



May 18 , 2022

Debra Sikora
Panel Chair
Joint Review Panel
Marathon Palladium Project

Subject: Environment and Climate Change Canada’s Closing Remarks for the Marathon Palladium Project

Dear Ms. Sikora,

I wish to thank you and the other panel members for providing Environment and Climate Change Canada (ECCC) with the opportunity to participate in the Marathon Palladium Project (the Project) public hearings and the opportunity to provide closing remarks. On February 25, 2022, ECCC submitted its written submission (CIAR #1086) for the Public Hearing of the Marathon Palladium Project that specified advice and recommendations based on ECCC’s review of the information provided by Generation PGM Inc. (GenPGM). Based on the information presented during the public hearings as well as documented in the Proponent’s responses to Undertakings, ECCC would like to confirm to the Panel that the advice and recommendations provided by ECCC in the written submission have not changed.

On March 24, 2022 the Panel issued four Undertakings (18-21) (CIAR #1180) to GenPGM to provide further information with respect to Project effects on boreal caribou. The remainder of ECCC’s closing remarks focus on boreal caribou and the additional information submitted by GenPGM as part of their responses to Undertakings 18-21 (CIAR #1209, #1210, #1211, and #1212).

Undertaking 18

ECCC’s expert advice in its written submission included that GenPGM’s connectivity assessment was insufficient in characterizing the short and long-term impacts to inter- and intra-range connectivity during all phases of the Project.

Following ECCC’s concerns about connectivity for boreal caribou in the Lake Superior Coastal Range (LSCR), GenPGM performed additional analyses, both prior to the public hearings and during the hearings as part of Undertaking #18. ECCC would like to acknowledge that, in response to Undertaking #18, GenPGM provided additional

modelling information as it relates to assessing baseline connectivity, connectivity during the construction and operation phases, as well as connectivity 5- and 50- years post-closure. GenPGM also provided updated figures that illustrate potential caribou movement pathways pre-Project as well as during the operations and post-closure phases.

ECCC's expert advice is that much uncertainty remains about the impacts of the Project to caribou connectivity in the LSCR. At the intra-range scale, the connectivity analyses provided by GenPGM lacks the scientific rigor required to assess impacts. Potential areas for improvement include: 1) using a scientifically valid approach to assess landscape connectivity (of which there are many in the scientific literature), and 2) validating resistance to potential caribou movement (resistance values) using empirical data (which are currently based on expert opinion). As such, the results of the connectivity analysis provided by GenPGM can be viewed as an incomplete representation of landscape connectivity, with unquantified uncertainty.

GenPGM's analysis demonstrates that the Project will negatively impact east-west (or intra-range) connectivity considerably in the short and medium term. For example, Figure 4 (CIAR#1209) shows a high level of resistance (red polygons) attributed to the project site during operations, and Figure 5 shows a high level of resistance (orange polygons) attributed to the project site at 5 years post-closure. GenPGM's conclusion that "there will be no significant effects on the caribou habitat connectivity [...] as a result of the Project during operations and post-closure (CIAR #xxx)" is thus not supported by their analysis.

Over the long-term (50 years post-closure), GenPGM predicts that impacts on connectivity are expected to decrease. GenPGM recently proposed, as part of the response to this undertaking, that a 1-km wide forested travel corridor bisecting the Site Study Area (SSA; post-closure only) could be made available for caribou movement. However, it appears unlikely that this corridor would be effective at mitigating impacts to inter- and intra-range connectivity over the long-term. As GenPGM have recognized themselves, corridors used by caribou are usually 10-20 km in width. Additional information about the design of this corridor would be needed, and its performance should be assessed using a connectivity analysis, before any conclusions can be drawn about its efficacy to enable connectivity post-closure. Moreover, this corridor will not exist during the life of the mine, and thus will do nothing to improve connectivity during operations.

The assessment by GenPGM has not accounted for how inter-range connectivity will be maintained during the construction and operations phases. Mitigation measures proposed

to compensate for effects to connectivity have not been outlined in detail to support GenPGM's conclusion that the residual environmental effect on caribou and its critical habitat will be minimal.

As per the federal recovery objectives for the boreal caribou, and as presented during the Panel, ECCC remains of the view that intra- and inter-range connectivity must be maintained to support the recovery of this local population.

In summary, ECCC remains of the view that insufficient information has been provided by GenPGM to characterize short and long-term impacts to inter- and intra-range connectivity, and that impacts to range connectivity have been underestimated by the Proponent. For example, more information, as described in ECCC's Undertaking #20 comments below, is needed in order to develop a specific offset ratio to address the removal of Coastal Range critical habitat.

In Undertaking #18, GenPGM questions whether the Site Study Area (SSA) meets the criteria for critical habitat as per ECCC (2020) caribou habitat models. ECCC would like to clarify that the caribou habitat models referenced are part of a broad national approach identified in the federal recovery strategy. ECCC recommends local and more detailed information be taken into consideration, including that the SSA currently has only 0.2 ha of human disturbance and remains 97% forested. As such, ECCC's expert advice is that the SSA currently allows for the passage of boreal caribou and that the SSA should be considered critical habitat as identified in the federal recovery strategy. This means that the direct loss of boreal caribou critical habitat and the reduced intra- and inter-range connectivity will result in the destruction of critical habitat.

Undertakings 19 and 20

ECCC's expert advice in its written submission included that there is a need for an on-site rehabilitation and off-site mitigation plan that explicitly addresses the removal of approximately 1,116 ha of boreal caribou critical habitat and connectivity during all phases of the project. ECCC would like to acknowledge the updated information provided by GenPGM for on-site rehabilitation and the post-closure landscape (Undertaking #19), including a conceptual plan for the post-closure landscape and corresponding vegetation communities. ECCC recognizes that GenPGM has indicated a commitment to rehabilitate and restore disturbed areas to a natural landscape supportive of wildlife habitat.

ECCC also acknowledges that GenPGM has identified a plan as part of the response to Undertaking #11, to increase reforested habitat post-closure to 487.1 ha (+/- 10-20%). GenPGM has not made a commitment to implement this plan and if implemented, the

Project would still result in 593.9 ha of forested habitat in the SSA being permanently removed from the landscape. Therefore, ECCC's expert advice is that even with a comprehensive on-site mitigation plan and post-closure restoration plan, there will be permanent impacts to critical habitat even 50 years post-closure, which is approximately 65 years from the beginning of the Project. ECCC remains of the view that additional information regarding the on-site rehabilitation and off-site mitigation plan is required to evaluate residual effects. For example, more information is needed related to on-site mine rehabilitation and post-closure restoration measures that will be applied to create low-resistance corridors and allow for caribou movement and habitat use throughout the mine site. This additional information will also be used to inform offsetting requirements.

With regards to caribou offset measures (Undertaking #20), GenPGM provided some potential types of activities for offset measures, including: road decommissioning and enhanced silviculture, translocations, maternal penning, enhanced monitoring, targeted research, community-based projects and alternate prey-predator control. The measures are described at a very high level and should the Project proceed, a detailed offsetting plan that adequately addresses the loss of connectivity within the Coastal Range and the discontinuous range, as well as residual project effects, would be required. GenPGM would need to develop this plan in consultation with the Province of Ontario and Indigenous communities. ECCC is available to support these discussions. The plan should also consider ECCC's Biodiversity Offsetting approach as described in its Operational Framework for Use of Conservation Allowances.

Undertaking 21

In Undertaking #21 GenPGM indicates that their position remains that sufficient information is available to the Panel to demonstrate that there will be no significant adverse effects of the Project on Caribou, consistent with their conclusion of the EIS Addendum, Section 6.2.8 (CIAR #727), and that appropriate mechanisms exist beyond the current environmental assessment process to confirm further details, ensure compliance, and confirm effects predictions for this species. Based on the information provided by GenPGM, and as described in ECCC's written submission and closing remarks above, it is ECCC's expert advice that more information is required to assess the adverse effects from the Project on boreal caribou.

ECCC would also like to note that GenPGM has not provided new information on predicted impacts of sensory disturbance to sensitive category 1 boreal caribou habitat. Therefore ECCC's original recommendation (Section 5.2.1 #3) as provided in our written submission (CIAR #1086) still stands.

In conclusion, ECCC's four recommendations for boreal caribou, as described in ECCC's written submission, remain unchanged. ECCC's expert advice remains that this project poses a high risk to the recovery of the Coastal Range boreal caribou due to the high vulnerability of the population and the high severity of the projects' residual adverse effects to critical habitat connectivity, which are expected to be high during all phases of the Project, including post-closure. ECCC is of the view that regardless of whether or not caribou occupy the mainland portion of the range at present, intra- and inter-range connectivity must be maintained to support the recovery of this local population as per the federal recovery objectives. As outlined in the Boreal Caribou Federal Recovery Strategy, maintaining a long-term self-sustaining status for boreal caribou ranges depends on connectivity within and between ranges, and irreversible range retraction or permanent breaks in range connectivity should be avoided.

Should you have any questions, please do not hesitate to reach out to Rob Clavering by email at <email address removed>.

Sincerely,

<Original signed by>

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