



Dartbrook MOD7 IPC

Muswellbrook – 9 April 2019

Water resources

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Surface water/Groundwater Review

Objective: Independent review and provision of advice regarding whether the available information:

1. Clearly describes and assesses the potential range of operational conditions and behaviour of the project over its projected life?
2. Recognises and defines the associated risks, potential consequences and impacts of the project?
3. Provides clear and robust management and mitigation plans/strategies to meet those risks/impacts?

Conclusion:

- No. It does not meet any of the above fundamental requirements.



1. Assessment of potential range of management conditions?

- **No assessment of the project water balance under potential range of climatic conditions** - average-only values provided for an incomplete list of site water balance inflows/outflows
- **No assessment of project flood risk** - Noting OEH recommendations for appropriate assessment (not undertaken) and subsequent concerns following response to submissions (not addressed).
- **No assessment of the project under potential range of operation**, in particular under conditions in which washery is in operation.
- **No recognition of the impact of climate change** on supply security, groundwater conditions/impacts or flood risk
- **No current groundwater model** – Groundwater conditions are based on the results of a previous model for an essentially different proposal, leading to a lack of quantification of risk and potential impacts to associated groundwater.



Example - Water resource risk

Greater Hunter Regional Water Strategy (NSW DPI, 2018) has identified that:

- Climatic conditions similar to those experienced in the 1940s would see allocations reduced to zero for approximately 12 consecutive years.
- The Upper Hunter is likely to experience less rainfall than previously used for water supply security estimates (i.e. including 1940s).
- Risk of drought is greatly increased due to:
 - Climate change (i.e. increased risk of extreme dry conditions); and,
 - Mine-related reductions in base flows - a direct indication of changed groundwater conditions.

There has been no consideration by the Proponent of these recognised, increased risks



2. Recognise and define the associated risks and potential consequences/impacts of the project?

- Lack of project-specific water balance
 - No valid understanding of drought or flood risk – **operational and financial risks to Project**
 - No quantification of potential groundwater impacts – **risks to other water users**
- Lack of water quality data and analyses
 - despite intended site wide use for dust suppression and as spray curtains on the new shaft – **risks to local water resources**
- Lack of meaningful flood risk assessment
 - Relies on outdated flood assessment - changes to ARR flood estimation guidelines & OEH guidelines for flood risk management (both in 2016)
 - Misrepresents and significantly underestimates project flood risk - **risk to life, as well operational and financial risk to the Project**



3. Clear and robust management and mitigation plans/strategies to meet those risks/impacts?

Proposed approach is ‘reactive’. For example:

- If shaft intercepts Hunter River alluvial aquifer “appropriate sleeving or casing will be installed within the shaft” – no detail given
- No response plan provided if flood levels exceed proposed design level and inundate shaft and/or haul road
- Impact on groundwater described as being addressed “as they occur” and “made good” - no details given.
- No assessment of the impacts on the Weathered Bedrock Aquifers is provided despite being nominated as “the most readily accessible unit for landholders outside the flood plain”



Implications

- 1. Project has not been assessed under the credible range of climatic and operational conditions for planned project.**
- 2. Risks and potential consequences/impacts of the project are therefore unable to be robustly defined and understood.**
- 3. There are no clear and robust management and mitigation plans/strategies to meet those risks/impacts – reactive management.**



Review outcomes

- We, the Proponent, the Department and the IPC still can't be sure what the real impacts would be:
 - No adequate baseline;
 - The Project hasn't been assessed for the range of actual possible conditions;
 - Critical parts of the analysis are outdated; and,
 - Adopts a reactive, 'fix as we go' approach to risks and impacts
- Information does not support the conclusion that the projects impacts would be manageable or acceptable or the project confidently approved



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