
HAMMOND REEF GOLD PROJECT RESPONSE TO COMMENTS ON FINAL EIS/EA

COMMENT – T-58

Source: Canadian Environmental Assessment Agency

Summary of Comment

It is noted in MNR's comment (MNR-1BJ) that the EIS has not provided information on how responses to predicted declines in water levels (up to 9cm) can be addressed and continue to meet the socio-economic and environmental objectives of the Seine River Water Management Plan. It is not clear how water level impacts will not extend downstream from Marmion Reservoir in low water conditions and during drought years.

This information will be necessary to have a clear understanding of how low water conditions may affect any downstream water users and inform any mitigation measures and any monitoring networks.

Proposed Action

Provide an explanation of how water level impacts will not extend downstream from Marmion Reservoir in low water conditions and during drought years. If there is an impact, provide a description of proposed mitigation measures and indicate any changes in the conclusions.

Reference to EIS

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Response

Canadian Malartic Corporation understands that the Government Review Team is concerned about changes to water levels in Marmion, especially in dry years. The hydrology predictions were calculated using worse case scenarios to demonstrate that the Project can operate without significant effects, even in extreme conditions. Contingency plans were also put in place to further mitigate potential effects.

Continuous lake water balance modelling was performed using a 27-year historic time series of hydrologic data (recorded outflows, water levels, precipitation and evaporation). This model was used to predict the influence of the Project of reservoir water levels and outflows under different modelling scenarios.

'Worst Case' Water Level Prediction

Under the following conservative assumptions, the maximum predicted reduction in water level in Marmion Reservoir was 9 cm:

- Water taking for the Project, equivalent to the volume required during a 100-year return period dry condition, occurred every year during the simulation period; and
- Water taking for the Project, was taken entirely from reservoir storage (i.e., outflows from Marmion Reservoir were maintained as per "existing conditions" simulations and were not affected by the Project).

'Worst Case' Outflow Prediction

Under the following conservative assumptions, the maximum predicted reduction in outflows from Marmion Reservoir was 4.9%:

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- Water taking for the Project, equivalent to the volume required during a 100-year return period dry condition, occurred every year during the simulation period; and
- Water taking for the Project, was taken entirely from reservoir outflows (i.e., water levels in Marmion Reservoir were maintained as per “existing conditions” simulations and were not affected by the Project).

Summary of ‘Worst Case’ Predictions

In reality, the probability of a dry condition with a 100 year return period occurring during the 11 year operational life of the mine is low and water levels and outflows from Marmion Reservoir will be managed such that water taking by the Project will affect both outflow and water level. For these reasons, the predicted maximum reductions in outflow and water level are not expected to occur. Rather, they are considered as extreme ‘upper bounds’ of potential impact.

The ‘upper bound’ reduction in water level will result in no impact to flows or water levels in downstream watercourses because outflows from the reservoir are unchanged in this model scenario. The ‘upper bound’ reduction in outflow is well within the generally accepted accuracy of flow measurements in natural streams (+/- 10%). Therefore, any effect of the Project on the downstream watercourses will be so small as to be beyond the practical limits of measurement.

Monitoring and Contingency

Monitoring of reservoir outflows and water levels is currently performed for compliance with the Seine River Water Management Plan. This monitoring is expected to continue and volumes of water taken for Project use will be measured and recorded. The results of these monitoring activities will provide a means for evaluating Project impact on Marmion Reservoir water levels and outflows.

If it is determined that the Project is having a direct and significant impact on basin water levels or outflows, the following contingency measures are noted in Table 8-2 of the Final EIS/EA Report:

- Work with the Seine River Management Authority and appropriate regulating authorities to determine appropriate action; and
- If required, withdraw water only during certain periods of the year (e.g., during high flow periods) and store it on-site for use during low flow periods.