

GENERATIONPGM

April 8, 2022

Via Email

Joint Review Panel
Impact Assessment Agency of Canada
160 Elgin Street, 22nd Floor
Ottawa, ON K1A 0H3

Attention: Debra Sikora
Panel Chair, Marathon Palladium Project

Dear Ms. Sikora:

**Re: Generation PGM Inc. (GenPGM)
Marathon Palladium Project (Project)
GenPGM Response to Métis Nation of Ontario (MNO) regarding serpentine**

During Dr. Victoria Stinson's presentation on April 4, 2022 on behalf of MNO, Dr. Stinson made submissions about serpentine among other things (CIAR #[1229](#), PDF 108 lines 17-25 and PDF 109 lines 1-3). Dr. Stinson did not ask a question about serpentine during the April 4 session.

On April 8, 2022, MNO filed an email from Dr. Stinson asking a question about serpentine to GenPGM, Health Canada, NRCan or MNDMNR (CIAR #[1263](#)):

"What varieties of serpentine are present at the mine site and in what habit are they present? Please provide the study that had determined this."

GenPGM's response to the question raised in Dr. Stinson's email is below.

1. PGE – Cu deposits often have high serpentine content due to the main mineral phases, olivine, breaking down to serpentine over time due to metamorphism and deformation.
2. However, the Marathon deposit has not undergone significant metamorphism or deformation and the primary mineral phases are intact.
3. If serpentine was present in significant amounts it would be important to understand, as asbestos is one of several forms of serpentine, however it is not abundant in the Marathon deposit.
4. Because of the absence of metamorphism and deformation of the Complex and the Marathon Deposit, there is minimal chlorite, serpentine, sericite, epidote and talc replacement of primary minerals.
5. Olivine and magnetite are present dominantly as a primary mineral phase. Although alteration minerals are present, they compose only a very small proportion of the mineralogy of the Marathon Deposit.

6. Varieties of serpentine that have been identified are antigorite and chrysotile however, they represent an insignificant proportion of the rock mass.

- Source: Dr. Matthew Brzozowski, "[Application of Mineral Chemistry to Petrogenesis and Exploration in Conduit-Type Cu-PGE Deposits](#)" (2018), University of Windsor Dissertation, c. 2.4.2, p. 24, lines 3 to 8.

Should you have any questions please contact the undersigned.

Yours truly,

GENERATION PGM INC.

<Original signed by>

Jeremy Dart
Environmental Manager