

Decision Summary RA19060

This document summarizes my reasons for issuing Approval RA19060 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document RA19060. 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 December 9, 2019, Christiaan Goselink submitted a Part 1 application to the NRCB to expand an existing dairy confined feeding operation (CFO). The Part 2 application was submitted on April 15, 2020. On April 23, 2020, I deemed the application complete.

The application was delayed throughout May and June 2020 as Mr. Goselink was in the process of purchasing a neighbour's property. The neighbour provided an MDS waiver that was required in order for this application to proceed at the time it was deemed complete.

The proposed expansion involves increasing the permitted livestock numbers from 250 milking cows (plus associated dries and replacements) to 400 milking cows (plus associated dries and replacements), constructing a new barn (151.2 m x 37.2 m), and constructing an extension to a solid manures storage pad (from 48.8 m x 24.4 m to 60.4 m x 24.4 m). The original dairy barn (constructed pre-2002) and existing pens will be decommissioned.

The application also includes construction of a milking facility (54.9 m x 33.5 m). This facility is an "ancillary structure," under section 1(1)(a.1) of the Agricultural Operations, Part 2 Matters Regulation, because it will not be used to store or collect manure or to confine livestock for feeding. Therefore, under section 4.1 of that regulation, this structure does not need to be permitted under the act.

Under AOPA, this type of application requires an approval. (This is one of several types of "permits" issued under AOPA. For an explanation of the different types and when each one applies, see www.nrcb.ca.)

a. Location

The existing CFO is located at NW 31-38-3 W5M in Lacombe County, 5 km south west of Eckville, Alberta. The terrain is gently undulating with a general slope to the south.

b. Existing permitted facilities

The CFO is grandfathered, with a deemed approval under section 18.1 of AOPA. On August 14, 2014, the NRCB completed a grandfathered capacity determination. This determination stated that this deemed approval allows the construction and operation of a 250 milking cow (plus associated dries and replacements) CFO. The CFO's grandfathered status is explained in the August 14, 2014 determination letter. The NRCB has also issued the CFO the following authorizations: RA14009, RA14009A, and RA19044.

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 individuals 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 1.0 mile. (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. Lacombe County is an affected party (and therefore also a directly affected party) because the proposed expansion 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 Lacombe Express on April 23, 2020 and posted the full application on the NRCB website for public viewing. The NRCB also emailed referral letters and a copy of the complete application to Lacombe County, Alberta Health Services (AHS), Alberta Environment and Parks (EP), Alberta Agriculture and Forestry (AF), Alberta Transportation, and Utility Right of Way holders – Diamond Valley Gas Coop and NAL Resources Ltd. A referral letter was mailed to Certus Oil and Gas Inc. Forty-seven courtesy letters were sent to people identified by Lacombe County as owning or residing on land within the affected party radius.

3. Responses from the municipality and referral agencies

I received responses from Lacombe County, AF, AHS, and AEP. No response was received from Alberta Transportation, Diamond Valley Gas Coop, NAL Resources Ltd, nor Certus Oil and Gas Inc.

Mr. Florian Goetz, a development officer with Lacombe County, provided a written response on behalf of Lacombe County. As noted in section 2, Lacombe County is a directly affected party.

Mr. Goetz stated that the application is consistent with Lacombe County’s municipal development plan, and that no other planning-type documents referenced by the MDP apply to the CFO’s area. Mr. Goetz also indicated that the land is designated as an Agricultural “A”

District; however, a number of residences exist within 1,600 metres of the CFO. The application's consistency with Lacombe County's municipal development plan is addressed in Appendix A, attached.

Mr. Goetz also stated that the application is a permitted use under Lacombe County's land use bylaw (LUB) and noted that the application meets all related setbacks.

Al Spink, an inspector with AF, provided a written response on behalf of AF. Mr. Spink indicated that he had reviewed the application, and that he had no concerns.

Mr. Quentin Schatz, a public health inspector with AHS, provided a written response on behalf of AHS. Mr. Schatz indicated that the environmental public health department has no objection to the application.

Ms. Laura Partridge, a water administration officer with AEP, provided a written response on behalf of AEP. Ms. Partridge indicated that additional water licensing is required. The applicant is reminded by way of this decision, as well as Ms. Partridge's email to the applicant, that he is required to obtain the additional licensing and meet all requirements under the *Water Act*. Additionally, the applicant has acknowledged in *Water Act* declaration in Part 2-Technical Requirements of this permit's application form that he is aware a *Water Act* license is required, and that he is responsible for obtaining it.

4. Responses from other directly affected parties

The NRCB received three responses to the application notice (see Appendix B).

All of the three parties who submitted responses own or reside on land within the 1.0 mile radius for affected persons. Because of their location within this radius, they are presumed to be directly affected by the application.

The directly affected parties raised concerns regarding vehicle traffic, nuisances/odours, water quality and quantity, insects, infrastructure placed on neighbouring property, and manure management practices (see Appendix B for further details).

Two parties submitted MDS waivers at the time the application was deemed complete. These parties are automatically considered to be directly affected by the application.

These concerns are addressed in Appendix B.

5. Environmental risk screening of existing and proposed facilities

When reviewing a new approval application for an existing CFO, NRCB approval officers normally assess the CFO's existing buildings, structures, and other facilities, using the NRCB's environmental risk screening tool to determine the level of risk they pose to surface water and groundwater. This tool provides for a numeric scoring of risks, which can fall within either a low, moderate, or high risk range. (A complete description of this tool is available under CFO/Groundwater and Surface Water Protection on the NRCB website at www.nrcb.ca.) However, if those risks have previously been assessed, the approval officer will not conduct a new assessment unless site changes are identified that require a new assessment, or the assessment was done with a previous version of the risk screening tool and requires updating. See NRCB Operational Policy 2016-7: *Approvals*, part 8.13.

In this case, the risks posed by Christiaan Goselink's existing CFO facilities were assessed in April, 2020, as part of application RA19044. According to that assessment, all of the existing facilities posed a low risk to surface water and groundwater, with the exception of the existing EMS. The EMS poses a moderate risk to groundwater and a high risk to surface water; however, the EMS is required to be decommissioned in 2020 as a condition of permit RA14009A.

The circumstances have not changed since that assessment was done. As a result, a new assessment of the risks posed by the CFO's existing facilities is not required.

I also assessed the proposed new dairy barn and solid manure storage pad extension, using the NRCB's risk screening tool, and determined that they both pose a low potential risk to groundwater and surface water.

6. Other factors considered

The application meets all relevant AOPA requirements, with the terms and conditions summarized in part 7.

In addition, the proposed expansion is consistent with the land use provisions of Lacombe County's municipal development plan and with Lacombe County's land use bylaw. (See Appendix A for a more detailed discussion of the county's planning requirements.)

With respect to the act's technical requirements, the proposed expansion:

- Meets the required AOPA setbacks from all nearby residences, with two exceptions (AOPA setbacks are known as the "minimum distance separation" requirements, or MDS). The owners of those residences have signed written waivers of the MDS requirement to their residences. One of the waivers is no longer required at the time of the decision as the applicant has purchased the neighbours' residence.
- Meets the required AOPA setbacks from springs and common bodies of water
- Has sufficient means to control surface runoff of manure
- Meets AOPA's nutrient management requirements regarding the land application of manure
- Meets AOPA groundwater protection requirements for the design of floors and liners of manure storage facilities

I also determined that the proposed dairy barn and solid manure storage pad extension are located within the required AOPA setback from an existing water well. However, as explained in Appendix C, the barn and solid manure storage pad extension warrant an exemption from the 100 metre water well setback due to the well's construction.

In addition, I assessed the effects of the proposed expansion on the environment. Consistent with NRCB policy, I presumed that these effects are acceptable because the application meets all of AOPA's technical requirements and the directly affected parties' concerns have been adequately addressed. I also presumed that the application's effects on the economy and community are acceptable, and that the proposed expansion is an appropriate use of land. Under NRCB policy, these presumptions are based on the application's consistency with the municipal development plan and land use bylaw. (See NRCB Operational Policy 2016-7: *Approvals*, part 8.7.3.) Having considered the information provided by the applicant and gathered in my site visits, as well as input from the county and other directly affected parties, I do not find these presumptions rebutted.

7. Terms and conditions

Approval RA19060 specifies the new permitted livestock capacity as 400 milking cows (plus associated dries and replacements) and permits the construction of the dairy barn and solid manure storage pad extension.

Approval RA19060 also contains terms that the NRCB generally includes in all AOPA approvals, including terms stating that the applicant must follow AOPA requirements and must adhere to the project descriptions in their application and accompanying materials.

In addition to the terms described above, Approval RA19060 includes conditions that:

- Set a deadline of November 30, 2022 for the approved construction to be completed
- Require water well monitoring and reporting (carried forward from RA14009A)
- Require the concrete used to construct the liner of the manure collection and storage portion of the dairy barn to meet the specification for category B (liquid manure shallow pits); and category C (solid manure – wet); in Technical Guideline Agdex 096-93 “Non-Engineered Concrete Liners for Manure Collection and Storage Areas”. The manure collection and storage portion of the solid manure storage pad extension must meet the specifications for category C (solid manure – wet) in the same guideline.
- Require documentation from a qualified third party that the concrete used for the manure collection and storage areas meets the required specifications.
- Prohibit the co-permit holders from placing manure or livestock in the new dairy barn, and manure in the extended portion of the solid manure storage pad until the facilities have been inspected by the NRCB following their construction
- Require the pre-2002 dairy barn and the pens to be decommissioned

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

a. Conditions carried forward from previously issued permits

For clarity, and pursuant to NRCB policy, I consolidated the following permits with Approval RA19060: RA14009A, RA19044 (see NRCB Operational Policy 2016-7: *Approvals*, part 10.5). Consolidating permits generally involves carrying forward all relevant terms and conditions in the existing permits into the new permit, with any necessary changes or deletions of those terms and conditions, and then cancelling all existing permits once the new permit is issued. This consolidation is carried out under section 23 of AOPA, which enables approval officers to amend AOPA permits on their own motion.

Therefore, in addition to containing the new terms and conditions summarized above, Approval RA19060 includes all relevant terms and conditions from RA14009A and RA19044. Construction conditions that have been met are identified and included in an appendix to Approval RA19060.

8. Conclusion

Approval RA19060 is issued for the reasons provided above, in the attached appendices, and in Technical Document RA19060.

Christiaan Goselink's deemed approval and NRCB-issued Authorizations RA14009A and RA19044 are therefore cancelled, unless Approval RA19060 is held invalid following a review and decision by the NRCB's board members or by a court, in which case Authorizations RA14009A and RA19044 will remain in effect.

July 24, 2020

(Original Signed)
Lynn Stone
Approval Officer

Appendices:

- A. Consistency with the municipal development plan
- B. Concerns raised by directly affected parties
- C. Exemptions from water well setbacks and monitoring requirements
- D. Explanation of conditions in Approval RA19060

APPENDIX A: Consistency with the municipal development plan

Under section 20 of AOPA, an approval officer may approve an application for an approval or amendment of 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” of a CFO or manure storage facility, or regarding the land application of manure. (These types of MDP provisions are commonly referred to as MDP “tests or conditions.”)

Christiaan Goselink’s CFO is located in Lacombe County and is therefore subject to that county’s MDP. Lacombe County adopted the latest revision to this plan on August 8, 2019, under Bylaw #1301/19.

Sections 3.9 of the MDP relate to CFOs. Under section 3.9.1(a), the MDP prohibits “new” CFOs within 1.6 km (one mile) from several areas listed in that section.

Christiaan Goselink’s CFO is an existing CFO, and therefore it is not subject to these setbacks. Irrespective, the CFO is outside of these 1.6 km setbacks.

Additionally, section 3.9.1 states that “further restrictions on the development of confined feeding operations may apply as directed by an Intermunicipal Development Plan or other local plans approved by Council.” No intermunicipal or local plans apply to Christiaan Goselink’s CFO.

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

In my view, under sections 1.3.4 and 3.3, the MDP clearly intends to incorporate Lacombe County’s Land Use Bylaw (LUB) #1237/17 (see NRCB Operational Policy 2016-7: *Approvals*, part 8.2.3). Accordingly, I considered the LUB. Under that bylaw, the subject land is currently zoned as Agricultural “A” District. CFOs are not listed as either a permitted or discretionary use within that zoning category. However, section 3.2(2)(j) of the LUB states that CFOs do not require a development permit. I interpret this provision as meaning either that the county intended CFOs to have the same effective status as listed permitted uses, or that the county simply does not intend to address CFOs in its LUB (given that the NRCB’s permitting role since AOPA came into effect in 2002). In its response to this application, the county stated that the CFO is a permitted use, which is consistent with the first of these two interpretations. Under either interpretation, the CFO is not inconsistent with the LUB.

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

APPENDIX B: Concerns raised by directly affected parties

The following parties own or reside on land within the “affected party radius,” as specified in section 5(c) of the Agricultural Operation, Part 2 Matters Regulation, and submitted responses to the application:

Denniece and Richard Crout
NE 38-36-4 W5M

Amanda Safron
½ 25-38-4 W5M

Terry Safron
SW 19-38-4 W5M

Two parties, Tom and DeeAnn Daniels, and Denniece and Richard Crout, had submitted MDS waivers at the time the application was deemed complete. Parties who sign waivers that are required to meet MDS requirements are also considered to be directly affected parties (*Approvals*, 7.12). After the application was deemed complete, the applicant purchased the Daniels’ residence, which eliminated the requirement for the Daniels’ MDS waiver. Therefore, the Daniels’ are no longer presumed to be directly affected by the application, as their MDS waiver is no longer required. The Daniels’ did not submit a statement of concern and did not otherwise seek status as a directly affected party.

The directly affected parties raised a number of concerns which are listed and summarized below, together with my analysis and conclusions:

1. **Vehicle Traffic** - all three parties expressed concerns about the increase in vehicle and heavy equipment traffic, road damage, and unsafe driving practices.

Approval Officer’s conclusions

Traffic on the nearby roadways may increase as a result of the expanded CFO. However, no concerns about a potential increase in traffic, dust, or maintenance costs for these roads were raised by Alberta Transportation (AT) or Lacombe County, who have jurisdiction over the management of these roads.

Several NRCB board panel decisions have made it clear that traffic and road use matters are outside of the approval officer’s purview under AOPA.

2. **Odour and other nuisances from CFO site** - one party expressed concerns about the manure and silage odours from the CFO site, as well as other nuisances.

Approval Officer’s conclusions

AOPA’s minimum distance separation (MDS) is a means for mitigating odour and other nuisance impacts from confined feeding operations (CFOs).

The party that expressed these concerns is within the MDS; however, the party signed a document waiving the MDS requirement to their residence. I followed up with the party throughout the application process and they confirmed that, despite their concerns, they wanted their waiver to stand.

- 3. Insect habitat** - one party identified that they have concerns about “insects that frequently enjoy the farm habitat,” but did not elaborate beyond this.

Approval Officer’s conclusions

With the limited information, it is difficult to determine what impacts the respondent believes the proposed expansion will have on the insect population.

The proposed construction is within the footprint of the existing CFO site. Therefore, no wetlands or green space will be removed for the new facilities.

- 4. Impacts on water** - one party raised concerns about the quantity and quality of water in the area

Approval Officer’s conclusions

Alberta Environment and Parks (AEP) is responsible for licensing and monitoring the supply of groundwater in the province. The water licensing process includes an opportunity for neighbours to provide input. Therefore, for efficiency and to avoid inconsistent regulation, NRCB approval officers generally do not consider water supply concerns when reviewing AOPA permit applications, other than ensuring that applicants sign one of the water licensing declarations listed in the Part 2 application form.

Mr. Goselink’s application included a signed declaration indicating that he requested that his *Water Act* license be processed separately from his AOPA permit. In that declaration, Mr. Goselink acknowledged that he is aware that he that he will need a new water license, and that he undertakes the risk of constructing a CFO if the *Water Act* license is denied.

As noted in the decision summary above, and documented in Technical Document RA19060, the proposed CFO facilities meet all AOPA technical requirements. AOPA requirements do not, of course, guarantee zero risk. Nevertheless, several of these requirements are designed to prevent or minimize manure leakage from CFO facilities and thus to prevent manure from reaching and contaminating groundwater. Because the proposed CFO facilities meet or exceed these requirements, I conclude that the level of groundwater risk posed by these facilities is low.

In an abundance of caution, a water well testing condition was placed on a previous permit for this site. The test conditions are intended to monitor groundwater quality for manure contamination. The monitoring condition will be brought forward and is a condition of Approval RA19060.

- 5. Infrastructure on neighbouring property** - one party stated that an additional power pole was required to be placed on their property in order to support the proposed expansion

Approval Officer’s conclusions

The location of utilities and the associated infrastructure is outside of the purview of AOPA. I would recommend that the respondent discuss this matter further with the appropriate utility organizations and the applicant.

- 6. Property values** - one respondent indicated that they feel this application will reduce their property value

Approval Officer's conclusions

In several review decisions, the NRCB's board members have 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 of permit applications. According to the board, impacts on property values are a land use issue which is a "planning matter dealt with by municipalities in municipal development plans..." *Zealand Farms*, RFR 2011-02, p. 5; see also, e.g. *Pigs R Us Inc.*, RFR 2017-11, p. 6 (stating that effects on land values are "not a relevant Board consideration when the development is consistent with the MDP's land use provisions.")

As explained in Appendix A above, Mr. Goselink's application is consistent with the land use provisions of the county's MDP, and with the county's LUP, which indicate that the proposed CFO expansion is an appropriate land use in the area.

- 7. Manure spreading** - two parties expressed concerns about odour from manure application and the lack of incorporation. The parties also discussed their desire for Mr. Goselink to use an odour elimination product/technology when applying manure. One party was concerned about the effects of the odour on health conditions.

Approval officer's conclusions

Section 24(1) of AOPA's Standards and Administration Regulation requires that, when manure is applied to cultivated land, the manure must be incorporated into the soil within 48 hours. Incorporation of manure not only minimizes nutrient loss, but also aids in reducing odour nuisances.

On forage or directly seeded crops, manure may be applied without incorporation but must not be applied within 150 metres of neighbouring residences, in addition to meeting a number of other setbacks.

Generally, land application of manure is limited to once or twice per year, and are typically of short duration. Odours from manure spreading typically do not persist for extended periods of time.

AOPA does not require the use of manure additives as manure management practices outlined in AOPA (incorporation, setbacks) are intended to mitigate odour.

Any complaints about CFO-related issues can be reported to the NRCB's 24 hour response line (1-866-383-6722) and will be followed up on by an NRCB inspector. Neighbours can call any NRCB office during regular business hours if they have questions about permit conditions or ongoing AOPA operational requirements.

APPENDIX B: Exemptions from water well setbacks

According to the application, one water well is located within 100 metres of the proposed facilities. The well is 81 metres to the solid manure storage pad, and 55 metres to the new dairy barn. I have confirmed this information by a site visit.

Because of this proximity, the applicant's proposed dairy barn and solid manure storage pad extension conflicts with a regulation under AOPA, which prohibits the construction of manure storage facilities (MSFs) or manure collection areas (MCAs) within 100 metres of water wells.¹ However, the regulation allows approval officers to grant an exemption from this prohibition. I must therefore consider whether an exemption is appropriate in this instance.

Under the regulation, the test for granting an exemption is whether the "aquifer into which the well is drilled is not likely to be contaminated" by the proposed MSF or MCA. (According to the regulation, when granting an exemption, an approval officer may require the applicant to implement a "groundwater monitoring program.")

The regulation also makes it clear that the applicant has the burden of proving that an exemption is warranted.

In considering whether an applicant has met that burden, approval officers presume that the risks of direct aquifer contamination from the MSF or MCA are low if the applicant's proposed MSF or MCA meets AOPA's technical requirements to control runoff and leakage. However, when determining whether an MSF or MCA that meets AOPA's technical requirements should be exempted from the 100 metre water well setback requirement, approval officers also assess whether water wells that are less than 100 metres from the MSF or MCA could act as conduits for aquifer contamination.

Approval officers assess the following factors to determine the risk of aquifer contamination via the water well:

- How the well was constructed
- Whether the well is being properly maintained
- The distance between the well and the proposed MSF/MCA
- The estimated water well pumping rate
- Whether the well is up- or down-gradient from the MSF/MCA and whether this gradient is a reasonable indication of the direction of surface and groundwater flow between the two structures

These presumptions and considerations are based on NRCB Operational Policy 2016-7: *Approvals*, part 8.7.1.

Water well ID# 1065104 was constructed in 2007, and has a total depth of 24.38 metres. It was constructed with a surface casing until 14.94 metres, a well casing from 12.19 metres to 24.38 metres, and a drive shoe seal from an unknown point until 13.72 metres. Perforations exist from 16.76 metres to 21.34 metres. The lithology shows brown sandy clay from surface to 9.14 metres, brownish grey sand from 9.14 metres to 13.72 metres, brown shale from 13.72 metres to 15.24 metres, and gray coarse grained sandstone from 15.24 metres to 24.38 metres. The well has a recommended pump rate of 45.46 L/min. I conducted a site inspection and found that

1. Standards and Administration Regulation, Alta. Reg. 267/2001, section 7(1)(b).

the well appeared to be well maintained, with adequate above surface casing and ground mounding.

Water well ID# 1065104 is located 3 metres from the 2014 permitted dairy barn, 81 metres from the 2014 permitted solid manure storage pad, 18 metres from the grandfathered pens, and 31 metres from the grandfathered dairy barn. The well is also located within 100 metres of the 2020 proposed dairy barn, and the 2020 proposed solid manure storage pad extension. The grandfathered pens, and grandfathered dairy barn are proposed to be decommissioned as part of this application.

The proximity of the well was assessed in 2014 when the 2014 dairy barn and 2014 solid manure storage pad were originally proposed. The issuing Approval Officer discussed that an exemption to the 100 metre setback was warranted due to the construction of the well, and the low risk of the facilities. I have reviewed that assessment, and concur with her findings.

In 2016, the NRCB developed a “water well exemption screening tool,” based on the factors listed above, to help approval officers assess the groundwater risks associated with a nearby water well and to decide whether an exemption from the 100 metre setback to a well is warranted.² This tool consists of a two-stage risk screening process; each stage provides a numeric risk “score” based on the information inputted into the tool. The first stage focuses on the well’s construction. If the well scores less than 10 at this stage, the tool suggests granting a setback exemption for the subject facility. If the well scores above 28, the tool recommends denying the exemption. Scores between 10 and 28 require applying the second stage of the screening process, which focuses on the gradient and other factors bearing on the risk of manure runoff or leachate reaching the water well. If the risk score at this stage is over 20, the tool suggests denying the setback exemption to the subject well.

The direction of groundwater flow is unknown; accordingly, I scored the well as such, and allocated 5 points (versus 0) for the groundwater gradient. However, the topography of the site is such that the water well is up-gradient with respect to surface water drainage from the manure storage facilities.

I have assessed water well ID# 1065104 and found that it scored 12 in the first stage, and 11 (for the 2020 dairy barn) and 9 (for the 2020 solid manure storage pad extension) at the second stage, respectively.

Therefore, I find that an exemption for the water well setback is warranted.

In 2014, the issuing Approval Officer placed a water well monitoring testing condition on water well ID # 1065104 to test annually for chlorides and nitrates. The results have shown that from 2014 to 2019, the analyzed parameters met Guidelines for Canadian Drinking Water Quality Maximum Acceptable Concentration values. This condition will be brought forward into Approval RA19060.

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

APPENDIX C: Explanation of conditions in Approval RA19060

Approval RA19060 includes several conditions, discussed below, and carries forward a number of conditions from RA14009A (see sections 2 and 3 of this appendix).

1. New conditions in Approval RA19060

a. Construction Deadline

Christiaan Goselink proposes to complete construction of the proposed new dairy barn and solid manure storage pad extension by December 31, 2021. In my opinion, a timeline that allows for two full construction seasons is more appropriate for the proposed scope of work. The deadline of November 30, 2022 is included as a condition in Approval RA19060.

b. 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 RA19060 includes conditions requiring:

- the concrete used to construct the liner of the manure collection and storage portion of the new dairy barn to meet the specification for category B (liquid manure shallow pits) for the manure pit, and category C (solid manure – wet) for the barn floor in Technical Guideline Agdex 096-93 "Non-Engineered Concrete Liners for Manure Collection and Storage Areas." The concrete used to construct the liner of the manure collection and storage portion of the solid manure storage pad extension must meet the specification for category D (solid manure – dry) in the same Technical Guideline.
- Christiaan Goselink to provide documentation to confirm the specifications of the concrete used to construct the manure storage and collection portions of the new dairy barn and solid manure storage pad extension.

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. Approval RA19060 includes a condition stating that Christiaan Goselink shall not place livestock or manure in the new dairy barn, nor place manure on the solid manure storage pad extension until NRCB personnel have inspected the dairy barn and solid manure storage pad extension and confirmed in writing that it meets the approval requirements.

2. Conditions carried forward from RA14009A

7. Decommissioning of the old EMS must not commence until the new liquid manure storage tank has been constructed, and must be completed within one year of construction completion of the new storage tank, unless otherwise directed in writing by the NRCB.

3. Conditions carried forward from RA14009A and updated under Section 23 of AOPA

8. The permit holder shall sample and test raw groundwater from WW ID#1065104, according to the water well monitoring requirements prescribed by the NRCB in writing. The NRCB may, based on the monitoring results and at its discretion, revise those requirements from time to time, in writing.