NRCB | Natural Resources Conservation Board

BOARD DECISION

REVIEW 2025-02

Review of Approval Officer Decision
Summaries RA23022 and RA23022A

Mitchel and Lindy Kroetsch

May 29, 2025

The Board issues this decision under the authority of the Agricultural Operation Practices Act (AOPA or the Act), following the Board's review of Decision Summaries RA23022 and RA23022A via a written hearing.

1. Background

1.1 Issuance of Approval RA23022 and Subsequent Events

On August 20, 2024, a Natural Resources Conservation Board (NRCB) approval officer issued Decision Summary RA23022 which granted Approval RA23022 to Mitchel and Lindy Kroetsch (Operator), to construct and operate a new beef feeder/finisher confined feeding operation (CFO) located at NW 15-42-16 W4M in Flagstaff County.

Following the issuance of Approval RA23022, the Board received requests for review (RFRs) and a division of the Board consisting of Sandi Roberts, Walter Ceroici and Daniel Heaney was established to consider the RFRs and decide whether a review was warranted.

On September 10, 2024, the approval officer was informed by Mitchel Kroetsch that, during some preliminary trenching work in the area of proposed catch basin 1, he encountered water at a depth of less than 4 metres below grade. Since the proposed catch basins were designed to a depth of 3.5 metres below grade, and as the bottom of the liner must not be less than 1 metre above the water table at the time of construction in accordance with AOPA, the approval officer directed the Operator to delay construction of the catch basin until the next steps were decided, which could include a redesign of the catch basins and submission of an application to amend the permit.

1.2 Board Decision RFR 2024-06 Directing the Review

On September 24, 2024, in Decision RFR 2024-06 / RA23022, the Board directed a review of the Operator's measures with respect to protecting groundwater and surface water quality (Review). Decision RFR 2024-06 / RA23022 explains that other concerns expressed in the RFRs were adequately dealt with by the approval officer and would not be matters for review.

The Board found that the approval officer's original determination that the feedlot pens and catch basins posed a low potential risk to groundwater and surface water and met the technical requirements set out in the AOPA regulations. However, new evidence provided by the Operator suggested that there was a high water table in the feedlot area which could affect the performance of the synthetic liners proposed for the catch basins. A rising water table could potentially compromise the synthetic liner and have a negative impact on groundwater and surface water quality. The Board found that the risk of surface and groundwater contamination,

in view of the new evidence suggesting a high water table, raised questions of environmental risk that required further consideration through a written Review.

1.3 Special Procedural Considerations and Amendment Application

In deciding to conduct the Review on the groundwater and surface water quality issues, the Board recognized that the specific circumstances required special procedural considerations. The Board determined that should the Operator proceed with an application for an amendment to the approval, normal application amendment procedures would apply and affected parties would receive notice and have an opportunity to comment. While existing parties did not need to restate their previous concerns, they could state any specific concerns related to changes to manure storage facilities included in the amendment application. The Board suspended the Review pending further action initiated by the Operator. Any approval officer decision on an amendment application would be open to filing of new RFRs; however, the Board would merge the approval officer decision on any amendment application with the Review.

On October 23, 2024, the approval officer received an amendment application from the Operator which was deemed complete on November 13, 2024 (Amendment Application).

The Amendment Application proposed modifying the dimensions of the two catch basins to shallower depths in order to meet the 1 metre setback to the water table requirement, at the time of construction. The width of both catch basins was increased to provide the required storage volume. In addition, the Operator proposed to construct a barrier around the catch basins to protect the liner.

1.4 Issuance of Approval Amendment RA23022A

On January 31, 2025, the approval officer issued Approval Amendment RA23022A which modified the dimensions of the catch basins. Additionally, a condition was added for the Operator to construct a barrier around the catch basins to protect the liner. The remainder of Approval RA23022, and its terms and conditions, remained in effect.

No RFRs with respect to RA23022A were received by the deadline date of February 14, 2025.

1.5 Designation of Panel and First Request for Submissions

On February 18, 2025, the Chair of the Board designated the panel for the RA23022 and RA23022A Review to be Sandi Roberts (Panel Chair), Laura Dunham and Daniel Heaney. This designation superseded the panel that was appointed on September 9, 2024.

As the Board recognized that the specific circumstances of this Review required special procedural considerations, General Counsel Bill Kennedy, on behalf of the Board, issued a letter to all eligible parties requesting written submissions from them to assist in determining the process going forward (First Request for Submissions).

The written submissions, together with any supporting evidence, were restricted to the Operator's measures relating to maintaining groundwater and surface water quality as identified in Approval RA23022 and Approval Amendment RA23022A.

While not limiting the written submissions of any of the parties within that scope, the Board indicated it would find it helpful if the Operator addressed the following matters:

1. Confirmation of the method used to determine the depth to the water table, why this method was chosen, and the risks associated with using this method.
2. How the catch basins and barrier are expected to protect the quality of the surface water.
3. How the size of the catch basins was determined.
4. Whether the design of the catch basins effectively mitigates any adverse effects that could be experienced with water table fluctuations during the year.
5. How the construction condition requiring a minimum distance of 1 metre from the bottom of the catch basin to the water table at time of construction will be met through measurement and verification.
6. Whether other mitigation measures should be considered during construction to mitigate possible water table fluctuations.

The deadline for the First Request for Submissions was March 17, 2025.

1.6 Responses to First Request for Submissions

Although the Operator had been requested to make submissions addressing the six specific issues above, no response was received from the Operator by the deadline. However, two submissions were received from directly affected parties, Thomas and Heidi Rohe, and Dallas Oberg.

Thomas and Heidi Rohe submitted that the Operator's proposed measures relating to maintaining groundwater and surface water quality had not addressed any of their concerns. They requested that the Board refuse to grant Approval RA23022 and Approval Amendment RA23022A.

Dallas Oberg indicated that he was still worried about groundwater contamination. He also expressed a concern that the Operator was not following the rules, alleging that the Operator had already built a feedlot which was full of cattle.

The deadline to reply to the submissions was March 31, 2025, and none were received.

1.7 Second Request for Submissions

The Board subsequently met and determined that the Review should be based on written submissions. The Board would use the evidence submitted to assess if the proposed measures were adequate to protect both surface water and groundwater quality.

On April 8, 2025, General Counsel Bill Kennedy, on behalf of the Board, issued a letter to all eligible parties. In the letter, the Operator was reminded that it was the Operator's responsibility to satisfy the Board that all AOPA requirements had been met. All eligible parties were invited to make submissions regarding the proposed measures to protect both surface water and groundwater quality. While not limiting the written submissions of any of the parties within this scope, the Board expected the Operator and Field Services to address the following matters in their submissions:

Operator

1. Explain how the construction condition requiring a minimum distance of 1 metre from the bottom of the catch basin to the water table at the time of construction will be met through measurement and verification.
2. Explain how the design of the catch basins effectively mitigates any adverse effects that could be experienced with water table fluctuations during the year. Please address whether a geotextile will be installed under the geomembrane liner as described on page 10 of Envirowest Engineering's October 30, 2024, Site and Soil Assessment (Amended) report for Application RA23022A. The report states that the geotextile can allow for the lateral and upward escape of subsurface water and gases that rise up beneath the geomembrane during its service life. If geotextile is not proposed to be installed, please explain how a potential rise in the water table will be managed to ensure proper functioning of the catch basins.
3. There has been an assertion that the feedlot is built and has been populated with cattle. Have you completed construction of the feedlot pens and catch basins and populated the feedlot with cattle? If so, please provide information on the construction completion date, cattle population numbers, and who authorized the feedlot to be put into operation.

Field Services

1. What evidence does the NRCB accept as proof that the construction condition requiring a minimum distance of 1 metre from the bottom of the catch basin to the water table at the time of construction has been met?
2. Is there a requirement for this Operator to install geotextile, or to do any other mitigative measures, to ensure that a potential rise in the water table does not negatively impact the integrity and function of the catch basins? Please explain why or why not.
3. Have NRCB personnel inspected the site since the Operator informed the approval officer on September 10, 2024, about preliminary trenching work that discovered a higher than expected water table? Please include inspection dates, findings, and provide the Board with evidence including (as applicable) any compliance measures taken, and confirmation of construction in accordance with the terms and conditions of the permit.
4. Please comment on the assertion that the feedlot is built and has been populated with cattle.

The Board indicated that it would make its decision using the evidence that it had received by the submission deadlines.

1.8 Responses to Second Request for Submissions

On April 9, 2025, an email was received from Mitchel Kroetsch. He indicated that on March 12, 2025 he had sent a letter from his engineer to answer the Board's initial six questions and was attaching it again. He also made submissions regarding the construction status of the CFO and the number and type of cattle in the pens. Laura Friend, Manager of Board Reviews, responded that she did not have a record of receiving an email with a letter attached from him or his engineer, Envirowest, on March 12. However, she now had the letter and would distribute it, together with his email, to all the eligible parties, which she did.

On April 14, 2025, a joint letter containing submissions was received from Thomas and Heidi Rohe, Dallas Oberg, Rick Hewson, Nancy Hewson, and Bob and Ruth Burke, who are all directly affected parties.

On April 22, 2025, submissions were received from NRCB Field Services.

No other submissions were received.

The deadline to reply to the submissions was May 1, 2025, and none were received.

2. Issues

The central issues are as follows:

1. Do the Operator's proposed measures, as set out in Approval RA23022 and Amendment Approval RA23022A, meet the AOPA requirements to protect surface water and groundwater quality?
2. If the Operator's proposed measures are inadequate, should the Board refuse to grant Approval RA23022 and Approval Amendment RA23022A, or make another disposition of the application for the proposed CFO that the Board considers appropriate?

3. Party Positions

3.1 Field Services' Position

NRCB Field Services took no position on the outcome of the Review but provided the following information on April 22, 2025 in response to the Board's questions set out in Bill Kennedy's April 8, 2025 letter.

The requirement for 1 metre between the bottom of the liner and the water table "at the time of construction" is legislated at section 9(3)(a) of the Standards and Administration Regulation under AOPA. The relevant conditions in Approval RA23022 are:

> 5. The co-permit holders [Operator] shall immediately cease construction of catch basin 1, and contact the NRCB if the water table is observed to be one metre or less from the bottom of the liner of the catch basin.
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> . . .
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> 9. The co-permit holders [Operator] shall immediately cease construction of catch basin 2 and contact the NRCB if the water table is observed to be one metre or less from the bottom of the liner of the catch basin.

To meet the conditions, the Operator only needs to cease construction and contact the NRCB.

After construction, Approval RA23022 requires a construction completion report from a qualified third party (conditions 4 and 8). A qualified third party confirming the depth to water table in that report is acceptable.

Neither Approval RA23022 nor Amendment Approval RA23022A require geotextile or any other mitigative measures. AOPA requires a liner that meets section 9 of the Standards and Administration Regulation. On occasion, the integrity and function of a catch basin may be the subject of compliance or enforcement action by an NRCB inspector.

A geotextile does not add protection in relation to the water table, or to leaking from the catch basin. A geotextile protects the liner itself. If there is, for example, a rocky subsurface or lots of gravel, an approval officer may require a geotextile.

The Envirowest Engineering report, in Technical Document RA23022 (dated March 21, 2024), found that the pen area has a naturally occurring protection layer. The report indicated at p. 69 of 97 that the "native soils in the area of the proposed catch basins were found to provide sufficient protection for use as a natural barrier however, it is not found to be feasible to construct a catch basin using a natural barrier." The report concluded that the catch basin requires a synthetic liner for practical purposes since, to use a naturally occurring protective layer, catch basin depth could be only 0.7 m.

After the Operator informed the approval officer about the discovery of a higher than expected water table, the approval officer visited the site on January 29, 2025. This visit was not a formal site inspection. The approval officer observed the site under construction. About half the pens were built with no cattle in the pens.

As of April 22, 2025, the NRCB inspector assigned to the matter had not been out to the site.

As of April 22, 2025, the Operator had not requested a post-construction inspection and the NRCB had not done a post-construction inspection on any parts of the permitted operation.

3.2 The Operator's Position

The Board Review outcome sought by the Operator is the granting of Approval RA23022 and Amendment Approval RA23022A.

Operator's Response to First Request for Submissions

In response to the Board's First Request for Submissions, the Operator referred the Board to a letter dated March 11, 2025 from Envirowest Engineering which included the following:

> A piezometer (1" diameter PVC pipe) was installed in the centre of each catch basin. The depth to the water table was measured by a professional engineer using a Heron Instruments Inc. Water Level Meter inserted into the piezometer. The Water Level Meter is a measuring tape specifically designed for groundwater professionals, which has a

moisture-sensing probe fixed to the end. When water is encountered, an audible beep is emitted. The depth to water from the top of the piezometer is noted, and the height of the piezometer above the ground surface is also noted. The height of the piezometer is then subtracted from the depth to water from the top of the piezometer in order to obtain an accurate depth to the water table from the ground surface.

This method was chosen as it is a standard measuring technique utilized by professionals requiring accurate depths to water.

The risks include human error in measuring both the depth to the groundwater and the height of the piezometer. However, the margin of error is in the hundredth of a metre and thus very minimal.

The catch basins are designed to collect and store impacted surface water to ensure that it is not migrating off-site or to other areas of the site that are not protected. The synthetic liner in the catch basin ensures that all impacted surface water remains in the catch basin and will not impact the soil or groundwater. The proposed barrier mitigates damage to the catch basin liner.

The proposed area of contributing run-off is determined (assessed from the dimensions of the solid manure storage facility), and local precipitation data is obtained from Schedule 2 Table 1 of the Standards and Administration Regulations, which then informs the total storage capacity required. The overall capacity of the catch basin refers to the size of the catch basin, including a required 0.5 m of freeboard. The storage capacity reflects the size without the freeboard. Catch basin sizes are determined to provide more storage capacity than required (1:30 year rainfall).

Wherever possible, the most conservative factors are used for determining catch basin sizing. For example, the depth to groundwater was measured to be 3.69 m for catch basin 1, and 3.96 m for catch basin 2. However, a depth of 3.69 m was used to determine the depths of both catch basins (2.7 m) to ensure that the most conservative depth was used.

The bottom of the catch basin synthetic liner is designed to be 1 metre minimum above the water table. As the catch basin is synthetically lined, and as catch basins are designed solely to collect overland impacted surface water, there will be no interaction between the catch basin contents and the groundwater. Therefore, the design of the catch basins is deemed effective to mitigate adverse effects from water table fluctuations.

It is industry standard in Alberta to operate under the assumption that the average water table will fluctuate within 1 metre. It is in Envirowest's practical experience that in general this assumption remains valid.

As the AOPA standard requires a 1.0 m distance from the base of the liner to the water table, it can then be concluded that it is rare for the water table to interact with the base of the liner. If under unprecedented climatic circumstances, should this occur, the liner will lift with the water table creating "bubbles" or lifting. Long-term exposure to these conditions may cause wear on the liner.

To ensure the minimum distance is met, the depth to water will be measured in both installed PVC piezometers prior to construction. The depth to water will be measured using the same Heron Instruments Inc. Water Level Meter and the same method as earlier described. It is recommended that construction occur within the same season as the measurement of the water table occurred. However, if unusual precipitation events occur between the time of measuring and the time of construction, it is recommended that the depth be re-measured.

In addition to these recommendations, ideally, depth to the water table should be measured in the spring, when the groundwater is presumed to be at its highest. This ensures the most conservative measurement is utilized during construction.

Where feasible, it is recommended that the same professional engineer measure the depth to the water table using the same Water Level Meter to help limit variability in measurements.

Operator's Response to Second Request for Submissions

In response to the Board's Second Request for Submissions, the Operator provided the following information on April 9, 2025:

The construction of the site was not yet complete and was ongoing. Area 1 was nearing completion. Eleven pens were done. Catch basin 1 was complete with a synthetic liner installed. Six of the pens were currently being used to house cattle from the Operator's cow/calf operation, which was estimated to be roughly 300 heifers, 200 bull calves, and 40 herd bulls.

The Operator did not address:

- whether a geotextile was installed under the synthetic liner; and

- if a geotextile was not installed, how a potential rise in the water table would be managed to ensure proper functioning of the catch basins.

3.3 Position of Directly Affected Parties

Directly affected parties Thomas Rohe, Heidi Rohe, and Dallas Oberg, all responded to the Board's First Request for Submissions.

Directly Affected Parties' Response to First Request for Submissions

Thomas and Heidi Rohe requested that the Board refuse to grant Approval RA23022 and Amendment Approval RA23022A.

They submitted that the Operator's proposed measures relating to maintaining groundwater and surface water quality had not addressed any of their concerns. As they share the same aquifer with the Operator, their biggest concern was long-term contamination of their water from the CFO runoff running into their water source and spreading a high volume of manure close by. In addition to the Operator encountering water at a depth of less than 4 metres below grade on the site, Thomas and Heidi Rohe gave the following further examples of a high water table in the area:

- The St. Mary's "Wanda Cemetery" was shut down by the Bureau of Vital Statistics due to the high water level in 1954; and
- Dallas Oberg, another directly affected party, encountered the water table when he was digging a basement.

Thomas and Heidi Rohe also submitted that the Battle River Watershed Alliance has recommended that efforts should be taken to limit the development of new CFOs proposed within the Battle River and Sounding Creek watershed as the drainage area in that portion of the watershed could contribute runoff to the main stem during a flood and there is a potential for nutrient transport.

Dallas Oberg submitted that he was very concerned about groundwater and surface water contamination for the following reasons:

- St. Mary's cemetery, which is less than 1.5 miles away from the site, had ceased to allow burials because of concerns of groundwater contamination.
- When not in drought conditions, his water table comes up "too high to the surface".

- The spring runoff runs from the Operator's property to all the neighbours to the south, eventually ending up in the Battle River.
- The Battle River is west of the feedlot, and the creek and low lying areas run to the south which flows through Hastings Coulee which in turn enters the Battle River.

Dallas Oberg also expressed concern that the Operator was not following the rules to develop a CFO, alleging that the Operator had already built a feedlot which was full of cattle.

The deadline to reply to the submissions was March 31, 2025, and none were received.

Directly Affected Parties' Response to Second Request for Submissions

In response to the Board's Second Request for Submissions, a joint letter was received from Thomas Rohe, Heidi Rohe, Dallas Oberg, Rick Hewson, Nancy Hewson, Bob Burke and Ruth Burke, who are all directly affected parties. Their submission included the following:

- It was their understanding that the Operator would have to submit revised plans for the catchment basins and that he would not be allowed to develop the lot and bring in cattle until he had been approved by the Board to proceed. However, although the matter is before the Board for Review and has not been approved to proceed, the Operator has continued to develop the lot and bring in cattle.
- Although the Operator claims that the cattle on site are for a cow/calf operation, it appears that the majority of the animals are not calving and are not being held to calf.
- The Operator did not have 500+ head on the premises prior to applying for a CFO license so this was not an existing operation.
- The Operator has shown disregard for procedure with respect to the CFO application.
- The Operator did not fully respond to the Board's Second Request for Submissions.
- In conversations with an operator undergoing an oil lease reclamation on the neighbouring quarter south of the proposed CFO, the operator advised that they encountered ground water at 3 metres.
- There are possible contamination risks if the water table levels rise to more normal levels after experiencing drought conditions for the past five years.
- Will ground water levels be tested, and by what method, and who will be responsible for ongoing monitoring?

The directly affected parties also indicated that they were disappointed that the Operator has made no effort to meet or communicate with them regarding their concerns, although they realized that was not a requirement of the legislation.

They requested that the Board refuse to grant Approval RA23022 and Amendment Approval RA23022A unless the Operator's measures adequately protect surface water and groundwater.

4. Board Deliberations and Decision

4.1 Preliminary Issues

Before proceeding to the central issues, the Board would like to address two concerns of the directly affected parties.

Construction on the Site

The directly affected parties submitted that it was their understanding that the Operator would have to submit revised plans for the catchment basins and that until these plans were approved by the Board, the Operator would not be allowed to develop the site.

The Board notes that Approval RA23022, issued on August 20, 2024, indicates that it is "effective immediately" and that the conditions remain in effect unless amended in writing by the NRCB.

Condition 1 of Approval RA23022 permits the Operator to construct the feedlot pens but the Operator must "immediately cease construction of the feedlot pens, and contact the NRCB if the water table is observed to be one metre or less from the bottom of the naturally occurring protective layer of the feedlot pens." The Board notes that higher than expected water table reported by the operator was not within one metre of the protective layer and did not require the operator to halt pen construction.

Approval Amendment RA23022A, issued on January 31, 2025, amends the construction requirements of the proposed catch basins and includes an additional commitment by the Operator to build a barrier around the catch basin to protect the liner's integrity. Approval Amendment RA23022A is also "effective immediately" and is to be read in conjunction with Approval RA23022 as all its terms and conditions remain in effect.

Accordingly, as both Approval RA23022 and Approval Amendment RA23022 were effective immediately upon being issued, the Operator was not prohibited from constructing the CFO before the Board Review was complete. However, section 7 of AOPA provides that if the Board decides after holding a review that all AOPA requirements have not been met, the

Board may refuse to grant an approval or amendment to an approval. Thus, any steps the Operator took to construct before the Board Review was complete was entirely at the Operator's own risk as one possible outcome of this Review is that the Board will not grant Approval RA23022 or Approval Amendment RA23022.

Cattle on Site

The directly affected parties submitted that it was their understanding that until the Board upheld Approval RA23022 and Amendment Approval RA23022A, the Operator would not be allowed to populate the site with cattle.

Condition 3 of Approval RA23022 indicates that the Operator shall not allow livestock or manure in the feedlot pens "until the facility has been inspected by NRCB personnel and confirmed by them, in writing to have been constructed in accordance with the terms and conditions of this permit."

Although NRCB Field Services has confirmed that an inspector has not been out to the site, the Operator has admitted that six of the pens are currently being used to house cattle.

The Board acknowledges and shares the concerns of the directly affected parties about cattle being housed in the feedlot pens without the facility having been inspected and approved by NRCB personnel. However, in this proceeding, the Board's jurisdiction is limited to the review of Approval RA23022 and Approval Amendment RA23022A. The issue of cattle being in the feedlot pens without an inspection and written confirmation from the NRCB is a compliance issue and not within the scope of this Review.

The Board has full confidence that NRCB Field Services will immediately, if they have not already done so, investigate the allegations of cattle in pens which have not yet been inspected and approved by the NRCB in accordance with Approval RA23022.

4.2 Central Issues

1. ***Do the Operator's proposed measures, as set out in Approval RA23022 and Approval Amendment RA23022A, adequately protect surface water and groundwater quality?***

Although the approval officer originally determined before issuing Approval RA23022 that the feedlot pens and catch basins posed a low potential risk to groundwater and surface water and met the technical requirements set out in AOPA regulations, the Operator nevertheless encountered water at a depth of less than 4 metres below grade when performing preliminary trenching work at the site in the area of proposed catch basin 1.

After considering the RFRs, the Board found that the depth to water table at this site posed a potential risk of surface water and groundwater contamination that required a Review.

The Operator subsequently submitted the Amendment Application, which included a report prepared by Envirowest Engineering. The Envirowest report recommended modifying the dimensions of the catch basins. The report stated that in order to improve the sub-grade preparation and to reduce the risk of liner damage, a geotextile could be installed under the geomembrane liner. The geotextile could allow for the lateral and upward escape of subsurface water and gases that rise up beneath the geomembrane liner during its surface life.

The Amendment Application proposed modifying the dimensions of the two catch basins to shallower depths to meet the 1 metre setback to the water table requirement at the time of construction, and the width of both catch basins was increased to ensure adequate capacity. The Operator also proposed to construct a barrier around the catch basins to protect the liner.

On January 31, 2025, the approval officer issued Approval Amendment RA23022A to reflect these proposed changes to Approval RA23022. The remainder of Approval RA23022, and its terms and conditions, remained in effect. It was not a condition of Approval Amendment RA23022A that a geotextile be installed under the geomembrane liner. However, the Operator committed to erecting a fence or other suitable barrier around the catch basins, in order to protect the liner's integrity. This commitment was included as an additional condition in the approval.

The Envirowest letter (included as part of the Operator's response to the Second Request for Submissions) provided the following information with respect to how the measurement of the water table and the design of the catch basins would mitigate any adverse effects that could be experienced with water table fluctuations during the year:

- The water table was measured by a professional engineer using a water level meter inserted into the piezometer. This method was chosen as it is a standard measuring technique used by professionals requiring accurate depths to water and the margin of error is very minimal.
- Ideally, depth to the water table should be measured in the spring, when the groundwater is presumed to be at its highest. It is recommended that construction occur within the same season as the measurement of the water table occurred. However, if unusual precipitation events occur between the time of measuring and the time of construction, it is recommended that the depth be re-measured.
- The catch basins were designed to collect and store impacted surface water to ensure that it is not migrating off-site or to other areas of the site that are not protected.

- The most conservative depth was used to determine the catch basin size.
- The synthetic liner in the catch basin ensures that all impacted surface water remains in the catch basin and will not impact the soil or groundwater. The bottom of the catch basin synthetic liner is designed to be 1 metre minimum above the water table. The design of the catch basins is deemed effective to mitigate adverse effects from water table fluctuations.
- As the catch basin is synthetically lined, and as catch basins are designed solely to collect overland impacted surface water, there will be no interaction between the catch basin contents and the groundwater.
- It is industry standard in Alberta to operate under the assumption that the average water table will fluctuate with 1 metre and it is Envirowest's practice experience that, in general, this assumption remains valid.
- If, under unprecedented climatic circumstances, the water table should interact with the base of the liner, the liner will lift with the water table creating "bubbles" or lifting. Long-term exposure to these conditions may cause wear on the liner.

The Board notes that the Envirowest report initially submitted by the Operator commented that to provide the sub-grade preparation and to reduce the risk of liner damage, a geotextile could be installed under the geomembrane liner.

Additionally, the Board notes that the Operator did not respond to the Board's questions in its Second Request for Submissions as to whether geotextiles would be installed and, if they were not installed, how a potential rise in the water table would be managed to ensure proper functioning of the catch basins. It is therefore not clear to the Board whether geotextiles have been installed, or will be installed, under the geomembrane liners.

Field Services has confirmed that a geotextile protects the geomembrane liner, and an approval officer may require a geotextile should the underlying soil conditions warrant additional protection of the geomembrane. In issuing Approval RA23022 and Approval Amendment RA23022A, the approval officer did not make a geotextile underlayer a condition of catch basin construction. Further, a catch basin may be the subject of ongoing inspection followed by compliance or enforcement action if its integrity and function of appears to be compromised.

The Board notes the concerns expressed by the directly affected parties about the high level of the water table. Although their concerns are based on the water table of an abandoned cemetery 1.5 miles away, and on personal and anecdotal experience, they are corroborated by the fact that the Operator unexpectedly encountered water at a depth of less than 4 metres below grade. The Board also notes the concerns of the directly affected parties that the area

has been under drought conditions for the past few years and that there is a risk of the water table rising even higher if drought conditions cease.

In these circumstances, the Board finds that there is a risk of the water table interacting with the base of the liner and that long-term exposure to these conditions may cause wear on the liner. Wear to the liner, if not detected at an early stage and repaired, could result in leakage negatively affecting the groundwater and surface water quality.

The Board also finds that the Operator's proposed measures, as set out in Approval RA23022 and Amendment Approval RA23022A, may not adequately protect against this environmental risk to surface water and groundwater quality. This is because the proposed measures do not include ongoing monitoring of the water table, and it is not clear to the Board whether additional liner protection such as a geotextile has been, or will be, installed under the geomembranes in the catch basins.

2. ***If the Operator's proposed measures are inadequate, should the Board refuse to grant Approval RA23022 and Amendment to Approval RA23022A, or make another disposition of the application for the proposed CFO that the Board considers appropriate?***

Section 25(7) of AOPA provides the Board with the jurisdiction after holding a review to grant an approval or an amendment of an approval on any terms and conditions that the Board considers appropriate.

4.3 Board Decision

After a careful consideration of all the circumstances, the Board has determined that it will grant Approval RA23022 and Approval Amendment RA23022A, subject to additional conditions, to better address the concerns of environmental risk to surface water and groundwater quality. These conditions are with respect to:

- Monitoring the water table level annually, in reasonable proximity to the catch basins, following snowmelt or other time when the groundwater level is likely to be highest.
- Testing the groundwater for manure contamination indicators, using an accredited water testing laboratory, in conjunction with annual sampling.
- Visually inspecting the condition of the geomembrane synthetic liners in the catch basins every three years.

The monitoring, sampling for testing, and inspection are to be performed by a qualified third party.

With the further conditions:

- Require the Operator to immediately report to Field Services if uplifting of the geomembrane liner is observed.
- Require the Operator to maintain records of groundwater levels and testing results and submit these to Field Services on an annual basis.

The Board requires these monitoring and inspection conditions to be in place until 2035, after which time Field Services can exercise its discretion as to whether further monitoring and inspections are required and at what frequency.

The Board therefore directs the approval officer to:

1. draft the conditions as described above;
2. consolidate Approval RA23022 and Approval Amendment RA23022A; and
3. submit the above to the Board for final approval before issuing the permit.

DATED at EDMONTON, ALBERTA, this 29th day of May, 2025.

Original signed by:

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Sandi Roberts (chair) Daniel Heaney

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Laura Dunham