Canadian Environmental Law Association
EQUITY. JUSTICE. HEALTH.

April 14, 2025

**VIA ELECTRONIC MAIL**

Ontario Ministry of the Environment, Conservation and Parks
Client Services and Permissions Branch
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**RE: Great Bear Resources Ltd. ("GBR", "Kinross", or "Kinross/GBR") Proposal for a Permit to Take Water ("PTTW") – ERO No. 025-0078, MECP Reference No. 0788-DCXP8C (Comment Period January 23 – February 22, 2025) – Supplementary Comments of Grassy Narrows First Nation**

We are co-counsel with Cavalluzzo LLP on behalf of Asubpeeschoseewagong Netum Anishinabek ("ANA", "Grassy Narrows First Nation" or "Grassy Narrows") and, in this capacity, provide the following supplementary comments in connection with the above matter.

## I. Introduction

On February 21, 2025, ANA filed preliminary comments with the Ministry of the Environment, Conservation and Parks ("MECP" or "Ministry") respecting the above proposal. In general, those preliminary comments noted the failure of the company's proposal for a 5-year PTTW application for underground dewatering in connection with advanced exploration activities ("AEX") to resolve problems ANA experts had previously identified with earlier PTTW applications. These problems include, but are not limited to, failure to address properly, or at all, metal leaching – acid rock drainage ("ML-ARD"), release of sulphate and its role in the formation of methylmercury in area water bodies, and related matters. At that time, ANA also indicated that it intended to file further comments once its experts had an opportunity to review the new application. We also noted in our February 21st comments that we were informed by MECP via a February 12, 2025 email that the Ministry would accept further comments if they were brought to its attention by April 14, 2025.

ANA continues to rely on the concerns raised in its preliminary submission. The following comments supplement that preliminary submission based on the additional expert opinion evidence provided by ANA's experts on the new GBR PTTW application. Their respective reports accompany these supplementary comments.

It should also be noted that in our February 21st comments, we requested that if MECP intended to issue a PTTW for this project that ANA be provided with the draft PTTW and given an opportunity before any decision to comment on whether the draft instrument adequately mitigates adverse impacts identified by our experts in the GBR application supporting materials.

We also indicated that ANA wanted an opportunity for its experts to review and comment upon any draft Environmental Compliance Approval ("ECA") for this matter. The reason for this request was our experience with the 1-year scoped PTTW issued by the MECP in December 2024, which relied upon, and cross-referenced, a mobile ECA that was an inappropriate and ineffective substitute for treating water discharges under, or arising from, the scoped PTTW, and which ANA experts found insufficient to protect the environment. In March 2025, the Ontario Land Tribunal granted ANA unrestricted leave to appeal the 1-year scoped PTTW. Most recently, on April 11, 2025, GBR requested that MECP revoke the issuance of this PTTW, only a few short weeks after ANA filed its Notice of Appeal.

MECP has not responded to our request to review these draft instruments. In these supplementary comments, ANA renews its request for an opportunity to review both the draft 5-year PTTW and draft ECA concerning Great Bear AEX activities before they may be approved.

## II. Recommendation: MECP Should Reject the 5-Year PTTW Application

On the basis of reviews prepared by ANA experts, attached to these comments and summarized below, it remains ANA's position that MECP should not approve the GBR application for a 5-year PTTW.

## III. Findings of ANA Experts

The following constitutes a summary of the findings of ANA experts following their technical reviews of the GBR 5-year PTTW application and supporting materials.

### A. Dr. Kevin A. Morin

The report by Dr. Kevin A. Morin indicates that his concerns, identified in previous reports attached to, and summarized in, our February 21, 2025 comments, remain valid and unresolved to date. In addition, Dr. Morin's latest review indicates that new problems have been added by the new PTTW application and compound his previous concerns.[1] In summary, Dr. Morin's concerns include, but are not limited to, the following matters:

- There are major differences in preliminary, draft, initial, and final reports used by Kinross to seek government permits and approvals for the Great Bear Project. For example, some of the technical information from 2023, on which the scoped PTTW was based, is different from some technical information in 2025 on which the five-year PTTW is based, although they are one and the same site reviewed by MECP;[2]

- According to the federal prediction manual, any disturbance of geological materials, including changes to the height of the water table or the rate of groundwater movement, may change geochemical or hydrological conditions and increase contaminant

[1] Dr. Kevin A. Morin, Minesite Drainage Assessment Group, Great Bear Mining Project: Comments on the New 2025 PTTW Application (11 April 2025) PDF page 4 (Attachment 1).
[2] *Ibid*. PDF pages 4-6.

concentrations and contaminant loading, requiring predictions with respect to ML-ARD and water quality impacts. Kinross proposed such changes in connection with both the scoped and new PTTWs but without providing the predictions required by the federal prediction manual;[3]

- There has been a failure to consider the impact of exploration drillholes on the flow, movement, modelling, and contamination of groundwater at the Great Bear Project before, during and after proposed advanced exploration. The supporting material upon which the scoped PTTW application was based, did not mention the effect of what is now understood to be more than 2,500 open drillholes on groundwater flows and directions and later contamination from underground workings. Whereas the new 5-year PTTW application admits that open drillholes: (1) exist at the site; (2) can have a huge effect on groundwater flow; and (3) are the focus of Kinross attempts to plug (grout) these 2,500 holes to stop the accelerated movement of water they will otherwise facilitate.[4] However, and as noted below in the summary of findings by Source Consulting (hereinafter "Source"), there is a lack of information respecting the approach and effectiveness of Kinross attempts to remedy the problem;

- There are major changes in groundwater modelling and predicted groundwater drawdowns between the 2023 application for the scoped PTTW and the proposed five-year PTTW in 2025. These Kinross changes to groundwater modelling have led to differing estimates of water taking in the last two years that are not reflected in the overestimated maximum amounts requested in the PTTW applications. In addition, cross-section information provided in the 2025 application shows, for example, water levels 20 meters above the underground workings where advanced exploration is expected to take place. Thus, Kinross groundwater modelling for active dewatering at the site is contradictory and nonsensical as it shows that active exploration cannot take place in the dewatered underground workings because they are flooded and pressurized with water and not dewatered. The Kinross PTTW applications and their requested water takings are based heavily on a nonsensical groundwater model;[5]

- Unlike the 2023 PTTW application, the 2025 PTTW application includes a "water treatment pond uplift protection system". The need for this system is based on an error in the groundwater modelling that has been pointed out by ANA for more than a year which indicated that the modelling artificially creates erroneously high water tables, apparently above the existing land surface in places (i.e., mounded water piled up into the air in places). Instead of recognizing its error, Kinross instead calculated the imaginary flow needed from subdrains beneath the ponds to lower this free-standing mound of water up in the air to an elevation beneath the base of the ponds. This led to the 2025 PTTW application requesting a new water taking of 150,000 L/day, every day of the year, in respect of the water treatment pond uplift protection system. This also highlights that the information

[3] *Ibid*. PDF page 7.
[4] *Ibid*. PDF pages 9-11.
[5] *Ibid*. PDF pages 13-21.

supporting the scoped PTTW is different from that supporting the new five-year PTTW although it is the same site;[6]

- The new 2025 PTTW application proposes to use potentially toxic supplementary groundwater wells to maintain environmentally safe flow levels in the Unnamed Watercourse 3. The problem arises from unreliable and too low simulated groundwater levels around and beneath Unnamed Watercourse 3 that predict that water might be drained out of this watercourse by dewatering. The loss of water from Watercourse 3 could reach such a degree that its flow may have to be supplemented by groundwater pumped from three wells. However, pumping groundwater with little to no dissolved oxygen into a fish-bearing creek, as a major replacement to its lost flow caused by advanced exploration dewatering, could be toxic to fish and aquatic life but was not examined by Kinross. Many potentially toxic, adverse impacts could occur in Unnamed Watercourse 3 and elsewhere caused by pumping relatively large amounts of anoxic, dense, and/or concentrated groundwater during the proposed advanced exploration taking of water under the PTTW. These potentially toxic impacts are not recognized and not mitigated in the new (2025) PTTW application.[7]

Overall, it was the professional opinion of Dr. Morin that no PTTW should be issued until the substantial uncertainties and contradictions with the Kinross supporting material identified in his report(s) are resolved.[8]

### B. Dr. Brian Branfireun

The report by Dr. Brian Branfireun indicates that he remains of the opinion that the advanced exploration project will increase sulphate levels in receiving waters, and as a result increase the production of methylmercury and increase methylmercury concentrations in fish.[9] His concerns with the new PTTW supporting material include, but are not limited to, the following matters:

- The assimilative capacity of the Chukuni River continues to be overstated by GBR in support of its use as the receiving body for all the water discharged from the operation and this overstatement of assimilative capacity is also implied by the flow data presented;
- GBR's handling of surface water flow data calls into question the potential impacts of dewatering on important tributaries such as Dixie Creek, as the relative impact of modelled dewatering effects are entirely dependent on estimates of normal flow conditions. The company states plainly in its supporting material that the below ground water taking activities will impact baseflow in tributaries, but meeting the requirement that dewatering not affect flows by more than 20% is highly sensitive to the characterization of the baseline condition in the first place;

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[6] *Ibid*. PDF pages 22-24.
[7] *Ibid*. PDF pages 25-26.
[8] *Ibid*. PDF page 4.
[9] Dr. Brian Branfireun, Preliminary Comments on Great Bear Resources Ltd. Proposal for a Permit to Take Water (11 April 2025) PDF page 3 (Attachment 2).

- The GBR supporting materials are technically silent on the issue of how dewatering will affect wetlands which regulate water flows in tributaries like Dixie Creek and are completely dependent on the presence of water to maintain habitat and ecosystem function. A loss of functional wetland area to dewatering has not been considered in the GBR supporting materials, nor in any other of its work to the best of Dr. Branfireun's knowledge;
- All GBR's statements imply that wetlands in the project area will not be impacted by the proposed dewatering. However, Dr. Branfireun regards this as simply physically unfounded since dewatering effects are projected for streams proximal to wetlands. Dr. Branfireun has expressed the opinion in other cases that amplified wetting and drying cycles due to dewatering can increase the formation of methylmercury in wetland sediments;
- The GBR supporting materials are silent on the issue of the fate of the water that is withdrawn because of the proposed operations. Given the potential for substantial release of sulphate from waste rock drainage, and groundwater from the dewatering of belowground operations, the impact of additional mass of sulphate in larger volumes of discharge water on the formation of methylmercury in this already mercury-sensitive environment is heightened; and
- The GBR supporting materials are completely silent on the issue of mercury and methylmercury, again failing to acknowledge its central importance to the protection of aquatic resources and fish consumers.[10]

Overall, when combined with water quality guidelines for sulphate, mercury, and methylmercury that in Dr. Branfireun's view are of no use for the protection of aquatic life or human health, his professional opinion remains that the advanced exploration project for which the new PTTW is sought will increase sulphate levels in receiving waters, and as a result increase the production of methylmercury and increase methylmercury concentrations in fish.[11]

### C. Dr. Rina Freed and Martin Eunseo Shin

The report by Dr. Rina Freed and Martin Eunseo Shin of Source indicates that while some matters raised have been addressed a number of previously raised concerns remain unresolved.[12] These include, but are not limited to, the following:

- The GBR application lacks site-specific demonstration of reliable flow supplementation capacity, making the success of supplementation wells as a mitigation measure for Unnamed Watercourse 3 uncertain, especially during low-flow seasons. In the event of a failed well, the potential for Unnamed Watercourse 3 to experience significantly reduced flows remains a real and unresolved risk. Such reductions could have substantial ecological consequences, impacting aquatic habitats and water-dependent species;[13]

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[10] *Ibid*. PDF pages 1-2.
[11] *Ibid*. PDF page 3.
[12] Dr. Rina Freed and Martin Eunseo Shin, Source Consulting: Review of Great Bear Advanced Exploration Program for Permit to Take Water for Dewatering (Updated PTTW) (11 April 2025) PDF page 1 (Attachment 3).
[13] *Ibid*. PDF page 2.

- The combined reduction in flow to Dixie Creek during sensitive low-flow periods from surface water takings and baseflow reductions is not modeled, which limits understanding of total hydrologic alteration. Source is concerned about the cumulative impact of surface water takings and underground dewatering on Dixie Creek, which could lead to a significant alteration of its hydrological regime. The combined effects of surface water taking and groundwater flow reduction pose a significant risk during periods of low flow, when water availability is already constrained;[14]

- The GBR groundwater model relies on historical data covering the years 1981 to 2010. This limited time range may result in an underprediction of extreme conditions in the model results, particularly during low-flow periods, drought conditions, and floods. As a result, the groundwater model may not accurately reflect the current and future hydrological conditions in the project area. Given the increasing frequency of extreme weather events, including prolonged dry periods and floods, it is essential that the groundwater model incorporate more recent data or climate change scenarios to account for these changing conditions;[15]

- Source remains concerned that the new PTTW application does not fully consider site-specific triggers and protocols for managing water takings, especially during low-flow water or drought conditions. The MECP PTTW Manual emphasizes the importance of having contingency measures in place, yet these measures remain inadequately addressed in the current application. Furthermore, the focus of ANA's previous comments was on the need for adaptive management protocols that ensure minimal environmental impacts during droughts, even if water continues to flow into the underground. The absence of a contingency plan to adjust water management practices during extreme low water periods raises questions about how the project intends to protect downstream ecosystems and maintain water availability for other users when natural conditions become stressed;[16]

- The use of a steady-state groundwater model in the new PTTW application has the potential to underestimate impacts, because it fails to capture the dynamic nature of groundwater systems. This approach overlooks crucial time-dependent changes in groundwater flow, recharge, and drawdown (zone of influence), leading to potential underestimation of potential impacts;[17]

- The new PTTW Application indicates there are over 2,500 resource exploration and drill holes at the site. The application supporting material provides no information regarding the approach for backfilling the exploration and drill holes. This omission raises concerns about the potential long-term impact on groundwater flow (through unfilled or improperly filled holes leading to the creation of conduits that increase rock permeability) and

[14] *Ibid*.
[15] *Ibid*. PDF pages 2-3.
[16] *Ibid*. PDF page 3.
[17] *Ibid*.

hydraulic conductivity (facilitation of contaminant migration or alteration of recharge / discharge) in the local groundwater system;[18]

- The GBR application lacks a predictive water quality model addressing potential changes over time of underground dewatering inflow quality. The omission leaves gaps in understanding how water quality may change and the implications for such change for discharges and compliance. While general water quality data are referenced in the new PTTW application, no modeling was done to simulate time-series concentration trends or contaminant mobility from mine workings or geological units.[19]

## IV. Conclusion, Recommendation, Request, and Reservation of Rights

On the basis of ANA expert reviews attached to these comments and summarized above respecting the application material, ANA repeats its concerns that have been previously provided to MECP in February 2025. The new PTTW proposal appears to pose substantially the same, if not greater, risks to the health, environment, well-being, and constitutional rights of the ANA community as both the initial PTTW that was not proceeded with, and the subsequent scoped PTTW, with respect to which we have previously apprised the MECP. Consequently, a decision approving the new PTTW application would appear: (1) to be unreasonable; (2) to be a cause of significant environmental harm; and (3) to have the potential to jeopardize ANA's Aboriginal, treaty, and inherent rights.

Accordingly, ANA submits that the Director should not issue a PTTW to GBR.

Grassy Narrows also repeats its February 2025 request to be provided copies of any draft PTTW and ECA before they are finalized and expressly reserves the right to file further supplementary comments and reports after the close of the April 14th deadline.

Yours truly,
**CANADIAN ENVIRONMENTAL LAW ASSOCIATION**

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Encl:
- Report of Dr. Kevin Morin, April 2025 (Attachment 1)
- Report of Dr. Brian Branfireun, April 2025 (Attachment 2)
- Report of Dr. Rina Freed and Martin Eunseo Shin (Source), April 2025 (Attachment 3)

[18] *Ibid*. PDF page 4.
[19] *Ibid*.

cc. Lands Protection Team
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