

Submission Cover Sheet

Fingerboards Mineral Sands Project Inquiry and Advisory
Committee - EES

716A

Request to be heard?: Yes

Full Name: Jodie Pitkin

Organisation: East Gippsland Shire Council

Affected property:

Attachment 1: EES_Review_-_Int

Attachment 2: Letter_Minister_

Attachment 3:

Comments: Please see attached submission

Contact:
Telephone No:
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29 October 2020

The Hon. Richard Wynne MP
Minister for Planning

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Dear Minister

Environmental Effects Statement, Draft East Gippsland Planning Scheme Amendment C156 and EPA Works Approval Application – Fingerboards Mineral Sands Project, Fingerboards and Glenaladale

Please find enclosed a written submission which has been prepared by the East Gippsland Shire Council at officer level in relation to the Environmental Effects Statement (EES), Draft Planning Scheme Amendment C156 to the East Gippsland Planning Scheme and the DRAFT EPA Work Approval application.

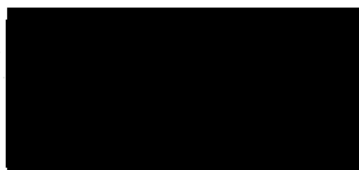
Given the timing of the release of the formal documentation immediately prior to the commencement of the local government election period and during the election period, it has not been possible to gain a formal Council resolution on the matter.

Given these circumstances, we acknowledge that an extension of time has been granted to allow for the preparation and endorsement of a formal written response by East Gippsland Shire Council. It has been agreed that this formal response will be provided by 11 December 2020.

In the interim, please find enclosed a brief written submission as an interim position which has been prepared by Council officers, supported by external consultants, SLR who have been commissioned to provide peer review of the series of technical reports contained within the EES. This outlines the key areas intended to be addressed in more detail as part of the preparation of the final submission.

Key matters have been highlighted in the summary document to provide an outline of the key subject matter which will be addressed in the detailed written submission. These include matters relating to the planning scheme amendment, the land use and planning assessment, soils, land use, horticulture, surface water, ground water, noise and vibration, traffic and transport, ecology, cultural heritage, radiation, air quality, greenhouse gas emissions, rehabilitation social impact assessment, economic impact assessment, environmental risk assessment and the draft work approval.

Yours faithfully



ANTHONY BASFORD
Chief Executive Officer

Enc.

FINGERBOARDS MINERAL SANDS PROJECT

**Kalbar Operations Pty Ltd
EES review- Interim Submission
East Gippsland Shire Council**

Prepared for:

East Gippsland Shire Council
PO Box 1618
BAIRNSDALE VIC 3875

SLR Ref: 640.30078-R01
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SLR 

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with East Gippsland Shire Council (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
640.30078-R01-v2.0	28 October 2020	██████	██████	██████
640.30078.00000-R01-v1.0	22 October 2020	██████	██████	██████

EXECUTIVE SUMMARY

East Gippsland Shire Council has engaged SLR Consulting supported by several additional technical specialist consultancies to provide a targeted review of numerous technical reports and supporting documentation (including Draft Work Plan, Draft Works Approval Application, Planning Scheme Amendment and Landuse and Planning Impact Assessment) contained within the Environment Effects Statement (EES) Package released for public comment on the 3rd September 2020. The review is being undertaken with reference to the final Scoping Requirements for the Fingerboards Mineral Sands Project Environment Effects Statement (EES) released by DELWP in March 2018.

The following sets out the specific matters being technically reviewed in the targeted review of the EES by Councils Technical Advisor. Applicable Best Practice Standards and legislative requirements in Victoria and on a Commonwealth basis were considered during the review. Councils endorsed full response to the EES package will be provided to DELWP by no later than 10:00 AM on the 11th December 2020 in accordance with an extension in response time granted by the Minister in a letter dated 20 September 2020 ref MIN078122. Councils subsequent full response will provide further detail from the targeted review across each of the areas outlined below.

In addressing the Ministers initial submission requirements of Council by no later than 5:00 PM 29 October 2020 the following highlights Councils technical advisor provisional technical or other issues associated with the EES and supporting technical effects assessments.

Planning Scheme Amendment

- Overall, the Planning Scheme Amendment (PSA) adequately addresses the technical requirements and sufficiently describes the need for the Specific Control Overlay (SCO) to simplify the approvals process. However, the PSA will need to provide further detail relating to specific land which applies to the SCO, provide discussion around the Public Acquisition Overlay including authority consultation and indicate the approach to be undertaken with private landowners to signify the purpose and impacts on private land.
- Further infrastructure details are required to be addressed in the incorporated document as well as the staging of the proposal.
- Provide clarity in the explanatory report as to who has been notified of the proposal.
- The predominate use surrounding the site is Farming zone. The explanatory report does not provide detail of land outside of the mining lease area in broader context of the works associated with the mine. Thus, putting onus on the Responsible Authority or individual applicant to facilitate specific commercial uses which are generally prohibited in the zone. The burden is left to the RA to strategize how to provide relevant commercial uses for the expected increase in workers associated with the mine. The explanatory report needs to provide comment around the broader area outside of the mining lease area.
- Discuss further how the proposal gives effect to any relevant state policy, many of these SPPF's are only briefly touched on.

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- The PSA is to provide further comment on how it aligns with the local planning policy framework which encourages mining but also provide a clearer and more contemporary strategic direction on matters included in the MSS such as;
 - Future agricultural land use
 - Goods and services to facilitate personnel – Economic development and business facilitation
 - Housing to facilitate personnel

Land Use and Planning Impact Assessment

- Overall, the land use and planning impact assessment adequately addresses the matters of change of land use, land use impacts and mitigation. The Planning Scheme Amendment which supports the Land Use and Planning Impact Assessment has addressed the technical requirements of the ministerial directions and has addressed the scoping requirements sufficiently.
- The predominate use surrounding the site is Farming zone. The Land Use and Planning Impact Assessment report needs to provide further detail of how private land is affected by the PSA relating to land use compatibility.
- The agglomeration impact section of the report puts responsibility on Council to deal with an unfavorable process. Further discussions are required for how the proposed Fingerboards project constrains the surrounding Farming zone and the need for land uses which may be prohibited in such a zone, but necessary to facilitate the expected mine personnel. The land use and planning impact assessment needs to provide an indication or solution to Council of how this is managed. It is seen unfavorable that a PSA is required to be undertaken by each individual applicant to include an additional permitted use in surrounding land zones, when the need for uses discussed in the agglomeration impacts section at 6.4 is directly impacted by the mining project.
- Existing State and local planning policy favours new industry and commercial activities, however, further comment is required as the MSS has many components to be addressed.

Soils

- No detailed map of Australian Soil Classification (ASC) soil types or recommended stripping depths of soil types. “Mixing” of different soil type topsoil and subsoil during reinstatement-rehabilitation is a key risk. Different soil types (i.e. soil units) should be stripped and stockpiled separately for reinstatement as per the “original” soil type.

A map of ASC soils types within the project area and also recommended topsoil and subsoil stripping depth should be developed.

Landuse

- Key areas of concern (water and dust) forming part of the Horticultural Impact Assessment require more detailed response. Both the Agricultural and Horticultural Impact Assessment have adequately described agricultural practices in the project area, including key factors influencing sustainable cropping and outputs.

Agriculture

- The Agricultural and Horticultural Impact Assessments have adequately described planned land use and the existing beneficial uses within and in the vicinity (local and regional) of the proposed project.

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Horticulture

- The Horticultural Impact Assessments have adequately described planned land use and the existing beneficial uses within and in the vicinity (local and regional) of the proposed project.

Surface water

- It is not clear how the Mitchell River 3% AEP design criteria was determined and whether this is an acceptable level of risk. It is noted that the water balance predicted 3 overflow events during a 117-simulation period which corresponds to a 2.5% AEP event and a 37.5% probability that a mine water discharge event will occur during the 15-year project life.

Further clarification is required for the 3% AEP Mitchell River spillway discharge design criteria and why this is different to the Perry River design criteria of 1% AEP which is a more widely adopted design criteria for mine water runoff.

- The EES attempts to characterise the water quality of mine runoff. This characterisation includes sediment, nutrients and heavy metals but makes no mention of salinity, pH or radionuclides.

It is suggested that an assessment of the mine water runoff to contain salinity, pH or radionuclides is warranted given the predication that mine water discharges could occur through the dam spillways during the Project life.

- Treatment with Dissolved Air Flotation (DAF) has not however been shown to reduce nitrogen or copper levels. Treated water will not meet water quality objectives for nitrogen or copper in freshwater ecosystems directly following treatment.

It is of serious concern that wastewater treatment can not in itself reduce key contaminants such as nitrogen and copper to levels acceptable for direct discharge to a freshwater receiving system. As a dilution strategy is proposed to overcome the DAF system shortcomings a robust assessment of increased contaminant loads to the downstream receiving waters is required.

- The EES surface water impact assessments rely heavily on the site water balance investigation. Although comprehensive, the GoldSim model is based on a number of assumptions and limitations which are detailed within Section 10 of the water balance report. These assumptions and limitations bring with them uncertainty and risk which SLR believes has not been adequately assessed within the EES and water balance and will be the subject of further detail in a further response to be provided by Council. This concern was also raised during the Peer Review undertaken by AECOM in August 2020. SLR shares the concern regarding the potential for the project to be shut down safely if the economics or water resources are reduced or not able to be met in any one year.

Undertake a risk assessment and a strategy for managing 'change' to address the uncertainty associated with all assumptions and limitations of the water balance investigation. A defined specific set of operating rules for the proposed dams (with accountability) is required to assure Council that the general rules detailed in the site water plan will be adhered to during operation.

- The potential environmental consequences associated with failure of the temporary TSF would be extreme, with destruction of downstream aquatic habitats and scour and/or sedimentation of the fine tailings in the receiving creeks and rivers, largely in the Perry River catchment. A failure such as this is a rare event in the mining sector. The Perry River catchment and Gippsland Lakes Ramsar site are highly unlikely to be impacted

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(as the event is not expected to occur) given the standards required for design and operation of such a facility, and short period (five years) proposed for operation. The temporary TSF will be designed, constructed and operated in accordance with the relevant ANCOLD Guidelines on the Consequence Categories for Dams. A Moderate residual risk is the lowest possible ranking for a scenario with an inherent Significant consequence rating.

The risk management plan should be revised to include contingencies for failure of the tailings storage system.

- Due to the lack of surface water flow, the baseline monitoring program did not achieve a sufficient quantity of results to effectively characterise the water quality in the local environment. These data gaps are considered to be unavoidable and acknowledged within the EES with a recommendation to continue the event monitoring of the drainage lines to define a robust baseline, as opposed to comparison with the ANZECC aquatic ecosystem trigger values.

The baseline monitoring program should be continued as stated in the EES. An assessment of risk associated with the existing uncertainty is also recommended. SLR notes that the ANZECC guidelines typically require 2 years of monthly sampling to effectively characterise the water quality.

- Table 8-6 of appendix 6 states that “If required, flocculant treatment (i.e., alum, gypsum or hydrated lime) will be used to drop suspended sediment levels in the stormwater”. However, testing of these flocculants described in Section 6.6 of the ‘Surface Water Assessment Site Study’ identified that alum and hydrated lime were not recommended due to the site-specific characteristics. Reference is provided to MSDS information included in Appendix G for several flocculants proposed to be used in the wastewater treatment systems. MSDS information in Appendix G indicate hydrobond and hydraprime products are toxic to aquatic biota.

Discussion of the MSDS information for flocculant products should include; toxicity of products to aquatic biota, hydrocarbon content of hydrobond in development of analytical testing suites for treated wastewater, the degradation time for hydrobond of greater than 28 days.

Groundwater

With regard to the proposed groundwater borefield to support mine operational water demand SLR has identified the following concerns:

- Drawdown at the bore field is significantly greater than modelled with implications for groundwater availability, and quality
- The bore field is unable to provide the required supply volume and/or a 3 GL/year groundwater license for Latrobe Group cannot be sourced through trade
- Groundwater extraction from shallow aquifer(s) is required to augment supply
- Impact of groundwater extraction on the geothermal properties beneficial use, at depths shallower than 2500 m Beneficial Uses (p.63 refers to 2500 m to 4000m depth)
- Saline intrusion to the Latrobe Group aquifer due to decline in groundwater pressure at coast
- Seepage from TSF and/or mine void tailings impacts the beneficial uses of Balook Formation / Latrobe Valley Group groundwater

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With regard to the proposed filling of voids and mounding SLR has identified the following concerns

- Layering in the Coongulmerang Formation impedes the downward drainage from filled voids
- The use of groundwater for processing and implications for mine void seepage water chemistry
- Increased discharge to GDE and Mitchell River of groundwater with natural concentrations above criteria
- Shallow water table activates discharge to drainage lines on-site, land salinisation, impact on site structures and adjoining pit(s)
- The hydraulic connection between sediments under site, the Mitchell River flats and the Latrobe Valley Group at Woodglen is greater than indicated by the groundwater model.
- Implication for bore field drawdown if tailings seepage is less than modelled

Noise and vibration

- Of concern is the predicted exceedances of the construction noise levels at numerous sensitive properties, are demonstrated to give rise to non-conformance of the criterion. Additionally, there is some questions whether the process has under-estimated the internal noise level.

The EES approach is to wait for the project to commence and subsequent monitoring results to trigger further mitigation. This is not a common approach and does not represent industry best practice, usually mitigation is triggered on the predicted levels.

Traffic and transport

- Insufficient geometric details have been provided to independently verify that the proposed road realignments which EGSC would assume control of will readily conform with relevant design requirements. This information is needed to fully address the ESS Scoping Requirements. Whilst basic cross-sectional details have been provided the practicality of the proposed alignments should be substantiated through the provision of more advanced engineering drawings including for instance long-sections. The proposed alignment of Fernbank Glenaladale Road would for instance result in the need to negotiate challenging topography which may in turn limit in practice the ability to meet various design requirements such as sight distance requirements.
- The proposed use of Racecourse Road under the Post-Avon River Bridge - Option 2 routing scenario is inconsistent with EGSC's planning intent for the road network. The Bairnsdale Growth Strategy identifies that a heavy vehicle bypass of Main Street (Princess Highway) might be facilitated by either Racecourse Road or Bosworth Road however EGSC's subsequent planning (i.e. Bairnsdale Southern Alternative Freight Route) establishes that the intent is for freight movement to be facilitated by Collins Street/Bosworth Road, not Racecourse Road.
- Whilst intersection performance analysis is presented for the Pre-Avon River Bridge routing option, no detailed intersection performance analysis is presented for the two Post-Avon River bridge routing options considered. It is therefore not possible to confirm based on the material contained within the Technical Report for instance if the proposed conversion of the existing Princes Highway / Racecourse Road intersection to a roundabout would afford an appropriate level of service as is required by the EES Scoping Requirements.

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- It is unclear from the reviewed material the mechanism, if any, proposed to ensure that the Post-Avon River Bridge - Option 2 routing scenario would only be relied upon as an interim measure until such time that the Post-Avon River Bridge - Option 1 routing scenario is available. Adoption of the Post-Avon River Bridge - Option 1 routing scenario would be preferable (from a traffic and transport perspective) given that it minimises impacts to the EGSC road network.
- Only a basic scoping assessment has been completed to quantify the pavement service life impacts associated with the proposed use of EGSC's controlled road network. The technical assessment for instance identifies that pavement loadings on Racecourse Road would triple under the Post-Avon River bridge - Option 2 routing scenario. No firm indication of the specific mechanism to manage these impacts is however identified beyond broadly describing a "make-good" type mechanism. Such a mechanism is not considered overly practical in this instance given the potential long-term use of the roads and the inability to readily attribute the cause of pavement deterioration to haulage activity that occurs remote from the project.
- Whilst SLR has focused its assessment on the use and mitigation of impacts on the EGSC's controlled road network, it is noted that amenity impacts to residents of EGSC may arise as a result of the use of Declared Roads. For instance, the use of Lindenow Glenaladale Road, a Declared Road, by project traffic would see a doubling of existing heavy vehicle demands on this road which may result in amenity impacts to residents of Lindenow.

Ecology

- Risk Assessment should consider loss of aquatic habitat through loss of containment hazardous materials/chemical spills including but not limited to Flocculants toxic to aquatic biota and with long retention times on all species and communities. For example, state listed aquatic flora, GDE's, Ecological Communities. Accordingly, further management measures to negate any potential loss of aquatic habitat should be further developed.

Risk Assessment considering loss of aquatic habitat through materials/chemicals spills and further management measures to negate potential impacts should be developed.

- The impacts of contaminants (including nutrients) and their potential impacts on water quality of the Mitchell and Perry Rivers which are connected to the Gippsland Lakes have not been fully discussed other than to assert that under normal conditions no contaminant or sediment related impacts are expected. This requires further consideration with regard to impacts of contaminants (particularly nutrients).

The impacts of contaminants including nutrients on water quality of Perry and Mitchell Rivers requires further consideration.

- The detailed ecological report asserts that the proposed development will not lead to a significant impact to the Gippsland Lakes Ramsar site or any other Ramsar wetland. Table 5.4 of Appendix 5- Significant Impact Assessment concludes that there may be minor changes to groundwater and surface flows and in water chemistry and that the mine is not expected to have impacts on the sub-tidal aquatic beds, coastal brackish or saline lagoons, fringing wetlands, threatened fauna species, threatened flora, waterbird breeding and fisheries resources values of the Gippsland Lakes Ramsar site.

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The potential impacts of minor changes to groundwater, surface water flows and water chemistry due to the proposed mine and the assertion of no effects on the downstream Gippsland Lakes Ramsar site requires further justification.

Cultural Heritage

Aboriginal Cultural Heritage:

- The Cultural Heritage Management Plan (CHMP) is still in preparation and has not been approved. An already approved CHMP is required to be submitted to Council before any statutory authorisation can be granted.

The approved CHMP must not be inconsistent with any statutory authorisation. If the approved CHMP is inconsistent, an amended or new CHMP may be required before the statutory authorisation can be granted.

Historic Cultural Heritage:

- Due to the lack of an historian's report, historic heritage assessment or Archaeological Management Plan, the potential historic heritage values of the project study area have not been sufficiently investigated.

No Historic Heritage Assessment report for the project has been submitted to Heritage Victoria.

Radiation

- Radiological impacts of the Project to workers, the public and the environment are low.
- Adequate controls, that are commensurate with the potential radiological impacts, have been incorporated into the design of the project.
- Management controls are detailed in the documentation, but have yet to be collated into final drafts of a Radiation Transport Management Plan (RTMP), Radiation Management Plan (RMP) and Radioactive Waste Management Plan (RWMP).
- A number of improvement opportunities have been identified within the EES and supporting documentation, however there were no identified radiological related barriers.
- It is suggested that the baseline radiation monitoring is incomplete. Additional pre-operational monitoring to include;
 - Radon and thoron,
 - Radionuclides in flora,
 - Analyses of specific radionuclides (not covered in monitoring to date), and
 - Airborne dust as total suspended particulate (TSP) concentrations.

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Air quality

- Compliance with relevant assessment criteria is predicted for all key indicators of air quality, with the exception of PM₁₀ for which there is the potential for non-compliance with the 24-hour criterion at nearby sensitive receptors during abnormal meteorological conditions (up to four days per year).

The assessment finds that substantial mitigation measures (e.g. ceasing some operations) may be required to avoid exceedances of the 24-hour PM₁₀ air quality criterion under certain meteorological conditions. These mitigation measures should be documented as part of the management plan along with the trigger for their application (e.g. forecast high winds from directions that would increase the risk of impacts at identified receptors).

Greenhouse Gas

- This project is expected to be a relatively minor contributor to the state and national GHG inventories when considering the direct (Scope 1) emissions only.
- GHG emissions associated with road/rail transport are estimated to be a relatively minor contributor to the total Scope 1,2 & 3 emissions from the Project, but the emission factors used in the calculations, or where they were sourced from, is not documented

The emission factors used to estimate the road/rail GHG emissions associated with product transport should be documented in the report to give confidence in the reported Scope 3 emissions.

Rehabilitation

- Closure criteria – SLR considers the following feedback and/or checks are considered relevant to the proposed performance criteria and associated monitoring/measurement:
 - Carrying capacity measurement is not included for grazing land.
 - Auditing for post mining land use compliance is not clearly applicable to progressive rehabilitation and not just at end of mine life.
 - Comparison to pre-mining information for land capability etc. is not clearly identified while that pre-mining or better condition is the target.
 - Radiation surveys and monitoring is not clearly to be taken on rehabilitated areas during progressive rehabilitation and not just at project completion.
 - Site contamination assessment is not clearly considered or related to progressive rehabilitation should it be required based on incidents, historic or recent land use impacts etc. prior to undertaking progressive rehabilitation of relevant areas.

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- Unplanned closure- SLR considers that inadequate information is provided about specific risks associated with unplanned closure and how they would be considered to meet the rehabilitation success and performance. Specifically, additional consideration of the void (stability), erosion and dust (especially tailings), etc. and ramifications of the status and stage of rehabilitation at that time would be important e.g. pumping and recovery of tailings water, seeding, etc. More definition around these considerations linked to operations should be provided in context of unplanned temporary (care and maintenance) or permanent closure.
- Proposed agreements with landholders – while this has been identified as a requirement in the rehabilitation planning, considerations and content are outlined without definition of proposed changes to land use through construction, operations, etc. to closure.

Social Impact Assessment

- Whilst the Risk Assessment and proposed Mitigation Measures under Table 6.1 of the Socioeconomic Assessment are generally clearly outlined, the process for implementing these mitigation measures is a Social Management Plan that will be prepared for the project prior to construction commencing in consultation with key stakeholders including, East Gippsland Shire Council. The absence of a Draft Implementation Strategy/Social Management Plan or Framework as part of the Draft EES is a concern, the key stakeholders and the broader community, including traditional owners, should have the opportunity to review and comment on the proposed implementation strategies that will mitigate and/or compensate for projects impacts as well as those strategies that will provide future community and regional benefits (directly & indirectly).
- We also note that there is no ‘cumulative effects assessment’ as part of the EES (also noted in the Economics Peer Review), this limits the proponents/projects ability to understand the impacts of the competing interests of other regional and sub-regional projects on the labour market, the vulnerable members of the community, businesses, Council’s, NGO’s, community groups and sporting groups etc. The combination of no cumulative effects assessment and no implementation strategy/framework makes it difficult for key stakeholders and the broader community, including traditional owners, to quantify the impacts and expected benefits of the proposed project.

Economic Impact Assessment

- No Cumulative effects assessment has been undertaken for the EES (also noted in the Social Impact Peer Review). A cumulative effects assessment is required to identify to potential economic impacts associated with other regional infrastructure projects being constructed concurrently with the Fingerboards project.
- Tourism analysis included in the EES is not sufficiently detailed to confirm impacts of the project on the tourism sector and is based primarily on visual, landscape analysis and case studies and not a specific Tourism Impact Assessment. Detailed analysis of factors such as potential impacts on accommodation availability during peak tourism periods for specific establishments (likely to have the highest project demand), impacts of construction and operational traffic on tourist routes and visitation patterns etc should also be factored into potential industry costs. Cumulative impacts of multiple concurrent regional infrastructure projects on the tourism sector / visitor economy have not been assessed.

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Environmental Risk Assessment

An initial overview of the Environmental Risk Assessment undertaken and included in the EES for consistency across Technical Disciplines has identified the following deficiencies:

- The Environmental Risk Assessment does not consider loss of aquatic habitat through loss of containment (hazardous materials/chemical spills including but not limited to Flocculants toxic to aquatic biota and with long retention times on all species and communities (e.g.) state listed aquatic flora, GDE's, Ecological Communities.
- Concern regarding the potential for the project to be shut down safely if the economics or water resources are reduced or not able to be met in any one year requires a Risk Assessment be undertaken and a strategy developed for managing 'change' to address the uncertainty associated with all assumptions and limitations of the water balance investigation.
- Risk assessment of closure undertaken across the disciplines, only looks at the closure process i.e. during closure, and not necessarily post-closure.

Draft Work Plan

- The work plan does not address project-related activities outside the mining lease area, including modifications to roads infrastructure, groundwater extraction from bores, rail sidings, pipelines, power transmission infrastructure. It is noted that Appendix B 42(a) of the Guidelines indicate "A description of sensitive receptors in relation to the environment, any member of the public, or land, property or infrastructure in the vicinity of the work" are a required item to both address planning scheme components and the requirements of the guidelines for inclusion in Work Plans.

Additional information should be included in the Work Plan to address these issues required by the Guidelines.

- The Tailings storage facility (TSF) concept design has been based on material properties interpreted from classification tests. It would be expected that specific geotechnical shear strength testing and more detailed laboratory analysis would have been undertaken to support the tailings storage design, in particular shear strength testing. The assessment does not appear to be as detailed as for the pit stability assessment in Appendix -003 Geotechnical Assessment.

Site specific geotechnical investigations should be undertaken to inform the design.

- Section 8.5.3 of the Work Plan- design allows for stage construction of the TSF . However, it is not clear how this is done and whether part or all of the TSF wall when raised will be placed directly on the tailings surface. The general region has experienced earthquake magnitudes of 5.4. This section should be revised to include information on the potential for earthquakes to impact slope stability. The stability assessment should include earthquake loading assessment in accordance with the ANCOLD requirements and the potential for liquefaction of tailings, particularly if embankment raising occurs on the tailings.

The stability assessment should include earthquake loading assessment in accordance with the ANCOLD requirements and the potential for liquefaction of tailings, particularly if embankment raising occurs on the tailings.

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Draft EPA Works Approval

- The Exemption for water treatment and discharge system from the requirement for a planning permit under 52.17 of the East Gippsland Planning Scheme is based on its association with a proposed ongoing mining operation and that it will involve no additional vegetation clearing.

What assurance is there that this condition of no additional vegetation clearance is both currently applicable and will be adhered to during the lifespan of the project

- Mine contact water is described as having the potential to contain suspended solids, nutrients and elements.

Consideration should also be given to the potential for mine contact water to contain radionuclides. This is not considered throughout the draft WAA.

- Site water management modelling indicates that there will be a very low likelihood of spillway discharge from mine contact dams (EMM, 2020). It is predicted that there would be three(3) years over the 117 years modelled where spillway discharge would occur.

This may not be considered acceptable as spillway discharge would initiatively lead to significant sediment releases into Mitchell and Perry River catchments?

- Reference is provided to MSDS information included in Appendix G for several flocculants proposed to be used in the wastewater treatment systems. MSDS information in Appendix G indicate hydrobond and hydraprime products are toxic to aquatic biota.

Discussion of the MSDS information for flocculant products should include; toxicity of products to aquatic biota, hydrocarbon content of hydrobond in development of analytical testing suites for treated wastewater, the degradation time for hydrobond of greater than 28 days.

- Predicted annual volume of water flowing in the Mitchell River may be reduced by 130-270 ML/year (0.02% of annual flow volume) and flows to Perrys River System could be reduced by between 0.05% and 1.05% depending on mine operational conditions.

Do the positive environmental outcomes of preventing the uncontrolled release of mine contact water to the Mitchell and Perry Rivers outweigh the reduction in water flowing to each system?

- Suggested once treatment storage and discharge has been demonstrated to work effectively during first three years of mining operations, Kalbar will seek a licence amendment to allow a second licenced discharge point to the Perry River System.

This license amendment process requires clarification for if undertaken through an EPA license amendment what consultation will be undertaken with Council and other stakeholder and community groups during this process.

- Treatment with Dissolved Air Flotation (DAF) has not been shown to reduce nitrogen or copper levels. Treated water will not meet water quality objectives for nitrogen or copper in freshwater ecosystems directly following treatment.

It is of concern that wastewater treatment can not in itself reduce key contaminants such as nitrogen and copper to levels acceptable for direct discharge to a freshwater receiving system.

- How will Total Nitrogen inputs into freshwater dam be quantified given identified levels in treated water? Details on quantification of nitrogen inputs into freshwater dam from treated water is required.

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- Frequency of water quality sampling during construction, operation and rehabilitation is proposed to occur every two months initially and then quarterly thereafter with the agreement of the regulator.

After an initial period of how long will agreement from the regulator be sought to reduce bimonthly monitoring?

- In addition to requirements for the submission of annual performance statements to EPA Victoria does Kalbar propose to provide the community and other stakeholder groups with regular updates on performance tracking against EPA licence requirements inclusive of responses to any non-compliance incidents?

Reference to any proposed methods for dissemination of annual performance statements and reporting to community and stakeholder groups is required.

