

Presentation of Submission 814 (Debbie Carruthers) on 14/7/2021

A) Background

1. Please refer to my original submission and my supplementary submission on centrifuges, in addition to this submission. The Part B submissions from the East Gippsland Shire Council (Tabled Document 407) and Mine-Free Glenaladale (Tabled Document 451) provide further supporting evidence why the EES has failed to meet its scoping requirements.
2. This Inquiry and Advisory Committee (IAC) was appointed to inquire into the environmental effects of the proposed Fingerboards mineral sands project. Under its terms of reference, the IAC is to “*consider and report on the potential environmental effects of the project, their significance and acceptability, and in doing so have regard to the draft evaluation objectives in the EES scoping requirements and relevant policy and legislation,*” (DELWP, 2020; p 1).
3. To assist the IAC with its task as described in 2 above, in the time available, this submission will address the potential environmental effects of the project, identifying the relevant draft evaluation objective(s) for those environmental effects, and explain why those environmental effects are unacceptable.

B) Draft Evaluation Objectives

4. The draft evaluation objectives for the project are as follows:

1. Resource development: To achieve the best use of available mineral sands resources, in an economic and environmentally sustainable way, including while maintaining viability of other local industries.

2. Biodiversity: To avoid or minimise potential adverse effects on native vegetation, listed threatened and migratory species and ecological communities, and habitat for these species, as well as address offset requirements for residual environmental effects consistent with state and Commonwealth policies.

3. Water, catchment values and hydrology: To minimise effects on water resources and on beneficial and licenced uses of surface water, groundwater and related catchment values (including the Gippsland Lakes Ramsar site) over the short and long-term.

4. Amenity and environmental quality: To protect the health and wellbeing of residents and local communities, and minimise effects on air quality, noise and the social amenity of the area, having regard to relevant limits, targets or standards.

5. Social, land use and infrastructure: To minimise potential adverse social and land use effects, including on agriculture (such as dairy, irrigated horticulture and grazing), forestry, tourism industries and transport infrastructure.

6. Landscape and visual: To avoid adverse effects on the landscape and recreational values of the Mitchell River National Park and minimise visual effects on the open space areas.

7. Cultural heritage: To avoid or minimise adverse effects on Aboriginal and non-Aboriginal cultural heritage.

8. Rehabilitation: To establish safe progressive rehabilitation and post-closure stable rehabilitated landforms capable of supporting native ecosystems and/or productive agriculture that will enable long-term sustainable use of the project area (Kalbar, 2020: Table 5.1; p 5-6).

C) Assessment of Environmental Effects Against Draft Evaluation Objectives

5. **Adverse effects on Aboriginal cultural heritage cannot be avoided:** In the EES, Kalbar acknowledged there will be loss of known and unknown cultural heritage which would be unavoidable. It was reported by GLaWAC at the Hearing on 19 May that prehistoric archaeologically significant artefacts had recently been found indicating the project would be in the middle of a culturally significant trade and transport route. It was also stated that approving the project would cause deep hurt, that traditional owners felt very strongly that they didn't want the project to go ahead and that the CHMP is an approval to harm heritage. It is unconscionable, unacceptable, and deeply disrespectful to ignore the express wishes of the traditional owners. The 7th draft evaluation objective requires the project "*avoid or minimise adverse effects on Aboriginal cultural heritage.*" As it is impossible for this draft evaluation objective to be met, this major failure alone should be enough to stop this project.

6. **Negative social impacts resulting in no social licence:** The role of the IAC is to consider social as well as environmental effects. A social licence to operate a mine is necessary in addition to a mining licence to operate (CSIRO Minerals Division, 2020). The following points are made:
 - a. Kalbar has failed to develop the necessary trust and build confidence in the community about the project to be able to secure a social licence; many examples have and will be provided to the IAC during this Hearing to demonstrate this failure. Resistance to the project is high, particularly from those who are most impacted.

 - b. Over 85% of those living within 3km of the project boundary oppose it with 5% unsure and 10% supportive. The voices of these people are most important as they are the ones who will be directly impacted.

 - c. In the EES, Kalbar identified 49 residences (60% of the total) within 3km of the project boundary (Kalbar, 2020; Table 8.33 p 8-107). There are over 81 residences and one school within 3km of the project boundary; in the EES it was claimed there was no school. As Kalbar did not identify all the residences within 3km, it is highly unlikely their figures are accurate at distances of 5km and 10km. We assert there has been underreporting of residences to reduce the perceived impact of so many people living close to a mine site with radioactive materials.

 - d. The mine footprint is not secure with landholders prepared to contest access to their land. It would be unconscionable to support the project knowing it would result in litigation from landholders.

 - e. There are many risk mitigation strategies in the EES that rely on open communication and committee-driven solutions to resolve problems that will arise; these strategies will fail because there isn't goodwill or trust. If mitigation strategies fail - including the proposed Environmental Review Committee described in Technical Note 027, negative environmental effects will occur. The risk ratings have not taken the failure of mitigation strategies into consideration so risks remain high.

- f. Considering the above, the adverse social effects are significant and not able to be managed or minimised. The community will not accept this project due to its expected unacceptable impacts on them. With no social licence, draft evaluation objective 5 on social impact is not satisfied.
7. **Air quality monitoring data unreliable**: Concerns about the location of the only weather monitoring station were reported to Kalbar's consultants at a community meeting; however, this problem was not rectified. Data recorded and used in air quality modelling will not reflect true wind conditions where the mining will occur and therefore, will not be accurate. The reported impact of dust (air quality) on sensitive receptors will not be reliable leading to risks of unacceptable health impacts particularly on children, who, according to expert witness Associate Professor Ruff, should have no exposure to radiation. The Government has a duty of care not to add to the cancer burden of children and the community. Being below limits, targets or standards as cited in the EES is no longer a basis for assessing acceptability according to the new EPA Act and therefore this aspect of the draft evaluation objective is no longer relevant. DHHS's evaluation of the risks is unreliable as it is based on data that was faulty due to the location of the air quality monitoring station. Dr Joyner's review (Tabled Document 541) which uses DHHS's findings can therefore also not be relied upon. It is unacceptable to knowingly expose people, particularly children, to any level of cancer and health risk. {Draft Evaluation Objective 4}
8. **Radioactive monazite in heavy mineral concentrate (HMC), unlike other mines**: Other mineral sands mines remove the monazite from the HMC. Monazite contains thorium and uranium which are radioactive. The export of uranium and thorium contained in the HMC poses moral and ethical issues as raised by Associate Professor Mudd. The proponent failed to address compliance issues with the export of nuclear material which could be used by countries that Australia does not have a pre-existing nuclear safeguard agreement (Tabled Document 234; p 11). {Draft Evaluation Objective 4}
9. **Dangers from bulk handling of HMC at Port of Geelong**: As stated on 3 June, the IAC had understood the HMC was to be transported in a sealed container onto the ship and if this was now not the case, bulk handling would introduce additional risks. Bulk handling of the HMC is now confirmed (Tabled Document 537; p 1). Dust from the HMC is a risk to human health to workers and the community at the project site and wharf. The principle of equity under the new EPA Act 2018, Section 21 (1) on page 35, dictates that "*all people are entitled to live in a safe and healthy environment.*" The adverse risk to human health of this exposure is totally unacceptable. {Draft Evaluation Objective 4}
10. **Risks from tunnel erosion and dispersive soils**: The proponent did not investigate the presence of tunnel erosion nor consider the implications of highly dispersive soils (that are prone to erosion) in their proposed mining operations/infrastructure nor in rehabilitation. With 19 water catchment dams located on unstable soils, there is the potential for them to collapse which could cause loss of life and property damage. As the area is subject to east coast lows with considerable rainfall, such a collapse is foreseeable, potentially impacting downstream in the Mitchell and Perry Rivers and the Gippsland Lakes Ramsar site. {Draft Evaluation Objective 3 & 4}

11. **Unacceptable risks from many people living and working near the mine:**

The health and wellbeing of a very large number of people, including children and workers in the horticulture fields are threatened due to the proximity of the proposed mine. They will be subjected to 24/7 mining operations with concerns not addressed on air quality, noise, and amenity. Under the new EPA legislation, the proponent is required to eliminate or minimise impacts; this is not possible. As advised by Associate Professor Ruff, no level of radiation exposure is safe for children. There are schools and a kindergarten nearby, recreation reserves, community halls, and a golf course. {Draft Evaluation Objective 4}

12. **A 24/7 mining operation poses an unacceptable health risk:** There are many examples of mineral sands mines that are not allowed to operate during the night due to noise concerns. Sleep disruption is a known health risk. The impact on families living in the ‘impact zone’ of this mine from a 24-hour operation is unacceptable due to the known adverse health consequences. This is a residential area, it is not remote, and therefore a mine operating during the night is unacceptable. To operate at night in this populated area is not ethically responsible and should not be allowed. Additionally, trucking cake from the centrifuges to the mine void is proposed to only take place during the day shift which would result in stockpiling of the centrifuge cake overnight. Stockpiling wouldn’t need to occur if night operations were suspended. Stockpiling poses additional risks to the environment and downstream Mitchell River water users from migration of flocculant and tailings; these risks have not been assessed according to Dr Jasonsmith’s supplementary report to her expert witness statement:

“I consider that severe and extreme weather events are characteristic of the south-eastern Australian environment. The potential for substantial rainfall to erode the stockpiles as the result of such an event, and for migration of both the flocculant within the stockpiles as well as the tailings themselves as a result, are two of numerous scenarios that could arise from the stockpiling centrifuged tailings that are not considered within the Fingerboards Technical Note,”
(Jasonsmith, 2021; p 8). {Draft Evaluation Objective 3, 4 & 5}.

13. **Contamination of drinking water supplies:** The IAC has seen the proximity of the Woodglen water storage uncovered reservoirs which are 3.5km downwind from the project. As fine dust particles can travel long distances, there is a high risk that the drinking water supply for most of East Gippsland residents and businesses will be contaminated as fine dust particles cannot be filtered. Nearby residents use water tanks for domestic and stock water. As the air quality modelling is not reliable (refer to 7 above) this will result in unacceptable risks across the East Gippsland Shire that water will not be safe to drink. As there hasn’t been transparent reporting about what is contained in the ore body and therefore in the fine dust, it dictates that the precautionary principle must be followed to protect the health and wellbeing of so many people who live nearby, where children attend schools and to the broader East Gippsland community. {Draft Evaluation Objective 4}

14. **Centrifuges are untested in mineral sands mining and are costly:** There are many project elements that are yet to be fully specified, tested, or understood. As an example, centrifuges have never been used in mineral sands mining, so the risk of a major failure is extremely high considering Kalbar has no experience operating a mine. Centrifuges were introduced because of an error that was made in the water balance that would have increased the water requirements of the project from nearly 3 GL to 5 GL. The following points are made:
- a. Why haven't the big mining giants considered centrifuges economically viable - if they haven't done so how is it that a company with limited finances is able to take on the financial and operational challenge of introducing novel technology? A full business case for their use and all the associated costs hasn't been provided to justify their viability. {Draft Evaluation Objective 1}
 - b. Testing of the centrifuge has only been done at a laboratory scale. Perth water was used in the testing so results will not be the same here as the water will be different. As stated in the 'Testing Aim' in Tabled Document 195, Exhibit 1 to Technical Note 14, from Alfa Laval dated 02/02/21: *"The results must only be considered as an indication (not a guarantee). In full scale equipment, there are a number of variables available which are not possible to test in a laboratory,"* (Kalbar, 2021; Technical Note 14, Exhibit 1 p 23).
 - c. The chain of custody of the samples was not provided to verify their source. As stated in Tabled Document 195 in a report from Alfa Laval dated 02/02/21: *"The age and origin of the sample is unknown to Alfa Laval,"* (Kalbar, 2021; Technical Note 14, Exhibit 1, p 3 & 12).
 - d. Noise testing from the centrifuges was done with the outlets closed so the real noise impact with tailings being processed has not been assessed. As the mine is proposed to operate 24/7, noise will have unacceptable human health impacts. {Draft Evaluation Objective 4}
 - e. As the centrifuges in mineral sands mining are untested outside a laboratory setting, the risks from vibration of these large and powerful machines are unknown and therefore unacceptable at this location considering the unstable ground of dispersive soils which only compound the environmental risks. {Draft Evaluation Objective 4 & 5}
 - f. The two relocatable centrifuge plant buildings are proposed to be 75.6m W x 54.2m D x 12.5m H. There has been no assessment of the environmental effects of these structures and their visibility in the landscape. It is likely that these structures will be seen from the Mitchell River National Park and from other locations given the plateau area where the mine would be located. {Draft Evaluation Objective 5 & 6}
 - g. Water recovery from the centrifuges was questioned by Associate Professor O'Loughlin. The P1 centrifuge test suggested a water recovery rate of 59 - 63%, compared to the desktop laboratory test

results of 72%. This would suggest that a figure of at least 10% less in water recovery would be more realistic which has major consequences for the water balance and how much water would be required. Therefore, more than 4 GL of water will be needed annually so the benefits of centrifuges for reducing water must be severely questioned. {Draft Evaluation Objective 1 & 3}

15. **Massive flocculant use is an environmental timebomb:** Due to the late introduction of centrifuges, a significantly larger volume of polyacrylamide (PAM) flocculant (organic chemicals) will now be required. Serious concerns follow, which are in addition to issues raised in my supplementary submission on centrifuges which impact on draft evaluation objectives 1, 3, 4 & 5:
- a. In Technical Note 014 (Tabled Document 194; p 3) it states:
“The flocculant will be used at a dosing rate of approximately 370 g/tonne of dry solids reporting to the centrifuge. This translates to a nominal (average or usual) dose rate of around 118 kg of flocculant every hour as the centrifuge units nominally receive around 321 tph of solids.” In just one year, a total of over 1 million kilograms (kg) of synthetic organic chemicals would be put into porous soils above the Mitchell River and Gippsland Lakes Ramsar wetlands. Over a period of 15 years of the mine life, that is 15 million kg of flocculants. As stated by submitter 24, Dr Peel, on 2 July: *“In many other jurisdictions in the world this would be a criminal offence, uncontrolled release of synthetic organic chemicals into the subsoil, groundwater, rivers and lakes. No amount of testing, trials or other investigation can determine the likely composition and rate of migration of this material over a 10, 50 or 100 year period. It would be creating a potential timebomb for the future.”* As it is not proposed to clay-line the mine voids where the flocculated centrifuge cake will be deposited, this poses an incredibly serious environmental risk. East Gippsland Water place their dried sludge from their water treatment process in secure landfill.
 - b. In her supplementary expert witness statement for Mine-Free Glenaladale, Dr Jasonsmith confirmed concerns about the use of PAMS when pointing out the anaerobic environment in which the flocculants will be located:
“Anionic polyacrylamide flocculants, such as those proposed for use in the Fingerboards mine, behave differently in environments where there is ample air (called aerobic environments) than in environments where there is restricted air availability (called anaerobic environments). An example of an environment in which it can be considered there is likely to be ample air includes the soil surface — such as occurs in agricultural settings — or well aerated water treatment plants. An example on an environment in which it can be considered likely that restricted air availability occurs includes those where wet clays are buried, particularly in association with organic materials,” (Jasonsmith, 2021; p 6).
 - c. This ‘experiment’ should not be allowed to proceed given its proximity to the Mitchell and Perry Rivers, the unique Chain of Ponds, and the Gippsland Lakes Ramsar location. Knowing that the flocculants are harmful to aquatic life means the environmental risks from the use of centrifuges is unacceptable due to the requirement to use such large quantities of synthetic chemicals.

16. **No guaranteed source of ground or surface water:** Further to point 14(g) above, in relation to water requirements, there is no confirmed source of groundwater as the only pumping test conducted was unsatisfactory. Only 2 GL of the original 6 GL of winter-fill licences from the Mitchell River is available however it has not been determined if Kalbar will be eligible to compete for it. If Kalbar is eligible, the fact that they would be in competition with other irrigation users means that the EES scoping requirements have not been met. Given at least 4 GL of water will be required for the project, and likely more than that, the risks from insufficient water to control dust and rehabilitate pose unacceptable environmental/health effects. {Draft Evaluation Objective 3 & 4}
17. **Consequences of climate change impacts not considered in EES:** Under cross-examination of the proponent's expert evidence, it was stated on 6 May by Mr McAlister that they were not asked to do a climate change assessment. On 10 May, Mr Weidman said climate change wasn't modelled and both he and Mr Sweeney considered that climate change risks would be low due to the length of the project. As the IAC heard during the Hearing, climate change impacts are already being experienced, with a downward trend in river water flows, which are predicted to continue. This reduction will create greater pressure on water users and could lead to winter-fill licences not able to be used. Reliance will therefore be totally on the aquifer. If more than 4 GL is required, with no proven access to groundwater, the maximum proposed to access from the aquifer was 3 GL. How will the shortfall be met? Without sufficient water, this will result in unacceptable health and environmental consequences. {Draft Evaluation Objective 3 & 4}
18. **Economic viability of the resource is not established:** As stated under the 'Purpose' of the *Mineral Resources (Sustainable Development) Act 1990* Clause 1, page 1, "*The purpose of this Act is to encourage mineral exploration and economically viable (emphasis added) mining and extractive industries which make the best use of, and extract the value from, resources in a way that is compatible with the economic, social and environmental objectives of the State.* Clearly the Act does not condone mining at any cost as it must be compatible with the State's economic, social and environmental objectives and obligations, therefore implicitly, mining is not acceptable in all circumstances. In relation to economics, it is important to note that the proponent did not present expert evidence and therefore the economics of the project was not able to be scrutinised to test its bona fides although an economic impact assessment from BAEconomics was part of the EES (Appendix D of Appendix A018). In Tabled Document 187, in response to the introduction of centrifuges, Mr Campbell who gave expert evidence on the topic of economics for Mine-Free Glenaladale presented his arguments that challenged the economics of the project. In his conclusion he stated: "*It remains my opinion that the economic case for the Fingerboards project has been misrepresented, with benefits overstated and costs understated. The proposal for centrifuge use would have been relatively simple if data was provided and if the original cost benefit analysis had followed standard methods. Unfortunately, this is not the case, adding to the uncertainty around the economics of the project,*" (Campbell, 2021; p 1). {Draft Evaluation Objective 1}

19. Viability of pre-existing agriculture/horticulture industries threatened:

The project will significantly threaten the viability of agricultural land uses on and surrounding the mine footprint, and in particular, the Lindenow Valley 'food bowl' that is a close as 500m downwind from the mine project. The value of these important pre-existing industries, the livelihood of their business owners, and the thousands who are directly and indirectly employed are under threat. Concerns are as follows:

- a. The IAC heard from the growers and Dr Premier about risks from contamination of soils, crops and water sources (from dust that will contain toxic substances) leading to the failure of on-farm quality assurance certification. As stated by the Victorian Farmers Federation, on 19 May, growers will have to go to court to claim compensation which is a costly process and puts the onus on the growers to prove the source of contamination. This is putting an unreasonable burden on the growers to prove fault, even though the Government would knowingly be putting that industry in jeopardy if it approves the project, which is unacceptable. {Draft Evaluation Objective 1, 4, & 5}
- b. According to the horticulture industry's irrigation data, if 3 GL of water was redirected to their industry, 3 times more jobs could be created than the possible 200 operations jobs proposed by the project. The best long-term use of this water is for food production. {Draft Evaluation Objective 1, 3 & 5}
- c. Agriculture has a 4.26 times job multiplier (National Farmers Federation; 2017) whereas mining has a 1 times job multiplier (Coffey, 2020; p 29). Therefore, any direct job lost in agriculture has a four times job lost multiplier effect. {Draft Evaluation Objective 1 & 5}
- d. Expansion of the horticulture industry is occurring which was not reported by Kalbar's consultant RMCG. Resolving water security is an ongoing issue for that industry. The IAC heard from submitters that at a recent auction of winter-fill licences, there was more interest than water available. The proponent will be in direct competition with the horticulture/agriculture farmers for water. {Draft Evaluation Objective 1, 3 & 5}
- e. The direct value of the horticulture industry was misrepresented by more than 50% of its current value (was stated as \$62M by RMCG in their report in the EES, when its current value is over \$150M). Furthermore, the indirect value of the horticulture industry was not costed. This was done to diminish the threat that the horticulture industry poses to the project as a major pre-existing industry. Draft Evaluation Objective 1 on resource development requires that the viability of other local industries be maintained. The horticulture industry claims this will not be possible if the project was to proceed and therefore that requirement is not met. The growers who are the experts also said that it is not possible for the adverse environmental effects on irrigated horticulture to be minimised. {Draft Evaluation Objective 1 & 5}

- f. The value of the Lindenow Valley food bowl was recognised in July 2019 when that land was exempted by the Government from mining and minerals exploration, as there was a retention licence also on that land. The exemption was to: *“Permanently safeguard this prime agricultural land that produces world class food and secure the employment opportunities it creates, well into the future,”* as it is an area *“of exceptional agricultural value,”* (Premier of Victoria, 2019). It is contended, there is little point in safeguarding the Lindenow Valley if the Government approves a mine that threatens the very viability of this prime agricultural land and the livelihood of those growers. With Victoria’s expanding population this area is needed in the long-term to protect food security. {Draft Evaluation Objective 1 & 5}

20. **Gippsland Lakes Ramsar wetlands are threatened:** Climate change is already being felt as evidenced by decreasing historic river flow data. It is vitally important that we keep the Mitchell River and the Gippsland Lakes Ramsar site healthy with freshwater flows. The IAC heard that the Gippsland Lakes are already under threat from a range of pollution sources and water diversions. Kalbar claims that discharge from storm events (of water in contact with mined areas) from water management spillways will have a negligible effect on water quality of the river (Kalbar, 2020 Summary report; p 16); no contaminated water should be permitted to leave the site and contaminate the rivers and Gippsland Lakes. The risks of negative impacts on aquatic life and contaminating ground and surface water is unacceptable. It also risks damaging the multi-million-dollar tourism industry that relies on the rivers and lakes. {Draft Evaluation Objective 1, 2, 3, & 5}
21. **Nineteen dams on creeks and gullies pose an unacceptable risk:** These dams pose a huge environmental risk, located on top of a plateau above the Mitchell River, considering the dams will be on soils prone to tunnel erosion. Should a rainfall storm event occur which is probable due to east coast lows, a catastrophic dam collapse is an unacceptable risk. {Draft Evaluation Objective 3}
22. **Technical notes not reviewed by expert witnesses:** Many technical notes have been lodged after experts gave their evidence, and without independent scrutiny of them and their environmental effects. Information was, and is still being released, via technical notes that have not been assessed by the experts. Unacceptable environmental outcomes are highly probable as there has been no oversight of cumulative impacts across expert areas of evidence. An example is the recent advice, after expert evidence was presented, that it is now intended to bulk handle the HMC, containing uranium and thorium, at the Port of Geelong. {Impacts on most Draft Evaluation Objectives}
23. **Reliability of information in EES and technical notes questioned:** The consultants who undertook the technical studies in the EES were sourced and funded by Kalbar. The parameters for their work were specified by the proponent and went as far as Kalbar providing data used in their modelling. The following points are made which impact on all draft evaluation objectives:

- a. During expert evidence from the proponent on 6 May, Mr Muller said the error in the water balance of nearly 2 billion litres (2 GL) of water annually, occurred due to data supplied by Kalbar. This could have had dire unacceptable environmental effects if it wasn't discovered. What other errors are there in the EES that haven't been detected or disclosed?
- b. On the first hearing day the proponent said there was 'no onus of proof'. If that is the case, we can't be assured that environmental effects are able to be avoided or minimised. Mitigation strategies also cannot be relied upon.
- c. Many of the proponent's consultants said there was no baseline data. Without baseline data it can't be proven that the environmental effects will be minimised as thorough testing hasn't been done.
- d. Coffey, a consultant used for many of the EES technical studies included this disclaimer with their EES reports: "*It is not possible to make a proper assessment of this report without a clear understanding of the terms of engagement under which the report has been prepared, including the scope of instructions and directions given to Coffey, and the assumptions made by the relevant Coffey consultants who prepared the report*" (Coffey, 2020; *Important Information about Your Coffey Report – Third Parties*). A copy of the disclaimer was sought before and during the Hearing however it was never provided, only the signed contract.
- e. It became clear during cross-examination at the Hearing that several of the proponent's experts have conflicts of interest, with the expectation of work being awarded should the project be approved. Their evidence is therefore not independent. I have a video from a meeting about the EES before it was released for public exhibition where Kalbar's expert Mr Tony McAlister from Water Tech (that has an office in Bairnsdale) said, "*we are obviously passionate about making sure this project succeeds and we have worked closely to come up with a strategy with the other consultants and these dams are essential to that strategy.*"
- f. On the first hearing day, Mr Stefan Wolmarans who presented the 3D model was introduced as being from Wave Technology. In Technical Note 033 (Tabled Document 524; p 4) he is listed as 'Study Director' on Kalbar's Management/Project Delivery Team.

24. **EES is inadequate with unacceptable environmental risks:** The proponent advised the EPA in Tabled Document 142 that they would not be able to respond to the EPA's questions until several project design matters are resolved. The proponent said they would submit the information to the EPA after the Minister for Planning provides an assessment of the environmental effects for the project (Kalbar, 2021 Tabled Document 142). Since the project design matters haven't been resolved, how can the IAC assess the environmental effects if these important questions from the EPA are not addressed during the Hearing? Clearly the EES is not adequate. The number of changes that have occurred during the Hearing with potential major environmental risks is staggering. The EES is therefore not fit for purpose and must be rejected.

25. **Massive loss of biodiversity is not acceptable:** As we heard during the hearing the amount of disturbed land and the resulting biodiversity loss is massive. This is nothing short of environmental vandalism. Given the recent bushfires in East Gippsland that resulted in such significant loss in biodiversity and habitat, with as many as 2 billion animals dying (Ham, 2021; p 18) it is unconscionable to permit further loss. The status of many species in our region remains unknown, so it is vitally important that any unburnt areas remain undisturbed to aid species recovery and assist with re-colonisation. Furthermore, it is very concerning that most of the biodiversity survey work was undertaken during a drought. Many species will have been missed as a result. How can there be any certainty that further species won't be lost because they haven't been identified due to when the surveying was done? Kalbar has created a pastoral company which will involve animals grazing the land prior to final survey work which will ensure any significant flora disappears. The landscape will be significantly changed; significant species loss is guaranteed which is unacceptable. {Draft Evaluation Objective 2 & 6}
26. **Giant Burrowing Frog species threatened:** This frog has the status of being vulnerable to extinction within the federal Environment Biodiversity Conservation Act (EPBC), the International Union for the Conservation of Nature (IUCN) and the Victorian Flora and Fauna Guarantee Act. With confirmation of its existence in the project area, there is now an obligation to protect this species from extinction. {Draft Evaluation Objective 2}
27. **Grave doubts that rehabilitation will occur or that it will be successful:** Several concerns follow, so, draft evaluation objective 8 & 6 cannot be met:
- a. A review of rehabilitation in Victoria was completed by the Auditor-General's Office in August 2020. Victoria's track record on fully rehabilitated mines is woeful, so there are serious concerns that the same thing will happen here.
 - b. Bonds are not set at a high enough level commensurate with the risks nor have they been appropriately secured in the past leaving the taxpayer to foot the bill (refer to Benambra, and Kralcopic in Bendigo as examples). The fear is that a bond won't be set high enough to reflect the risk.
 - c. A critical concern for the community is about the environmental consequences if this mine project is abandoned or put into 'care and maintenance' due to fluctuations in resource pricing or indeed to avoid costs of any environmental failures - it is likely to be cheaper to walk away then face the costs of an environmental catastrophe.
 - d. Progressive rehabilitation is not mandated in Victoria so there are no guarantees that this would happen here. Progressive rehabilitation was 'promised' at the Douglas mineral sands mine in Western Victoria; a toxic waste dump is a tragic reminder of their failed promises!

- e. And, on the subject of promises, given it will be in the order of at least 15 years before the proposed Grassy Woodlands restoration project could potentially eventuate, that proposal has many challenges not the least of which is realistically, if it can be expected that after that length of time, Dr Gibson-Roy will still be around to see that idea to maturity.
- f. Realistically, plants and particularly trees will struggle to grow and send their roots deep into what will be flocculated soils loaded with synthetic chemicals and tailings.
- g. As clearly shown by MFG's barrister, the photographs in the EES depicting changes in the landscape after mining do not reflect the massive loss of trees and woodlands and presented a cartoonist representation of the landscape that bore no reality to the current complex environment.

28. **Toxicology of ore body not disclosed:** An issue of consistent concern to the community as reflected in submissions lodged through this EES process is about the toxicology of the various minerals in the ore body. The submission presented by Mr Helps on 2 July identified that there are grave risks to the environment and human health. There has not been transparent disclosure by Kalbar to the regulators which is leaving the community vulnerable and at risk of unacceptable health impacts. There is no trust that the proponent is fully declaring what is in the ore body. How can the community ensure that it is protected? The Government, through the recommendations of this committee has a duty of care to ensure the community is protected and the precautionary principle must be applied. {Draft Evaluation Objective 4}

29. **Adaptive management fallacy:** Throughout the hearing we have heard the words 'adaptive management' mentioned as a method the proponent proposes to use to respond to uncertainty. It is clear, there is still a considerable amount of uncertainty in this project! There are potentially severe consequences that can be the result of such an approach. {Potentially impacts on all Draft Evaluation Objectives}

30. As an example of what can happen when adaptive management fails, I would like to read a prosecution summary from a WorkSafe investigation and hearing under the Victorian Workcover Authority:

"On 20 December 2007 a blast was conducted at the Fosterville Gold Mine. The blast was unusual for the mine in a number of ways. It was bigger than usual blasts at the site, was to occur mid-shift which had not previously been done at the site during the period MG Mining had been contracted there, used IKON detonators which had not previously been used at the site which required special expertise of persons from another mine to set up, and was to have the charges fired from the brow back into the ore body rather than the normal practice to fire in sequence from the ore body to the brow. Fosterville failed to identify and plan for the potential risks associated with the blast, in

particular, no attention was given to the effect of the mode of the blast on ventilation or re-entry procedures. Consideration ought to have been given to the risks created by open raisebore holes, production holes and waste fill which led to the fumes travelling downwards one level to an area where work was being undertaken, and fumes were also trapped within the blasted rock and then travelled downwards, a hazard associated with the choke method of blasting. The mine did not have a finalised management plan in place regarding ventilation, nor was there a procedure whereby Fosterville ensured that all aspects of the ventilation system were regularly inspected and monitored. After the blast had occurred, re-entry was authorised underground without the air quality underground being properly tested and the original ventilation circuit re-established. Areas where work recommenced was not tested for carbon monoxide prior to re-entry being authorised. Two miners who returned to work underground on a level directly below where the blasting had occurred were overcome by toxic carbon monoxide fumes and collapsed. Other workers who attended at this time were able to call for assistance prior to also suffering the affects of exposure to carbon monoxide fumes. The emergency response which followed was inadequate and exposed further workers to the toxic fumes. In total, 10 persons suffered carbon monoxide poisoning to various degrees.” (Victorian Workcover Authority, 2010).

31. These workers are lucky to be alive although they have suffered significant long-term health consequences because of this serious workplace accident (Quirk, 2010). The company pleaded guilty, was convicted, and fined a mere \$110,000.

32. Mr Jozsef Patarica, Kalbar’s current CEO was General Manager of the Fosterville gold mine at the time of this workplace accident which is verified in a media article from that time (Cooke, 2007). Mr Patarica said in a newspaper story, *“this was the first time an incident of this nature had occurred. The incident was handled very well, we’re trained to do regular crisis management training, and it was that training that made sure it worked as good as it did.”*

Conclusion

33. Given the consequences to the environment are so great with risks that cannot be resolved I respectfully request that you recommend this project be rejected. Clearly, all the draft evaluation objectives have not been met.

34. This is a wrong place for a mine. I believe this mine project is morally, ethically, environmentally, financially, and socially irresponsible with unacceptable environmental effects.

Thank you for the opportunity to present this submission.

Debbie Carruthers

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