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30 October 2024

Phil Nevill
Senior Environmental Assessment Officer
Department of Planning, Housing and Infrastructure
4 Parramatta Square | 12 Darcy Street
Parramatta NSW 2150

Re: Response to additional information request (RFI #8)

Dear Phil,

1 Introduction

Please find below a response to the additional information request dated 18 October 2024 in relation to the additional advice from DCCEEW Water regarding the Cowal Gold Operations (CGO) Open Pit Continuation Project (SSD-42917792) (the Project).

2 Groundwater impacts and dewatering requirements

2.1 DCCEEW recommendation 1.1 (pre-determination)

The proponent should address the groundwater drawdown without the influence of the model northern constant head boundary

EMM Consulting Pty Ltd (EMM) prepared a groundwater model and associated groundwater impact assessment to support the CGO Open Pit Continuation Project (the Project) Environmental Impact Statement (EIS).The groundwater model adopted constant head water level boundaries because it was difficult to achieve stable convergence in steady-state conditions using a general head boundary condition, especially given the complex variables involved in the Monte Carlo predictive uncertainty analysis. These constant water levels were applied at the edges of the model, from the Upper Cowra Hydrostatic Unit, down to the bedrock.

Following submission of the EIS, DPHI appointed Noel Merrick from Heritage Computing Pty Ltd, to undertake an independent peer review of the groundwater model. As an outcome of the independent peer review, a revised groundwater model and impact assessment was provided as an appendix to the submissions report which included an assessment of modelled fluxes across the constant head boundary cells as a proxy for assessing potential drawdown buffering at the boundaries. Results presented in the revised groundwater impact

assessment indicated negligible influence of a change in fluxes and accordingly EMM consider the use of constant head boundaries to have minimal influence on model predictions.

A meeting between representatives from EMM, DCCEEW Water, DPHI and Noel Merrick was held on 3 June 2024 to discuss residual concerns in relation to the groundwater model. As an outcome of the meeting, additional modelling scenarios were presented to assess the influence of the stage elevations assigned to the northern constant head boundary on model predictions. The additional modelling demonstrated that mining-related drawdown predicted at the northern boundary is smaller than drawdown associated with landowner pumping, and therefore the associated groundwater impact assessment is not influenced by boundary condition selection.

Evolution has committed to implementing a range of groundwater monitoring and management measures throughout the life of the Project. This includes, as recommended by DCCEEW Water, a commitment to implementing a groundwater model review and calibration process every three years, which will incorporate additional data and test a range of assumptions currently used in the model. This model review and validation process is designed to ensure the groundwater model remains fit for purpose and is able to accurately assess impacts and changes to the groundwater environment as the Project progresses and more data becomes available.

Adopting a general head boundary condition in the model would require significant re-work of the model to provide sufficient numerical stability and ensure the model remained fit for purpose and reliable in predicting and understanding impacts. This is not considered necessary or feasible to be done at this stage, noting the independent peer reviewer, engaged by DPHI, has identified that the current model satisfies the three criteria outlined in the IESC Explanatory Notes in determining if a model is fit for purpose being:

- usability
- reliability
- feasibility.

Based on the above, and work done to justify the use of a constant head boundary in this model, the recommendation to update the model using a general head boundary is not supported by Evolution and is not considered necessary to model and assess predicted impacts from the Project to inform a determination of the Project. Should the Project be approved, Evolution will develop a groundwater management plan to support the implementation of the Project, which will include commitments to three yearly model reviews and calibration, with actual impacts versus predicted impacts reported as part of the Annual Review process. The use of a general head boundary condition could be adopted as part of a future model re-build if actual impacts are identified as resulting in impacts significantly greater than those currently predicted by the groundwater model.

2.2 DCCEEW recommendation 1.2 (post approval)

The proponent should provide further analysis and justification of modelled hydraulic conductivities.

CGO will undertake further analysis and provide additional justification for hydraulic conductivities as part of future groundwater model reviews to be undertaken every three years, in line with existing conditions of consent, and previously committed to in the EIS.

3 Water supply, take and licensing

3.1 DCCEEW recommendation 2.1 (pre-determination)

That the proponent demonstrates the project's ability to obtain sufficient entitlement of provide a methodology to scale works to meet the held entitlement.

Water balance modelling was undertaken by EMM Consulting Pty Ltd (EMM Consulting) and presented in a memorandum provided as Appendix M to the submissions report, to understand the water licensing implications associated with dewatering any water trapped behind the Lake Protection bund (LPB) following construction.

The model commenced with a current assumed water level in Lake Cowal of 205.478 m AHD as recoded on 20 November 2023.The level in Lake Cowal was modelled to range between 205.6 mAHD under very wet (90th percentile) conditions, and 203.7 m AHD under very dry (10th percentile) conditions.

Since the time of modelling, water levels in Lake Cowal have been receding, with the latest level recorded at approximately RL 204.9 m AHD.

The outcomes of the water balance model work determined that for very wet conditions, dewatering of the northern LPB area had a low probability (less than 10%) of being restricted by the water access licence (WAL) accounting rules, with the volume of water modelled to be trapped behind the northern LPB being less than 1,458 ML (i.e. two times the full WAL entitlement of 729 ML) over 90% of the time.

The volume of water trapped behind the southern LPB area under very wet conditions was modelled to be approximately 2,928 ML, and the timeframe to dewater the southern LPB would be constrained by current WAL limits. The volume of water required to be pumped from behind the southern LPB area would ultimately be determined by the water level in Lake Cowal at the time the southern LPB was constructed. Construction of the southern LPB is not currently anticipated to commence until year 4 of the Project but this is an early commencement date for OPC South. There is flexibility in the execution date as outlined below.

CGO is closely engaged with DCCEEW Water and is regularly updated on progress toward potential policy amendments, which are currently under consideration by the policy team at the directive of the NSW Minister for Water, which may resolve the WAL restrictions associated with this activity. CGO understand that stakeholder consultations on policy amendments are anticipated to begin early next year, and CGO are optimistic that these efforts will yield a positive outcome. While CGO remains hopeful for a policy amendment to resolve any water licensing constraints which may be present at the time dewatering the southern LPB is constructed, a strategy is in place by CGO to manage the dewatering requirements within current WAL restrictions through timing the southern LPB construction activities when water levels in Lake Cowal are low. The timing to complete construction of the southern LPB area is dictated by the timeframe for development associated with E41 pit. There is flexibility in the mining schedule for mining to commence in E41 pit as E41 pit is not critical to CGO's immediate Project objectives. CGO maintain sufficient low and medium-grade stockpiles, enabling continuous mill feed in the event of any delay to E41 development. This flexibility allows CGO to manage any potential delays arising from the dewatering activities associated with the southern LPB within current water licensing constraints. In addition, and as noted above, water levels in Lake Cowal have been receding. Historical records indicate that Lake Cowal typically experiences natural receding cycles every 3 to 5 years. CGO intend to leverage the natural cycle of water levels in Lake Cowal to construct the southern LPB area during periods when water levels are low, minimising reliance on dewatering and water entitlement requirements.

CGO has sufficient capacity to commence dewatering activities associated with the northern LPB area without exceeding existing WAL limits. Options exist to manage and time the construction of the southern LPB area and commencement of mining in the E41 pit should dewatering the southern LPB area be required to occur within existing WAL limits, and policy amendments not be in place in time.

4 Conclusion

I trust this information is sufficient for your purposes, however if you have any questions or require any additional information regarding this matter, please contact me on 0407 207 530 or email jwearne@emmconsulting.com.au.

Yours sincerely

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