties
- D. Effects on the community
- E. Recommendation of conditions if a permit was issued

APPENDIX A: Consistency with the municipal development plan

Under section 20 of AOPA, an approval officer may approve an application for an approval only if the approval officer finds that the application is consistent with the “land use provisions” of the applicable municipal development plan (MDP).

The NRCB interprets the term “land use provisions” as covering MDP policies that provide generic directions about the acceptability of various land uses in specific areas and that do not call for discretionary judgements relating to the acceptability of a given confined feeding operation (CFO) development. (See NRCB Operational Policy 2016-7: *Approvals*, part 8.2.5.) Under this interpretation, the term “land use provisions” also excludes MDP policies that impose procedural requirements. In addition, section 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” for 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.”)

Granum Colony’s CFO is proposed to be located in the MD of Willow Creek and is therefore subject to that district’s MDP. The MD of Willow Creek adopted the latest revision to this plan on August 21, 2019, under Bylaw #1841.

Section 2 – Agriculture of the MDP points out that agriculture is a predominant land use in the MD while it is important to balance other interests. It continues to state that one of the main objectives of the MDP is to mitigate the siting of a CFO to minimize conflicts with adjacent land uses. Policy 2.3 then continues to state that the MD shall establish guideline with regards to the NRCB for the regulation and approval of CFOs within the MD. These guidelines are found in section 9.

Section 9.2 of the MDP directs the NRCB to consider six provisions. These are quoted below (in italics); each one is followed by my discussion of how the provision related to this application. The requested considerations are:

(a) The cumulative effect of a new approval on any area near other existing CFO’s/ILO’s

This policy is likely not a “land use provision,” as it calls for project-specific, discretionary judgements about the types of cumulative effects that should be considered and the acceptable maximum levels of each of those effects. For this reason, I do not consider the MDP provision to be relevant to my MDP consistency determination.

(b) Environmentally significant areas contained in the “Municipal District of Willow Creek: Environmentally Significant Areas in the Oldman River Region” report

Granum Colony’s proposed CFO is close but not within any natural areas designated as of regional, provincial or national significance in the referenced report (Map 1 of the report). However, areas of local significance are not presented in this report.

The report also assessed the planning area for major physical constraints such as flood plains, unstable slope potential, and areas of artesian flow. The map shows that the CFO site meets two of several categories for hazard: flood plain and artesian flow. (see further discussion in e) below).

Because the subject area is not identified as of environmental significance at a higher level, I determined that the application is consistent with this provision.

(c) Providing notice to adjacent landowners including applications for registration or authorization

This is likely not a “land use provision” because of its procedural focus and thus I do not consider it to be relevant to my MDP consistency determination. At any rate, as explained above, the NRCB sent out courtesy letters to people identified by the MD of Willow Creek as owning or residing on land within the affected party radius of 1.5 miles, and gave public notice in the Fort Macleod Gazette and a second notice in the Claresholm Local Press upon receiving notice that this would be the newspaper that is read in the area of the proposed CFO. The application therefore met the notification requirements of AOPA. (See also Operational Policy 2016-8: *Approvals*, part 6).

(d) Applying minimum distance separation calculations to all country residential development

I interpret “minimum distance separation” as referring to the minimum distance separation (MDS) requirements in section 3 and Schedule 1 of the Standards and Administration Regulation under AOPA. There is no country residential development located within the MDS for Granum Colony’s CFO and the application can meet AOPA’s MDS requirements.

(e) Restricting development in the flood plain, floodway, the flood way fringe and flood prone, or hazard lands within or adjacent to any watercourse within the MD; and

As discussed in Technical Document LA20004, Granum Colony’s proposed new CFO meets the AOPA setbacks to common bodies of water but is located in a flood plain according to Map 2 of the ‘MD of Willow Creek Environmentally Significant Areas, February 1989’-report. Because the resolution of the map in this report is rather coarse, I contacted AEP to verify this information. The information I received indicates that it depends on the elevation difference of the final grade of the facility and the normal water flow in Meadow Creek. The elevation difference should be >2.3 m for the facility not to be located in a flood plain or flood prone zone. A visual assessment during a site visit indicates that there is a possibility that the CFO could be outside the flood prone zone due to the distance to the creek, overall landscape and its elevation. This observation is supported by the topography map that was submitted (Technical Document LA20004, page 14). The elevation difference between the normal water level in Meadow Creek and the proposed final grade of the closest catch basin is approximately 3 m. With the information available together with the determination I made in (b) above, I determined that the application is consistent with this aspect of the provision.

The land is also determined to be an area of artesian flow. Nevertheless, I did not observe any springs on this quarter section. I therefore determined that the application is consistent with this aspect of the provision.

(f) Restricting development in any wetland or riparian area

The proposed CFO is not located in a wetland or riparian area. This provision is therefore met by the application.

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

In my view, the Land Use Bylaw is clearly incorporated in the MDP in several sections throughout the MDP including section 15.5 which states:

The Development Authority shall require the NRCB to take into consideration the policies adopted in this plan and the Land Use Bylaw, when issuing an approval.

Therefore I also considered the application's consistency with this document. Under the MD of Willow Creek's Land Use Bylaw (#1826 consolidated to Bylaw No. 1849 in April 2019), the subject land is currently zoned as Rural General. CFOs are not listed as a prohibited, permitted, or discretionary land use under this zoning. Ordinarily, a land use bylaw intends to preclude land uses that are not listed as permitted or discretionary (and that do not meet any other relevant criteria). However, the land use bylaw lists "intensive livestock operations" (ILOs), defined essentially as CFOs below AOPA's permit thresholds, as a discretionary use within areas zoned Rural General. Therefore, I interpret the omission of CFOs from the lists of permitted and discretionary land uses as simply the municipality's recognition that, since AOPA came into effect in 2002, the NRCB is responsible for permitting CFOs above AOPA thresholds.

As for the lot size restriction, section 2(4) of the Rural General part of the bylaw states that the "parcel size shall remain the same size for which the development approval was originally issued." Although CFOs are not specifically addressed in the LUB, it is my interpretation that the lot restrictions are intended to apply to both, ILOs that are permitted by the municipality, and CFOs above AOPA's permit thresholds. Apart from that, this application is for a new CFO and section 2(4) does not apply.

Section 3 of the Rural General part of the bylaw lists several setbacks. The proposed feedlot pens and catch basins would meet the 75 ft. road setback required under that section. For these reasons, I conclude that the application is consistent with the land use bylaw.

APPENDIX B: Determining directly affected party status

The following individuals own or reside on land within the “affected party radius,” as specified in section 5(c) of the Agricultural Operations, Part 2 Matters Regulation:

Barry and Casey Arnestad
NE 19-11-27 W4

Eleanor, Shelby and Guy Biddlecombe
NE 36-11-29 W4

Don Chatterton
NW 4-12-27 W4, N½ 25-11-28 W4, SE 36-11-28 W4

Joy Chatterton
NW 4-12-27 W4, N½ 25-11-28 W4, SE 36-11-28 W4

Kacey and Nolan Cotter
NW 29-11-27 W4

Dean and Nicole Dunand
NW 24-11-28 W4

Mike Hart (Willabend Ranch Ltd)
SW 18-12-27 W4 and NE 32-11-27

Pam Heyland
NW 36-11-28 W4

Fred Lozeman (Lozeman Farm Ltd)
SW 8-12-27 W4

Allan Minor
NW 30-11-27 W4

Kyla Minor
NW 30-11-27 W4

Judy Minor
NW 30-11-27 W4

Byron Westwell
NE 24-11-28 W4

Dixie Lee White
E ½ 1-12-28 W4

Therefore, under NRCB policy, these individuals are presumed to be “directly affected” by the application. See NRCB Operational Policy 2016:7 – *Approvals*, part 6.2.

The following individuals who submitted responses to the public notice reside on or own land outside of the affected party radius. However, they may still qualify as directly affected parties based on their “exposure to potential nuisances or risks” posed by the proposed CFO (*Ijtsma*, RFR 2011-05, page 3):

Dean Challand
NW 33-11-27 W4

Vonda Chatterton
NW 4-12-27 W4

James and Lori Ford
At Claresholm Airport – no legal land description provided

Murray Frame and Wendy Harvey (Frame Aviation/High River Aviation)
NW 16-12-27 W4

Logan Jensen
SE 27-11-28 W4

Eddie and Natalie Jensen
NE 17-11-28 W4

Rodney and Hope Jensen
NW 18-11-28

Betty and Lee Mainprize
SW 31-12-26 W4

Maureen Rice
SE 2-12-27 W4

Marlon Thompson (Edgehill Farms Ltd)
NE 12-11-18 W4 and NW 18-11-27 W4

Bob and Luella Uhl
2 miles northwest of SW 31-11-27 – no legal land description provided

The Fords only stated that they owned property where their airport hangar is located, but did not provide a legal land description. Similarly, I observed that the Uhl's did not provide their own legal land description, so it was difficult to ascertain exactly where they reside or own land. However, I checked the ownership of all lands within the affected party radius and did not find any lands that are owned by the Uhl or Ford family. I therefore presume that they reside or own lands outside this radius.

Residents of the Town of Claresholm:

Barry Bowers
Eric and Alayna Chatterton
Doug and Stella Chilton
Gloria Drummond
Mich Forster and Paulette Dumont

Darcy Erickson
Barry Gerbrandt
M. Grainger
Graham and Sarah Green
Arlene Hart
Barbara and Wayne Hinkle
Kay Hewitt
Kyle and Alysha Klaassen (Murphy)
Steve Kashman
Ruth Lindquist
Dean Lindquist
Gerald and Carol McAssey
Judy-Florence Moser
G.W. and Donna Moses
Cheryl and Randy Parsons
Dan and Gwen Rhode
Ian and Beverly Robertson
Bryan and Margaret Roemmele
Nancy Schroeder and Robert Pool
Judy Slaughter
Peggy Toth
Todd Walt
Gary and Lindsay Watson
E.T. and Petra Webster
Elaine Whitehead

Some of the individuals listed as residents of the Town did not provide a street address or legal land description in their statement. I have assumed from the content of their statements that they reside in the Town of Claresholm. Those individuals are: Doug and Stella Chilton; Gloria Drummond; Barry Gerbrandt; Kay Hewitt; Steve Kashman; and Peggy Toth.

Under NRCB policy, a person who is not presumed directly affected has the burden of demonstrating that they are directly affected by an application. A person demonstrating the following likely meets their burden of proof:

1. A plausible chain of causality exists between the proposed project and the effect asserted;
2. The effect would probably occur;
3. The effect could reasonably be expected to impact the party;
4. The effect would not be trivial; and
5. The effect falls within the NRCB regulatory mandate under AOPA. (NRCB Operational Policy 2016:7 – *Approvals*, part 6.3; see also Ijtsma, page 4.)

Of the persons who submitted timely concerns and who are not presumed to be directly affected, I find that only L. Jensen, R. and H. Jensen, and E. and N. Jensen are directly affected parties. My reasons for this finding follow.

Asserted effects	Respondents
Nuisance impacts (odor and dust) in town, recreational areas and parks	B. and L. Uhl, J. and L. Ford, D. and S. Chilton, G.W. and D. Moses, A. Hart, G. and S. Green, D. Erickson, B. Bowers, E. Whitehead, J. Slaughter, J. Moser, K. Hewitt, P. Toth, E.T. and P. Webster, D. and G. Rhode, M. Grainger, B. and M. Roemmele, K. and A. Klaassen, M. Rice, E. and A. Chatterton, G. and C. McAssey, B. and W. Hinkle, I. and B. Robertson, M. Thompson, R. Pool and N. Schroeder, C. and R. Parsons, R. Lindquist, M. Frame and W. Harvey, B. Gerbrandt, M. Forster and P. Dumont, Vonda Chatterton
Cumulative effect with other CFOs upwind	B. and L. Mainprize, D. and S. Chilton, G.W. and D. Moses, A. Hart, G. and S. Green, B. Bowers, E. Whitehead, J. Moser, G. Drummond, D. and G. Rhode, M. Grainger, B. and M. Roemmele, B. and W. Hinkle, K. and A. Klaassen, G. and C. McAssey, I. and B. Robertson, M. Thompson, R. Pool and N. Schroeder, R. Lindquist, B. Gerbrandt, V. Chatterton
Negative impact on the community (loss of attractiveness to new business and people to settle in Claresholm, retirement community, presence of public health and retirement complexes)	J. and L. Ford, D. and S. Chilton, A. Hart, G. and S. Green, E. Whitehead, G. and L. Watson, J. Moser, E. and A. Chatterton, G. and C. McAssey, I. and B. Robertson, R. Pool and N. Schroeder, B. and L. Mainprize, G.W. and D. Moses, G. and C. McAssey, C. and R. Parsons, M. Frame and W. Harvey, B. Gerbrandt, M. Forster and P. Dumont
Possible negative health impacts	J. and L. Ford, K. and A. Klaassen, M. Rice, G. and C. McAssey, R. Pool and N. Schroeder, D. Lindquist, R. Lindquist, M. Frame and W. Harvey, B. Gerbrandt, M. Forster and P. Dumont, V. Chatterton
Water supply issues	E. Whitehead, M. Grainger, M. Rice, E. and A. Chatterton, G. Drummond, L. Jensen

Surface water and groundwater contamination (runoff from CFO and manure spreading)	<u>Surface water contamination:</u> B. and L. Uhl, D. and S. Chilton, A. Hart, T. Walt, E. Whitehead, J. Moser, K. Hewitt, , K. and A. Klaassen, M. Rice, E. and A. Chatterton, M. Thompson, R. Pool and N. Schroeder, L. Jensen, R. and H. Jensen, E. and N. Jensen, D. Lindquist, R. Lindquist, M. Frame and W. Harvey, B. Gerbrandt, V. Chatterton <u>Groundwater contamination:</u> E. Whitehead, M. Rice, E. and A. Chatterton, J.-F. Moser, M. Thompson, R. Pool and N. Schroeder
Increase in traffic and deterioration of road system (including bridges), road safety	E. Whitehead, P. Toth, M. Grainger, M. Rice, B. and W. Hinkle, G. and C. McAssey, M. Thompson, R. Pool and N. Schroeder, C. and R. Parsons, L. Jensen, K. Hewitt, R. and H. Jensen, E. and N. Jensen, M. Frame and W. Harvey, A. Chatterton
Increase in taxes to repair municipal roads	R. Pool and N. Schroeder, L. Jensen, R. and H. Jensen, E. and N. Jensen, M. Rice
Decrease in property value	J. and L. Ford, D. and S. Chilton, G.W. and D. Moses, G. and S. Green, E. Whitehead, B. and W. Hinkle, E. and A. Chatterton, I. and B. Robertson, L. Jensen M. Thompson, R. Pool and N. Schroeder, D. Lindquist, M. Frame and W. Harvey, M. Forster and P. Dumont, K. and A. Klaassen
Loss in enjoyment of property and quality of life	G.W. and D. Moses, G. and S. Green, D. Erickson, J. Slaughter, P. Toth, B. and M. Roemmele, K. and A. Klaassen, M. Rice, E. and A. Chatterton, L. Jensen, M. Frame and W. Harvey, A. Hart, V. Chatterton
Negative impact on wildlife	B. and W. Hinkle
Concerned about animal welfare	G. Drummond, B. and W. Hinkle

1) Nuisance impacts (odor and dust) in town, recreational areas and parks

As shown in the table above, one of the main concerns is odor impacts as a result of the prevailing winds coming from the southwest, carrying odor from the proposed CFO 7.5 km southwest of town towards the town.

Nuisance impacts depend on many factors, starting with operational practices at the CFO, wind direction and speed but also perception and odor sensitivity. The MDS is a means of mitigating odour and other nuisance impacts from CFOs. The NRCB generally considers the MDS as the distance beyond which the odours and other nuisance effects of a CFO are considered to be acceptable under AOPA.

Most of these parties reside on or own land that is approximately 4 to 9 km from the CFO site.

Though I could not find out where the Uhl family exactly resides, they indicated in their statement that they lived two miles northwest of the proposed CFO. The required minimum distance separation (MDS) from the CFO to the nearest residence is 659 m for land zoned agriculture (Category 1) and 1,756 m for large scale country residential, hamlets, villages, towns or cities (Category 4).

That said, people residing beyond the MDS may still experience odors and other nuisance impacts from time to time and, in some instances, those impacts may be more than trivial. However, in this case, the closest of these respondents is located more than two times the MDS for land of category 1 and the residents within town more than four times the MDS for land of category 4 from the proposed CFO. I am therefore on the opinion that point 4 of the test has not been met.

Some of the parties may experience some odors or other nuisance impacts when manure spreading takes place. However, the frequency of these exposures will likely be limited and of short duration.

2) Cumulative effect with other CFOs upwind

I understand the concern is that the proposed development will exacerbate the current nuisance impacts experienced by the residents in the Town of Claresholm from existing feedlots, particularly one located to the south of the town. There are currently two existing feedlots in the area, one 3 km south of town along HW2 and one 4.5 km southwest of town. It is difficult to assess the degree of cumulative effect that an additional CFO of this type and size in this area would have. Perhaps due to the difficulty in this assessment, the submissions were only speculative on how much more pronounced the nuisance impacts would be from what they are right now. There is no objective threshold to determine the level of acceptable nuisance impacts arising from multiple (but separate) CFOs that adhere to generally accepted management practices (section 2(1)(c) Part 1 AOPA). Although I don't want to under-value this concern, it is impossible with the information I have to predict the degree to which the additional effect from this CFO would impact these individuals or whether the effect from this CFO would be anything more than trivial.

3) Negative impact on the community (loss of attractiveness to new business and people to settle in Claresholm, retirement community, presence of public health and retirement complexes)

This concern, although perhaps plausible and not trivial in nature, is difficult to evaluate, particularly in respect to an actual outcome and in which way it meets point 2 (would the effect probably occur?) and 3 (would the effect be reasonably expected to impact the party?) of the analysis. There is the potential of a general impact although it is difficult to say how severe and how often nuisance issues may arise. I also presume that it is of particular concern to businesses in this area, including the airport (e.g. the Fords, Frame Aviation) as well as the health complexes in this community. However, albeit upwind, the proposed CFO is more than 6 km away from the airport and more than 8 km away from the health complexes. Because of this more general potential impact, together with the distance between CFO and the town, I determined that the respondents have not demonstrated that the effect would reasonably be expected to impact each or any of these parties. While this is not a basis for the respondents to gain directly affected party status, also note that I have considered this concern in my 'effects on the community' analysis in Appendix D below.

4) Possible negative health impacts

For the most part, the negative health impacts were characterized in general terms. Ms. Rice wrote about gases produced by CFOs, Mr. Frame stated he has a respiratory problem (and unspecified allergies) and Mr. Lindquist states he is asthmatic. I have no information, e.g. from a health professional, that this kind of CFO would cause the health impacts asserted, or would probably affect these individuals in particular.

All responses that raised health concerns (including concerns regarding asthma, airborne illnesses, or chronic lung disease) were sent to AHS. AHS did not respond to these concerns due to the current health crises.

5) Water supply issues

Water supply is a serious concern, particularly in Southern Alberta where surface water allocations are closed and some areas are without prolific aquifers that can provide sufficient water for farms or urban centers. Some respondents pointed out that the water table in their area has already sunk due to the increase in agricultural activity and that they are concerned about water security in the future. I can see a plausible chain of causality, and I can see that the effect – if it occurred – could reasonably be expected to impact at least some of these individuals. However, this concern is not only outside the regulatory mandate of the NRCB, but is squarely regulated by another agency. When issuing water licences, AEP has its own approval process and procedures under the Water Act to determine the sustainability of a water source. For this reason I will not consider this concern as a basis to grant directly affected party status.

6) Surface water and groundwater contamination (runoff from CFO and manure spreading)

Many of the respondents voiced general concerns about manure contaminated runoff from the feedlot entering Meadow Creek and the potential of seepage of manure constituents into groundwater. I can see a plausible chain of causality, and these issues are not trivial in nature. In fact, many of AOPA's technical requirements are designed specifically to address these concerns. However, aside from the environment itself, these particular respondents have not demonstrated that this impact would occur, or the in which way they are reasonably expected to be impacted if a contamination event was to occur.

7) Increase in traffic, ability of existing road system to support the development (deterioration of roads and bridges), road safety

Another concern that was raised was an expected increase in traffic on county roads and potentially through the Town of Claresholm with the consequence of more noise and dust, a quicker deterioration of county roads and an increased risk of traffic accidents on MD roads and within the town. Of the respondents who live in or close to town, I determined that they did not demonstrate a concrete, direct negative effect, in other words, point 3, that the effect could reasonably be expected to impact them.

However, some of the respondents, although not residing on or owning land within the affected party radius, would presumably be using the road system close to the CFO on a regular basis. Because of this, the effect could reasonably be expected to impact them for the purposes of the test described above. This concern is also the main concern of the MD (an automatic directly affected party), who concluded that the bridges were not constructed to support the expected

truck traffic for a CFO of that size and that CFO-related trucks would have to engage in a circuitous route, using roads that are not constructed to support heavy traffic. Although road systems within the county/MD as well as the provincial highway system are not under NRCB jurisdiction and point 5 of the test (see criteria above) cannot be met, I believe that it is fair to find that the other 4 points of the test have been met. In this particular case, I do not treat the last point 5 (within NRCB's regulatory mandate) as a requirement. I therefore determined that the following respondents are directly affected by this application: L. Jensen, R. and H. Jensen, and E. and N. Jensen. These individuals reside further west on Meadow Creek road and would therefore be sharing the road with any truck traffic arising from the operation of the CFO.

8) Increase in taxes to repair municipal roads

Some of the respondents suggested there would be an increase in taxes. As the MD pointed out in its response to this application, the upkeep of the road system will be costly. Consequential community costs (e.g. property taxes or other taxes) of a specific development are part of the county/MD finances and budgeting. The significance of any increased tax on any given individual, caused directly by this CFO's use of roads and bridges, is not possible for me to assess if points 1-4 of the test can be met. In my view, the magnitude, probability and severity of this asserted effect is not only unknown, but is also outside the scope of my considerations and with that, it does at a minimum not meet the 5th point of the test. I will therefore not include this concern as a determinative factor to determine directly affected party status.

9) Decrease in property value

Although the nature of the concern has the potential to meet some parts of the test, the NRCB board members have consistently stated that concerns regarding the effect of a CFO on land values is not a subject for review under AOPA.

It would make little sense to grant directly affected status solely on the basis of a concern that would not be reviewed. Therefore it is not appropriate to use this concern as the basis to grant directly affected party status. However, I have considered this concern in my 'effects on the community' analysis in Appendix D below.

10) Negative impact on wildlife

One respondent was concerned about the impact the proposed development will have on wildlife observed in this area. The speculative and general nature of this concern is not sufficient to establish points 2-5. I therefore determined that this respondent did not meet the criteria in order to gain directly affected party status.

11) Concern about animal welfare

Three respondents were concerned about the welfare of the cattle during flood events when there is a great likelihood that the personnel cannot reach the facility to feed the cattle. Although this might occur and is of course of general concern, I am on the opinion that the respondents have not shown in which way they are directly affected, neither is this within the NRCB's jurisdiction. I therefore determined that these respondents did not meet the criteria in order to gain directly affected party status.

APPENDIX C: Concerns raised by the MD of Willow Creek and directly affected parties

MD of Willow Creek

Both letters, written by Ms. Chisholm and Ms. Sandberg respectively, expressed concerns about the haul routes from and to the proposed CFO. In both responses, the authors laid out current weight restrictions of those bridges, which Granum Colony would have to cross in order to access the CFO. The letters further explained that the MD contacted Alberta Transportation to discuss the possibility to change the double lane traffic over bridges that are regulated by Alberta Transportation to 'single lane' traffic. The suggestion was declined. The MD further explained that as a consequence of the weight restriction of those bridges, Granum Colony will not be able to use these bridges and will have to use alternate routes to access their CFO. The roads of all alternative routes are not designed as heavy duty haul routes and will result in extensive maintenance costs to the MD as well as the Granum Colony (the applicant). The MD also requested that the NRCB informs the applicant of this concern. A copy of the MD's response was forwarded to the applicant on July 2, 2020.

Response from Granum Colony (Granum Colony's agent responded on the colony's behalf):

Cattle hauling

The main haul route for cattle will be along Meadow Creek Road which includes Bridge No 6733. The applicant committed, that the cattle liners (trucks that haul cattle) will only pull a single trailer and will be well below applicable weight restrictions. In addition, all drivers will abide by all rules and regulations of the road.

Grain and silage input

Most quarter sections used for producing the required silage and grain are in the vicinity and do not require the crossing of any of the bridges indicated in the MD letter to get to the site. The use of locally produced feed inputs will greatly reduce mileage on the MD road network.

Manure dispersal

The following quarter sections are proposed to provide the required land base for manure spreading: SE 20-11-27 W4, S½ 21-11-27 W4, SE 32-11-27 W4, and SW 33-11-27 W4 (a total of 886 acres). This would result in intermittent truck traffic. No bridge traversing would be required. Manure hauling will be scheduled to accommodate seasonal axle weight restrictions.

As a summary, the applicant's agent concluded that the additional traffic would be an average of 3.2 cattle liners per week. Seasonal increase in local traffic in the vicinity of the site would be due to feed inputs but would just be a diversion of the existing truck traffic from the larger area. The agent also stated that this is in line with existing land uses and that concerns related to capacity restriction are not warranted, given that all traffic is obligated to follow all traffic rules and regulations.

Approval officer comments and conclusions:

The calculation provided by Granum Colony's agent concludes that there are 107 trucks of outbound finisher cattle which amounts to 2 trucks per week on average. Similarly, 64 truckloads of calves will be received, 1.2 trucks per week on average.

I don't believe that averages do justice to the overall amount of traffic an area experiences in general as a result of such a development, particularly if the traffic is seasonal and might coincide with weather patterns that are detrimental to road conditions or contribute to dust from roads. Realistically, heavier traffic can be expected during the period when the feedlot is being

stocked – typically in the fall with more traffic associated with the export of finished cattle, starting about six months later and lasting for a period of time. In addition, hauling of feed and silage material is also very seasonal (July, August, September, potentially into October) and will be concentrated in the area of the CFO.

Since the letter was issued, the applicant has changed the manure spreading lands to respond to the concerns raised by the MD. The final list includes the following quarter sections (see page 20 of Technical Document LA20004):

New: NW 21-11-27 W4 and NE 21-11-27 W4

(Unchanged: SE 20-11-27 W4, S½ 21-11-27 W4, SE 32-11-27 W4, and SW 33-11-27 W4)

In all cases, manure hauling trucks will have to cross Meadow Creek at one point, although the proposed sections avoid bridge crossings across Willow Creek and also reduce overall hauling distance for manure. Nevertheless, the annual manure production of a 4,500 head feedlot is calculated to be 9,900 tonnes. In its response, Granum Colony did not specifically comment on the increase in traffic, only that the new listed lands do not require crossing any of the bridges. Assuming Granum Colony would be using typical triple axel manure spreading trucks, able to haul between 14-15 tonnes/load, the local traffic between the CFO and manure spreading lands will increase by up to over 600 trucks annually if the feedlot is fully stocked.

There will be an increase in overall traffic on Meadow Creek road and Range Road 28-0 to access the operation. Range Road 28-0 is the connector road between Meadow Creek road and HW 520 that leads to the Town of Claresholm. In addition, it is also evident that Meadow Creek road and Range Road 28-0 will have to be used to access HW 2 for cattle hauling, feed supply and other general traffic associated with the CFO.

Concerns raised by directly affected parties

Procedural concerns

Barry and Casey Arnestad:

- *Application advertised in newspaper that is not read in the area*
- *Discrepancy of animal numbers between Part 1 and 2. Proposal unclear*
- *Did not receive a courtesy letter*

Joy Chatterton

- *Did not receive notice*

Dr. Vonda Chatterton

- *Application advertised in newspaper that is not read in the area*
- *Lack of transparency*

E. and N. Jensen and R. and H. Jensen

- *Lack of transparency in respect of long term intentions*

L. Jensen

- *Advertisement – wrong newspaper*

Judy Minor

- *NRCB should come on site to see*
- *NRCB should consult with people in the area*

Allan Minor

- *Application advertised in newspaper that is not ready in the area*
- *Site visit necessary*
- *NRCB should consult with people in the area*

Byron Westwell

- *Application advertised in newspaper that is not read in the area*
- *Did not receive a courtesy letter*

Approval officer comments and conclusions:

The responses included several concerns in respect to procedure.

a) Public notice

The first and foremost concern was that public notice was given in the Fort Macleod Gazette rather than in the Claresholm Local Press which is read by most people in this area. Public notices for NRCB permit applications are given by the NRCB and not the applicant. After receiving a phone call from a resident of this area, informing me that the Fort Macleod Gazette is not read in this area, the NRCB re-advertised in the Claresholm Local Press with a new deadline to submit statement of concerns. The deadline was moved from June 17 to July 2, 2020 to allow for adequate time to respond.

b) What was applied for

The second concern was that it was unclear what Granum Colony applied for. In Part 1, which forms the first page of the application package, Granum Colony stated that they were applying for 8,000 beef finishers. However, this number changed over the course of finalizing the application and was lowered to 4,500 of beef finishers. According to NRCB policy, the applicant would not have to fill out a new Part 1 if the number of animals decreased, however, the Part 1 should have been amended (updated) to reflect the new animal numbers that are being applied for. There is no impact on the permitting process if the final number of animals is less than initially stated.

c) Courtesy letters

Two individuals also expressed concern about the fact that they did not receive a courtesy letter and learned about the development through the grapevine. As laid out in section 19(1) of AOPA and in further detail in the NRCB's Approval Policy section 7.5.2, where practical, the NRCB will send out courtesy letters based on names and addresses provided by the local municipality. While these letters are not the official notice for the application, as a courtesy they refer the recipient to where the official notice is published and include contact information for the NRCB. The determination of the directly affected party status does not depend on the receipt of such letter, neither does an approval officer solely rely on the list provided by the municipality when determining who is considered a directly affected party.

d) Site visit

Site visits are an integral part of the application permitting process and every approval officer is obligated to conduct at least one site visit prior to making a decision on an application. As stated in Technical Document LA20004, page 23, I conducted site visits on June 23, 2020, and July 27, 2020.

e) Consultation with locals

During the window to submit statement of concerns, I was contacted by several concerned citizens and spoke to them over the phone. Apart from the current world-wide COVID-19 health situation, which does not promote direct contact, I encouraged everyone I spoke to, to submit a detailed written statement of concern. As laid out in section 8(2) of the AOPA Administrative Procedures Regulation, submissions must be filed in writing. Therefore, information which may

have been shared in individual conversations cannot be considered in my decision making process.

f) Transparency

The NRCB approval process makes all efforts to be transparent. This includes public notice and the posting of the application on the NRCB website for review by anyone who is interested. Generally, anyone who would like to get additional information can contact the NRCB during the application process. Additional information or updated information pertinent to the application and necessary to make my decision is included in the technical document which is part of the decision package and is publicly available once the decision has been rendered. In addition, copies of the decision documents will be sent to all persons who submitted a statement of concern together with a cover letter, outlining the time lines and procedures should they wish to request a review of the decision to the NRCB Board.

g) Long term plans of Granum Colony

The NRCB can only evaluate the application that is before them. It is not possible to extrapolate what a specific applicant might do in the future. Having said that, there is potential to expand the CFO in the future. If that occurs the proposed expansion will have to meet the permitting requirements in place at that time.

I am aware that Granum Colony has applied to construct a new chicken barn (Application LA20014) and is in the process of finalizing an application for other poultry species (Application LA20024) on the SE 25-11-28 W4M which is adjacent to the quarter section of the proposed feedlot (SW 31-11-27 W4M). I am not aware of other livestock facilities that might be considered in this area.

Proximity to existing residences and curtailing settlement of future generations

Barry and Casey Arnestad

- *Feedlot proposed on doorstep of existing residences*
- *Feedlot would dictate how neighbouring land is used in the future. Large portions of surrounding lands would be ruled out to build new residences for the next generation*

Eleanor, Shelby and Guy Biddlecombe

- *Feedlot 660 m from the house and 66 feet (20 m) from property line*

Don Chatterton

- *Grandchildren are interested in settling in area on subdivided land currently under Mr. Chatterton's ownership*

Mike Hart

- *Land is 880 yards (804 m) away from proposed CFO*
- *Son considered building in this area*

Allan Minor

- *Very close to the home*

Kyla Minor

- *Residence has been there for 110 years, four generations*
- *Is planning on taking over from father*

Judy Minor

- *CFO proposed 659 m away from the house and much closer to property line*

Byron Westwell

- *Just bought the place. Did not anticipate to deal with a potential CFOs so close to residence*

Dixie Lee White

- *Unfair to those living close to proposed CFO*

Approval officer comments and conclusions:

The MDS setback is an important tool under AOPA for mitigating the nuisance impacts of CFOs on neighbouring residences. Under Schedule 1, section 2, Standards and Administration Regulation, the MDS is measured from the “outside walls of neighbouring residences (not property line)” to the closest manure storage facility of the proposed CFO. In other words, the MDS is a setback to neighbouring residences and is based on various factors including the number of animals and the zoning of the land on which a residence is located.

Under section 3(1) of the Standards and Administration Regulation, an approval officer may not issue a permit for a CFO unless it meets the MDS requirement in section 3. Under sections 3(2) and (3) of that regulation, the MDS must be calculated using the formula in Schedule 1 of the regulation, but must be at least 150 m.

As submitted, the construction plans show that the required MDS can be met. However, it is not clear from what point the MDS was measured. Measurements from aerial pictures indicate that the MDS to the residence to the south is extremely close. Having said that, it is somewhat difficult to measure distances of unconstructed facilities until physical location markers have been installed. Based on the information I have, I presume that the MDS can be met, however, I would require a survey, conducted by a professional surveyor, to provide conclusive proof that the MDS has been met.

Generally, AOPA does not prevent residential developments from being established adjacent to or within the MDS of a CFO, however subdivisions and residential developments are under the jurisdiction of the municipality that has their own requirements and regulations dictating their approval.

Nuisance impacts (dust, noise, odor, flies) and effect on health of humans, cattle, and horses; air quality, and enjoyment of property

Barry and Casey Arnestad

- *Nuisance impact has huge impact on living conditions*
- *Not appropriate to build feedlot on footstep of existing residences*

Eleanor, Shelby and Guy Biddlecombe

- *No studies done on long term impact of dust, noise, odor on neighbours*
- *Dust created from traffic jeopardizes the health of calves (pneumonia) on adjacent pastures*
- *Proximity of house to the CFO guarantees continuous odor and fly infestations.*
- *Continuous traffic does not allow for quiet time, greatly reducing living conditions*
- *Disease transfer from CFO to cattle through flies poses biosecurity concern*

Dean Challand

- *Air quality. Located in downwind of prevailing wind direction*

Don Chatterton

- *Odor will overpower smell of the land*
- *With prevailing winds will cause odor issues for the town and surrounding residences 2/3 of the year*
- *Fly infestations*
- *Great impact on enjoyment of life*

Joy Chatterton

- *Hopes of grandson settling across from proposed site would not be viable*

L. Jensen

- *Loss of enjoyment of life*

Judy Minor

- *Nuisance impacts will greatly affect living conditions, enjoyment and quality of life will be gone*
- *Possible negative impact on health*
- *Increase of stable fly populations will increase nuisance to horses in close-by pasture which will respond by running through fences. No other pasture available*
- *Continuous truck traffic with dust and noise*
- *Proximity to feedlot will cause constant odor. Nobody wants to come and visit*
- *Impact on herd health through disease transfer*
- *Flies create a huge mess. Who is cleaning this up*

Nolan and Kacey Cotter

- *Nuisance impacts would be unbearable*

Mike Hart

- *Constant smell*

Pam Heyland

- *Smell. Resides directly downwind*

Allan Minor

- *Traffic will create a constant dust cloud at the house and adjacent pasture. Went through that during drilling activities in the area. Great impact on herd health with high calf mortality*

Judy Minor

- *Catch basins too close to property line*
- *Dust from traffic will cause livestock fatality due to illness. Jeopardizes livelihood*
- *Young families in area would be subjected to unhealthy conditions*
- *Huge odor impact on town and surrounding neighbours downwind of prevailing wind direction*
- *Persistent odor will effect physical and mental health*

Kayla Minor

- *Prevailing winds will blow constant dust towards the cattle pasture*
- *Resides not even ½ mile away from feedlot. Odors and flies would not allow sitting on the deck during summer*
- *Peace and quiet of the ranch will be gone. Not suitable to raise a family*
- *Night sky will be lit up by the feedlot lights*
- *Disruptive noises will come night and day*

Byron Westwell

- *Exposure to odor 6 months of the year*

Dixie Lee White

- *Regardless of wind and direction, a 4,500 head feedlot will create overwhelming smell*

Approval officer comments and conclusions:

AOPA's minimum distance separation (MDS) requirements are a proxy for minimizing odors, flies, and other nuisance effects from CFOs. The proposed CFO can meet the MDS to all neighbouring residences although proof, prepared by a professional surveyor, would have to be provided to ensure the MDS requirements have been met. Typically, it is presumed that

nuisance effects from the CFO facilities are acceptable if the MDS has been met.

Consulting weather data from several websites including weatherspark and meteoblue, it seems that the predominant wind direction in the area of Claresholm is from the west, west-southwest and southwest direction for most of the year. The wind rose also showed that the winds blow from all directions for some portion of the year, but blow for the shortest time from the NNE to SE quadrant. Therefore, some odor impacts may be experienced downwind, potentially including the Town of Claresholm.

Nuisance and other impacts outside of the MDS for a CFO are not typically considered when an application is being considered unless there is a direct and adverse impact greater than what may be normally considered, which can be directly linked to the application. That said, an approval officer must also consider the effects on the community in their decision. It is my opinion that these nuisance and health concerns are relevant to my consideration of effects on the community in this case (see appendix D below).

It is true that there will be odors resulting from the land application of manure. These odors are normally of short duration and typically occur once or twice per year. In order to limit the nuisance impact of manure application on direct seeded or tame forage land, section 24 of the Standards Regulation precludes manure spreading without incorporation within 150 m of residences. Manure that is spread on conventionally tilled land must be incorporated within 48 hours. Setbacks and incorporation can help to minimize normal odors from manure spreading. Incidences of non-compliance can be reported to the NRCB's 24 hour a day reporting line (1-866-383-6722 or 310-0000 toll free line).

Several of the respondents were concerned about the level of dust resulting from constant road traffic past their property. From past experiences, the respondents anticipate a severe impact on the health of their calves that are raised on the pastures along the access road to the CFO. To minimize dust development, the operator has the option to enter into an agreement with the MD to treat the specific sections of the road. Granum Colony has not included any agreements with adjacent neighbours to address this concern and mitigate the development of dust due to the increased traffic.

One of the respondents was concerned about light emissions from the feedlot. The MD of Willow Creek has no specific policies associated with a dark sky initiative. Apart from the fact that this is outside of the scope of AOPA, it is hard to assess to what extent light fixtures at the feedlot would disturb the experience of night skies in this area. Although it cannot be excluded that there will be an impact on adjacent neighbours, it will likely not extend far beyond the immediate area. Granum Colony has not responded to this concern and has not committed to any measures regarding light emissions.

Fly infestations were also a concern voiced by several respondents. As per section 20(1) Standards and Administration Regulation, an owner or operator of a CFO must employ reasonable measures to control the level of infestation of flies at a location occupied by the operation. Incidences of unreasonable fly infestations can be reported to the NRCB's 24 hour a day response line (1-866-383-6722 or 310-0000 toll free line).

Surface water contamination through runoff, and groundwater contamination

Barry and Casey Arnestad

- *Adequate runoff control for this location problematic*
- *What if efforts to retain runoff fail and runoff enters Meadow and Willow Creek.*
- *Potential seepage of manure constituents into groundwater can't be undone*

Eleanor, Shelby and Guy Biddlecombe

- *Feedlot on hillside that drains into year-round creek, and a spring-fed dugout*
- *Runoff and seepage highly likely. Cannot afford the dugout to get contaminated. It is the only water source for the cattle herd.*
- *Currently, ditches fill with water and drain into Meadow Creek. High likelihood that runoff during spring snow melt will carry manure contaminated runoff into creek*
- *Dugout feeds into lake on NW31-11-27 W4 – also spring-fed. Contamination will travel along the creeks into the Oldman River*

Don Chatterton

- *Runoff likely to occur due to slope of the land*
- *Meadow Creek already high in E.Coli*

Dr. Vonda Chatterton

- *Contamination of Meadow Creek. Creek already high in E. coli*

Joy Chatterton

- *Slough to the north always full. Receives drainage from the proposed site, risk of contamination*
- *Risk of contamination of the creek system during floods and spring runoff*

Nolan and Kacey Cotter

- *Has high potential to contaminate Meadow Creek.*
- *Could affect our wells through seepage*

Dean and Nicole Dunand

- *Runoff will contaminate the creek system*

Mike Hart

- *Contamination of the creek system. Need clean water for cattle*
- *Are with porous soils will cause contamination of aquifer. Has happened before with a septic system*

E. and N. Jensen and R. and H. Jensen

- *Water contamination during flood events*

L. Jensen

- *Area with large runoff volumes during snow melts will contaminate water source*
- *Water quality*

Allan Minor

- *Greatly concerned about runoff and contamination of Meadow Creek that provides drinking water*

Judy Minor

- *Feedlot proposed on hill. Will cause runoff and contamination of water and land*
- *Great possibility of runoff reaching all surrounding water sources (creek, lakes, dug outs)*

Kayla Minor

- *Runoff will cause contamination of wells and creeks which are used domestically and for livestock*

Byron Westwell

- *Slope of the land promotes runoff into nearby creek. Contamination will spread throughout the creek system*

Dixie Lee White

- *What happens to all the people depending on Meadow Creek as a water supply if it is contaminated*

Approval officer comments and conclusions:

Surface water contamination:

The total volume of the catch basins proposed in this application meet the storage capacity calculated to accommodate at least a one day rainfall that has a one in 30 year probability (section 19(2) Standards and Administration Regulation). The feedlot area, using the catch basin calculator with rain fall data from Nanton (closest area to Claresholm available in the catch basin volume calculator), requires a runoff storage volume of 5466 m³. Two of the catch basins can each hold 2,270 m³ at freeboard level, one catch basin can hold 4,168 m³. Therefore, the total storage volume is calculated to be 8,708 m³. This is in excess to the required 5,466 m³ and will help to alleviate the possibility of an overflow. Because the runoff control catch basins exceed the AOPA runoff storage requirements, the risk of surface water contamination is presumed to be low.

Groundwater contamination:

The catch basins are proposed to be constructed with a synthetic liner which provides greater groundwater protection than required by AOPA. Further, if a permit is issued, a condition will be required to ensure that the liner is installed in accordance with the liner manufacturer's requirements. Therefore, the risk to groundwater is considered low.

The feedlot pens also meet the AOPA requirements for groundwater protection. A discussion of the proposed liner for the pen area of the feedlot can be found in Appendix D below.

Water quantity

Barry and Casey Arnestad

- *Source of water unclear. Feedlot will need a lot of water, also for dust control.*
- *Because no surface water available, will drill well?*
- *Groundwater could run dry, affecting livelihood of neighbouring farms*
- *How can they think about building without having water*

Eleanor, Shelby and Guy Biddlecombe

- *First well already run dry. Drilled second well in 2015, 200' (61 m) deep, producing 2.5 gallons per minute. Hard to find groundwater that provides enough quantity. Uses carefully*
- *Not everyone in neighbourhood found groundwater and has to haul*
- *A water use in the magnitude of 75-100,000 cubic meter will drain all surrounding wells*

Don Chatterton

- *Granum Colony has no licence to divert water from Meadow Creek and moratorium placed on this creek*
- *Willow Creek has lower flow levels during winter since Pine Coulee was built. Freezes fully in winter. Not a reliable source of water*

Joy Chatterton

- *Despite Pine Coulee Dam, water levels can be extremely low on Willow Creek requiring an additional source of water*
- *Use of water from wells will certainly affect surrounding users of wells*

Mike Hart

- *Water supply is unclear. Existing water (3+/- acres easement) not sufficient*

Pamela Heyland

- *Is already experiencing water supply issues.*

Judy Minor

- *Creeks run low, particularly in dry years. If water was used for feedlot, this would jeopardize everyone else's livelihood*

Dixie Lee White

- *Water supply is already a problem*

Approval officer comments and conclusions:

Alberta Environment and Parks (AEP) is responsible for licencing the use of surface water and groundwater in the province. Water users that do not hold an AEP water license have to obtain a water license from AEP. 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 page 4 of Technical Document LA16046. See also NRCB Operational Policy 2016-7: *Approvals*, part 8.10.) Granum Colony's application includes a signed declaration indicating that Granum Colony will be applying for a licence under the *Water Act* separately to applying for an AOPA permit.

The email response from AEP on June 17, 2020 confirmed that a water license is required and stated that they had not yet received an application for a water licence. In a follow-up email provided by the agent of Granum Colony on July 20, 2020, the agent said that AEP had indicated that water rights are available and sent an additional follow-up on August 24, 2020.

Traffic

Barry and Casey Arnestad

- *Local infrastructure cannot support heavy traffic. Feedlot large distance away from crop and manure spreading lands.*
- *Roads don't have capacity – traffic intensity and road construction. Already a problem*

Eleanor, Shelby and Guy Biddlecombe

- *Feedlot traffic will use municipal roads and bridges that were not built for such traffic*
- *Bridges already damaged due to heavy load trucks*
- *Roads would have to be upgraded and widened to support traffic. Who would pay for that?*
- *Regular flooding damages bridges - unsuitable for crossing*
- *Safety concerns due to often under-age and inexperienced drivers operating colony-trucks*

Dean Challand

- *Gravel roads not suited for such traffic*

Don Chatterton

- *All bridges in area flood several days and cannot be used for weeks or months*
- *Roads have extremely soft shoulders*
- *Soils used to construct roads render them unsuitable for heavy traffic*
- *Roads too narrow for two lane traffic. Fatalities already occurred*
- *Bridges cannot support heavy loads, weight restrictions in place*

Nolan and Kacey Cotter

- *Area cannot be accessed during floods*
- *Bridges don't have capacity. Would need to use alternate roads*

Dean and Nicole Dunand

- *Heavy truck traffic will deteriorate roads*

E. and N. Jensen and R. and H. Jensen

- *Impact on traffic on road conditions*
- *Increase of taxes to offset MD costs for road maintenance*
- *Road safety*

L. Jensen

- *Heavy duty and volume of traffic - road conditions poor due to ground conditions*
- *Certainty of increased taxes for road maintenance, no alternate routes available*

Allan Minor

- *Infrastructure, roads and bridges, is not setup for that traffic (volume and weight)*

Judy Minor

- *Roads and bridges can't handle the volume and weight of traffic*

Fred Lozeman

- *Long haul routes increase risk to accidents and public safety*

Byron Westwell

- *Roads are already deteriorating quickly with current traffic. Not suitable for an increase in heavy duty traffic*

Dixie Lee White

- *Increase in traffic will further deteriorate the roads*

Response from the applicant (prepared by the agent on Granum Colony's behalf)

The response did not directly address the concerns brought up by the directly affected parties and was addressed to the MD as previously identified.

Approval officer comments and conclusions:

The concerns raised by the directly affected parties are similar to those raised by the MD of Willow Creek. As stated above, the applicant committed to restrict hauling of manure and feed to the vicinity of the proposed site. Granum Colony also listed manure spreading lands that do not require crossing of any bridges mentioned in the response of the MD, and committed to limit hauling distances. In addition, the commitment also included a specific number of trucks required to populate and depopulate the feedlot.

The NRCB does not have direct responsibility for regulating road use. Section 18 of the *Municipal Government Act* gives counties "direction, control and management" of all roads within their borders. Because of this it would be impractical and inefficient for the NRCB to attempt to manage road use through AOPA permits. (See Operational Policy 2016-7: *Approvals*, part 8.9.), however, I considered this issue under effects on the community (see Appendix D below).

Impact on local wildlife

Barry and Casey Arnestad

- *Area supports abundant wildlife.*

Eleanor, Shelby and Guy Biddlecombe

- *Meadow Creek is a fish bearing stream. Any contamination will jeopardize fish habitat.*

Mike Hart

- *Habitat for an abundance of wildlife*

Approval officer comments and conclusions:

AOPA and its regulations do not address requirements relating to other land uses, including natural habitat for wildlife. Looking at available information from AEP, it appears that the quarter section in question is not identified as critical habitat for any endangered species, however it is classified as a key wildlife and biodiversity zone. Nevertheless, the area is currently used as hay land and therefore in agricultural production and not a natural habitat.

Based on information gathered from several AEP websites (including the Code of Practice for watercourse crossings), it seems that for a minimum of two miles upstream of the confluence of Meadow Creek and Willow Creek, Meadow Creek is a water body classified as class C with a restricted activity period from April 1 – July 15. This restriction indicates that Meadow Creek has significance as fish habitat. In addition, Meadow Creek is also an important tributary to Willow Creek which is of regional aquatic environmental significance.

The catch basins proposed in the application exceed the AOPA runoff storage volume requirements. I therefore presume that the risk of manure contaminated runoff from the feedlot pens entering Meadow Creek is low.

Siting of the Feedlot – flood plain, suitability of soils, best management guidelines, environmental impact

Eleanor, Shelby and Guy Biddlecombe

- *Regular flooding of Meadow Creek. Granum Colony aware, and consulting company confirmed, that area prone to flooding*

Dean Challand

- *Extreme flood events (2013, 2005, 1996) do not allow access to feedlot during that time – complete cut off. Animals will suffer*

Don Chatterton

- *Regular severe flooding of the creeks (100 year floods) (1995, 2005, 2013, 2014)*
- *Flooding will not allow access to feedlot, animals cannot be trucked out in time. Attempts might result in accidents*
- *A dam, built by PFRA on Meadow Creek was washed out.*
- *Very porous soils in area with lot of gravel. Attempts to build fresh water reservoirs in area failed*
- *Proposed location close to Carmangay channel*
- *Great likelihood that the low spot in NW corner of quarter is a thin layer of sandstone and gravel*
- *Gravel pit to west*
- *Slope of the land too steep, promoting runoff*

Joy Chatterton

- *Soil prone to erosion. Can they support the catch basins?*

Nolan and Kacey Cotter

- *No access during flooding times*

E. and N. Jensen and R. and H. Jensen

- *Area flood prone by Meadow Creek*

L. Jensen

- *Location too close to creeks*

Allan Minor

- *Located in flood plain*

Judy Minor

- *Disregard of the Environmental Manual for Feedlot Producers in Alberta on many levels*
- *Located in flood plain*
- *Guideline recommends to build lower than surrounding water sources. Feedlot will be higher in elevation than anyone else.*

Fred Lozeman

- *Distance between feedlot and manure spreading lands will cause large environmental footprint due to large distance transportation and does not meet industry average or standards*

Byron Westwell

- *Construction will interrupt natural drainage*

Location in a flood plain

As mentioned above, the “MD of Willow Creek Environmentally Significant Areas – Feb 1989” report depicts the area as part of a flood plain. To verify this assessment, I inquired with AEP if the proposed CFO is located within a flood plain. In his response, the representative explained that this depends on the elevation difference of the final grade of the facility and the normal water flow in Meadow Creek. The elevation difference should be >2.3 m for the facility not to be located in a flood plain or flood prone zone. 2.3 m is the highest water level Meadow Creek reached during the 2013 flood. To ensure that the application can meet the AOPA requirement of being a minimum of one meter above the 1:25 year maximum flood level and if that cannot be determined, a minimum of one meter of the maximum flood level (section 8, Standards and Administration Regulation), I requested Granum Colony to measure the elevation difference between the normal water level of Meadow Creek and the elevation of the catch basins. The catch basins are the closest facilities to Meadow Creek. The topographic map that was provided shows that the normal water level of Meadow Creek on July 2020 was at 1,003.35 m. The lowest elevation of the catch basin closest to the creek seems to be at above 1,006.67 m. With that it is more than 2.3 m above the anticipated highest flood water level and meets the minimum elevation where run-on from the highest known flood level can come into contact with the storage manure (section 8(2)). With this information, together with the overall natural landscape I observed during my site visits, I am on the opinion that this requirement has been met and the risk for the CFO to be flooded is minimal.

Suitability of soil material as liner and structural integrity of catch basins

Please see Appendix D for a discussion of the proposed liner of the feedlot pens.

The proposed catch basins are not exposed to the water pressures and currents a dam typically would be. The topographic map on page 43 of Technical Document LA20004 indicates that the walls of the catch basins are not constructed but dug into the ground. The structural stability of these catch basins can therefore not be compared to a dam. In addition, in order to place the synthetic liner, the ground will be compacted, further increasing ground stability. I trust that the engineering of the proposed catch basins is adequate to withstand scouring of any ground water flows or flood waters, should they ever reach as far as the proposed catch basins. In addition, the catch basins would require a post construction report, prepared by a professional engineer, to ensure structural integrity as well as proper liner installation.

Industrial guidelines

One of the respondents provided a brief calculation of the potential impact on traffic volume due to manure hauling to the manure spreading lands listed in the application. Since that time, Granum Colony has changed the proposed lands, taking out more distant lands. Six of the most

current proposed manure spreading lands are located about 4 miles southeast of the proposed CFO and along Meadow Creek road. One is located about 4 miles east. This significantly reduced the overall total hauling distance. I would presume that these distances are within the range of distances covered by other feedlot operations.

Environmental impact – CO₂ emissions

One of the respondents was concerned about the increase in CO₂ emissions due to the long distance haul routes. CO₂ emissions are outside of the AOPA regulations, however, as discussed earlier, Granum Colony has since proposed new manure spreading lands located closer to the CFO. I would presume that these distances are within the range of distances covered by other feedlot operations and therefore within the range of emissions as produced by other cattle CFOs.

Manure spreading Lands

Don Chatterton

- *Lands listed for manure spreading are largely not suitable, not under Granum Colony's ownership, double listed or not usable to the extent indicated*

The Manure Characteristics and Land Base Code, referenced in AOPA, lays out the required land base for manure application for all livestock types. The calculation considers several factors, including the amount and nutrient content of the type of manure, as well as the soil zone in which manure is proposed to be applied.

Since the application was made available for public viewing, Granum Colony has changed the list of manure spreading lands four times. As part of the decision making process, I evaluated the manure spreading lands listed by Granum Colony in their last submission (see page 20 and 21 of Technical Document LA20004). Granum Colony requires 698.4 acres of irrigated land or 1389.9 acres of dryland. Aerial pictures as well as a site visit indicated that there are several areas that show high salinity levels or are very close to Willow Creek. These areas were subtracted from the usable land base. The land base requirement has been met. This land base has to be available for the first year following granting of the application (section 24(2), Standards and Administration Regulation). Having said that, the lands were selected based on proximity in order to minimize long distance hauling and strain on the MD road system. However, the naturally occurring high salinity levels will limit the use of these lands for manure application (section 25(3) Standards and Administration Regulation) and will impact the manure hauling routes over time.

The same respondent also pointed out that there are other restrictions in respect to suitability for manure application. He pointed out that the SE 20-11-27 and SE 21-11-27 quarters have drainage tiles of which one is connected to Willow Creek, and the other one drains into his land. He also pointed out that these quarter sections have fairly steep slopes and are hay lands which precludes incorporation of manure.

Installation of drainage tiles that are connected to a surface water body, in this case Willow Creek as claimed by Mr. Chatterton, would require approval from AEP. Upon inquiring with AEP if an approval for these land locations was issued, I was told that, there are no records on file that confirm the approval for drainage tiles at these quarters.

However, I confirmed during a site visit, that the land is currently under a multi-annual crop and manure would not be incorporated under these circumstances. This has great potential to cause

manure contaminated runoff. Therefore, Granum Colony would have to ensure that no manure contaminated runoff leaves these quarter sections.

Impact on property value

Eleanor, Shelby and Guy Biddlecombe

- *Current property prices will fall*
- *Land will become worthless for non-colony buyers, will have to sell to colony under value because it is useless to everyone else*

Judy Minor

- *Property value will go down.*

Nolan and Kacey Cotter

- *Decrease in property value*

Mike Hart

- *Property value will be impacted*

L. Jensen

- *Land value*

Allan Minor

- *Decrease in property value. Nobody wants to live next to a feedlot*

Kayla Minor

- *Negative impact will decrease property value*

Dixie Lee White

- *Negative impact on property value*

Approval officer comments and conclusions:

In previous board decisions the NRCB's board members have consistently stated that concerns regarding effects on land or property values are "not a subject for [the board's] review under AOPA or for approval officers' consideration." 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., RFR2017-11/BA17002 at 6).

General concerns

Don Chatterton

- *Incidences of spray-drift causing damage to crops, rocks thrown into grass land causing damage to equipment, letting cattle run loose and not looking after them, free running cattle damaging crops*

Joy Chatterton

- *Rocks thrown onto neighbouring fields caused damage to mower, broken gate posts due to large equipment, damage to fences, application of pesticides in windy conditions caused exposure of family members and horses*

E. and N. Jensen and R. and H. Jensen

- *Large corporation operates on expense of small land owners*
- *Other options available*

L. Jensen

- *Other areas more suitable*

Allan Minor

- *Granum Colony has other options while people already living here don't. Why do they built their residences upwind but want to expose people here to the smell*

Judy Minor

- *Granum Colony inconsiderate towards other people and their livelihoods*

Approval officer comments and conclusions:

- a) Future expansion
Any further expansion of the feedlot will require another application to the NRCB, and will be dealt with on its own merits.

- b) Unneighbourly behaviour

If a person or party 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. Neighbours and concerned parties can also call any NRCB office during regular business hours if they have questions about permit conditions or ongoing AOPA operational requirements.

Other operational issues such as damage to property not owned by the operator would probably best be resolved between the parties involved or reported to respective agencies.

Other options

AOPA does not require an applicant to justify a selected site for a proposed development relative to other possible sites, but rather only that the proposed site is able to meet the various requirements of the legislation. I therefore did not consider other possibilities and looked only at the proposal before me.

Appendix D: Effects on the community and the appropriate use of land

Section 20(1)(ix) of AOPA requires an approval officer to consider the effects on the environment, the economy and the community and the appropriate use of land.

As pointed out in NRCB Board Decision 2015-01 *Folsom Dairy Ltd.*, community impacts overlap with, but are broader than, “appropriate use of land” and should include broader considerations that take into account the “totality of the impacts, both positive and negative, on the citizens living and working in proximity to the CFO” (p 7). There are several issues arising from this application that warrant a closer look at effects on the community. These include – as mentioned above – traffic including road infrastructure, nuisance impacts and the general effects the development would have on the community in respect to community development.

The municipality and all respondents to this application commented on the impact of this development on the local road system. The concern also included, that this increase in traffic will have a significant impact on property taxes. In addition, other economic considerations were also brought forward. However, in this case, I would like to focus on the anticipated increase in taxes which is an assertion that seems likely to occur based on the comment from the reeve (see below). In addition, as pointed out by a few of the respondents, there is the potential that dust negatively affects herd health which forms an essential part of the livelihood of the neighboring ranching operations.

As mentioned by several directly affected parties, the establishment of this CFO would directly affect livelihoods and succession planning of local ranching operations that have been in family hands for generations. As pointed out, future generations showed clear intent of taking over farms and to continue this family tradition that has been contributing to the preservation of the current landscape.

In a previous board decision, Decision 03-01 *Goldcrest Farms* (pp 26-27) the Board noted that in that specific case, no concerns about effects on either, the economic or community impacts of the project, were raised by the two local governments that were affected. In *Goldcrest Farms*, the Board found that effects on the community had been adequately dealt with. In comparison, in this case, the MD of Willow Creek clearly stated that an NRCB approval will have long term economic effects on the community. As the reeve, Maryann Sandberg, stated:” ... an approval for this development can be issued which will create millions of dollars of necessary infrastructure construction and decades of increased maintenance costs to facilitate an operation which can be more efficiently located on other lands which are adequately served by municipal and provincial infrastructure”.

In my analysis, I also considered a letter received from Mr. Glen Alm, chair of the municipal planning commission which was received in response to Application LA20014 by the same applicant. The letter also directly references Application LA20004. For this reason I will discuss his response. In his letter, Mr. Alm pointed out that it is not beneficial for a municipality to look at individual developments instead of considering all proposed developments as a whole. Together, the chicken barns (Applications LA20014 and LA20024), the feedlot and the residential development of which the MD had no prior knowledge, would have considerable impacts on neighbouring properties, far beyond the MDS.

Based on these comments and concerns brought forward by the citizens in this area, the MD and other authorities, I came to the conclusion that the effects on the community are not trivial, rather that there are negative impacts to the community from the proposed CFO which will likely have a direct and longer term impact on the community.

It is my opinion that the effects on the environment can and have been addressed by the application. However, the effects on the community together with costs associated with needing to upgrade important transportation infrastructure would result in a negative impact on the MD's economy. Additionally because the existing transportation infrastructure is inadequate to support this proposed CFO, that it is also not an appropriate use of the land.

APPENDIX E: Recommendation of conditions in Approval LA20004 if a permit was issued

If following a review of this decision by the Board this decision is overturned and a permit granted, I would propose that the following conditions be considered for inclusion in the permit:

a. Construction Deadline

Granum Colony proposes to complete construction of the proposed new feedlot and catch basins one year after approval. Considering unforeseen weather events or other circumstances, this time-frame seems short for the proposed scope of work. I would therefore recommend that it be extended to December 31, 2023.

b. Groundwater protection requirements

Granum Colony proposes to construct the feedlot pens with 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.

The engineering company, retained to conduct the assessment, measured the hydraulic conductivity of the protective layer by installing, as initially reported 4 – 6 monitoring wells with a total of 10-16 boreholes and later corrected to a total of 2 monitoring wells with a total of 6 boreholes at the time of borehole drilling.

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.

As laid out in the report, the in situ measurement was 1.7×10^{-7} cm/sec in borehole 1 (north of proposed feedlot area) and 3.8×10^{-7} cm/sec in Borehole 6 (area of proposed catch basins). This value is below the maximum value in the regulations. The calculation presented states that 1.5 m of the materials in borehole 1 would be equivalent to 8 m of materials with a hydraulic conductivity of 1×10^{-6} cm/sec and equivalent to 4 m of materials with a hydraulic conductivity of 1×10^{-6} cm/sec in borehole 6.

Therefore, it appears that the proposed naturally occurring protective layer would meet the hydraulic conductivity requirement in the regulations. However, drilling in the area of the proposed feedlot pens showed inconsistent layers of sandy silt materials and clay till material at various depths. From the elevation scheme (page 43 of Technical Document LA20004), it appears that the area to the east and southeast would be excavated to reduce the elevation by up to 3 m while the area in the northwest would be filled in to come up to the final grade. The boreholes drilled are therefore not truly representative of the final natural occurring protective layer present in the feedlot area. This is critical on the east side of the pen area, where material will be removed. It seems that up to 3 m will be removed from the area of borehole 5, which leaves approximately 1.5 m of the tested clay till layer. Although the equivalency calculation presented in the report enclosed in the Technical Document show that 1.5 m of this material represent between 4 m (borehole 6) and 8 m (borehole 1) of material as required under the regulations, it is inevitable that cattle would erode the remaining 1.5 m soil material, and that pen cleaning activities would slowly remove liner material over the years. Hence, the area around borehole 5, although presenting a suitable protective layer at time of construction, has the potential to lose suitability over time.

Borehole 3 shows the same clay till material in the upper 0.15 m to 2.5 m. However, the elevation scheme shows that in some areas up to 2 m of soil material will be lost due to landscaping. The clay till layer is underlain by a sandy silt layer to drilling depth (3 m). Hydraulic conductivity testing was not undertaken for that soil type. It is therefore not clear if the AOPA groundwater protection requirements have been met. Upon inquiry, the signing engineer responded that testing the clay till layer is appropriate because it is the predominant soil type throughout the proposed site while the sandy silt layer and gravel are localized occurrences.

In addition, the soil profile description presented in the report also shows that borehole 2, located in the northwest part of the proposed feedlot area, has a sandy silt layer from 0.15 m to 3.3 m, overlaying clay till to a depth of 7.5 m. Hydraulic conductivity testing was not done to determine the hydraulic conductivity of the material. Looking at the topographic map on page 42 of the technical document, it appears that this area will receive up to 2 -3 m of soil to bring the feedlot area up to final grade. However, it is not clear what material will be used to ensure AOPA groundwater protection requirements can be met.

To provide assurance that the as-built feedlot adequately protects groundwater, Approval LA20004 should include a condition requiring Granum Colony to provide an engineer's completion report, certifying that the feedlot can meet AOPA's groundwater protection requirements in all areas of the feedlot after construction.

c. Post-construction inspection and review

The NRCB's general practice is to include conditions in new or amended permits to ensure that the new or expanded facilities are constructed according to the required design specifications. Accordingly, Approval LA20004 would include conditions requiring:

- a completion report, stamped by a qualified engineer, certifying that the runoff control catch basins had been constructed in accordance with the proposed design. At a minimum the report must confirm that the facility is constructed in the approved location; that the bed preparation is adequate to support the synthetic liner, that the synthetic liner has been installed in accordance with the manufacturer's specifications and that all seams have been properly sealed
- a completion report, stamped by a qualified engineer, certifying that all areas of the feedlot meet the groundwater protection requirements of AOPA
- that the manure spreading lands listed in the last submission will be used to utilize manure produced at this CFO
- That the hauling frequency will not exceed the specified number of trucks to populate and depopulate the feedlot as committed in the submitted response by Granum Colony

The NRCB routinely inspects newly constructed facilities to assess whether the facilities were constructed according to their required design specifications. To be effective, these inspections must occur before livestock or manure are placed in the newly constructed facilities. A condition should also be included stating that Granum Colony shall not place livestock or manure in the manure collection and storage portions of the new feedlot or allow runoff to enter the catch basins until NRCB personnel have inspected the new feedlot and catch basins and confirmed in writing that they meet the permit requirements.