West Gippsland
Catchment Management Authority

WGCMA Ref: WG-F-2017-0139
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Your Ref: 358
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OFFICIAL

Fingerboards Mineral Sands Project Inquiry and Advisory Committee

Dear Members Wimbush, Reifschneider, Gibbs and Ginivan,

Regarding: Submission Number 358 - Supplementary submission - Centrifuges

Thank you for the opportunity to comment on the additional information regarding the use of centrifuges to manage tailings from the proposed Fingerboards Mineral Sands Project, in accordance with Direction 32 of the Consolidate Directions dated 19 February 2021.

The West Gippsland Catchment Management Authority has reviewed the documentation and makes the following additional submission for consideration by the Inquiry and Advisory Committee.

The proposed replacement of the Tailings Storage Facility (TSF) with centrifuge technology eliminates the risk associated with failure of the TSF, and the subsequent impacts on the Perry River catchment.

The use of the centrifuge will reduce the demand for freshwater resources due to the increased harvesting from the centrifuge process. This outcome in isolation is a positive improvement. However, the reduction of freshwater demands has been modelled to increase the risk of mine contact water spilling from water management dams and entering the Mitchell and Perry Rivers.

The Proponent plans to use a Dissolved Air Flotation plant (DAF) during peak rainfall events to treat excess mine contact inflows and discharge into the freshwater dam for use in future plant water requirements. However, if the freshwater dam is full then the water will be discharged to the Mitchell River and water management dams may spill to local gullies in the Perry River catchment.

The revised documentation indicates that the risk of water management dams overtopping and discharging to waterways has increased from 2.5% AEP to 3.4% AEP, despite the use of a DAF.

As per our previous submission, the reliance of a temporary mechanical treatment facility to bring the risk rating to the minimum requirement is unwise and leaves no margin for error or redundancies. This presents a significant risk of mine contact water entering natural watercourses either through exceedance of water management capacity and/or failure of the mechanical treatment processes. The documentation is silent on measures to mitigate this risk.

Elimination of the Tailings Storage Facility would also eliminate the risks associated with seepage to groundwater, thus eliminating the risk of adversely impacting the quality of groundwater.

The harvesting of freshwater through the centrifuge process will also reduce the volume of slurry discharged to the mine pit voids. We note that this will reduce groundwater seepage by 32%, thus reducing the risk of groundwater mounding, as modelling in the original EES documents.

Centrate from the centrifuge will be used in the Process water management system. The increased use of Polyacrylamide (PAM) for the purposes of sediment/water separation in the centrifuge will result in an acceleration of contaminates in the Process water. Water quality has been identified as

a non-limiting factor for the Process water requirements, however it has been noted that an increase in the concentration of contaminates may need management or treatment.

The Proponent has not provided any information on the treatment of Process water and the disposal of contaminants.

We note that PAM degrades to form nitrogen, ammonia, carbon dioxide and water. West Gippsland CMA supports the calls in the documentation for further work to "*determine the concentrations and flux of total nitrogen and ammonia that might be generated if residual PAM degrades in the mine void and seeps into groundwater*".

The other issues identified in our submission dated 28 October 2020 remain unchanged as a result of the change from a Tailings Storage Facility to Centrifuge.

The proposed disturbance to landforms, watercourses, and groundwater assets has inherent uncertainty and risk. While some of the uncertainty has been addressed by monitoring programs and adaptive management strategies, safeguards to ensure the adequacy of the monitoring and adaptive management need to be written into the conditions of any approvals.

These need to include collaboration with water and catchment authorities and hold points to prevent over development that leads to negative outcomes.

Thank you for the opportunity to comment on the EES documentation. Should you require any additional information regarding the WGCMA submission please contact [redacted] or via [redacted]

Yours sincerely,

[redacted]

Martin Fuller
Chief Executive Officer