



Mr Nick Wimbush
Chair of the Fingerboards Mineral Sands Project Inquiry and Advisory Committee
Planning Panels Victoria

By email: Fingerboards.IAC@delwp.vic.gov.au

Dear Mr Wimbush

Fingerboards Mineral Sands Project Environment Effects Statement (EES) – EPA’s comments on the Proponent’s latest draft documents – On the papers drafted pursuant to IAC Directions dated 18 June 2021 (and amended on 19 July 2021)

In accordance with the IAC’s Directions dated 18 June 2021 (and amended on 19 July 2021), please find attached the EPA’s written comments on the mitigation register.

EPA has added a sixth column to the table circulated by the Proponent (doc # 696) and included EPA’s comments and proposed drafting. EPA has only commented on the mitigation measures that remain unsatisfactory to the EPA in the context of this project and the IAC hearing.

EPA does not have any comments on the Incorporated Document, other than to note that it supports the option as drafted in clause 6.5.1 regarding the noise management plans and not the alternatives (this is consistent with the EPA’s comments on NV17 attached and the EPA’s Part C submissions).

On 26 July 2021 the EPA received an amended version of the EMF. EPA will endeavour to review this and provide comments as soon as possible.

The EPA also draws the IAC’s attention to the comments it provided on the various risk treatment plans (under the Work Plan) in ‘round 1’ of the without prejudice drafting session (documents #624, #625 and #626). Those comments continue to be supported by the EPA.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Hannah McGuigan'.

**Hannah McGuigan
Principal Solicitor
Legal Services Unit**

27 July 2021

Identifier	Mitigation measure	Submitter comments / drafting	Kalbar proposed mitigation drafting	Kalbar comment	EPA proposed measure and comment
Air quality					
AQ04	<p>Speed limits <u>of 20 km/hr in the event of dusty conditions and 50 km/hr under normal conditions</u> will be implemented and enforced on unsealed project roads to minimise dust generation. <u>[evidence statement of Simon Welchman. [67], TN13 Item 99].</u></p>	<p>It is unclear how the distinction between “dusty” and normal conditions would or could be established or enforced.</p> <p>AQ04 - Specify/define "dusty conditions".</p> <p>Tiered speed limits will be implemented and enforced on unsealed project roads to minimise dust generation as follows:</p> <ul style="list-style-type: none"> - under normal conditions, 20km/hr within 250 metres of sensitive areas and 50km/hr elsewhere - under dusty conditions, further reduce vehicle speed limit to the extent reasonably practicable to minimise dust emissions. 	<p>Speed limits of 20 km/hr in the event of dusty conditions (which includes, without limitation, when dust levels exceed trigger levels specified in the air quality management plan, visual observation indicates dusty conditions, or weather forecasts or conditions indicate a risk of high levels of dust) and 50 km/hr under normal conditions will be implemented and enforced on unsealed project roads to minimise dust generation</p>	<p>Further detail added, however ultimately will require a degree of judgement and practicality.</p> <p>As above.</p> <p>There is some merit in EPA's drafting (and Kalbar does not oppose it per se) however the mitigation as drafted by Mr Welchman is still preferred, as it matches the proposed approach of proactive and reactive management based on real time monitoring, observation and the like.</p>	<p>EPA Comment: The EPA continues to be of the view that it is both practical and sensible to reduce speeds at all times near sensitive areas.</p> <p>The mitigation measure proposed by EPA is reasonably practicable and is tailored to restrict speed close to sensitive areas, being the areas where the risk of harm from dust is greatest.</p> <p>Kalbar acknowledges there is merit in EPA's drafting.</p> <p>EPA proposed measure:</p> <p>Tiered speed limits will be implemented and enforced on unsealed project roads to minimise dust generation as follows:</p> <ul style="list-style-type: none"> - under normal conditions, 20km/hr within 250 metres of sensitive areas and 50km/hr elsewhere - under dusty conditions, further reduce vehicle speed limit to the extent reasonably practicable to minimise dust emissions. <p>Speed limits of 20 km/hr in the event of dusty conditions (which includes, without limitation, when dust levels exceed trigger levels specified in the air quality management plan, visual observation indicates dusty conditions, or weather forecasts or conditions indicate a risk of high levels of dust) and 50 km/hr under normal conditions will be implemented and enforced on unsealed project roads to minimise dust generation</p>

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AQ20	Activities will be restricted, as required, on days when modelling predicts exceedances of air quality criteria at one or more sensitive receptors. Activities to be restricted will include overburden extraction and haulage, ore extraction and grading of roads. Restrictions will be applied to these activities conducted across the whole or part of the project area where required to achieve compliance with air quality criteria.	<p>Activities will be restricted, to minimise the risk of harm from air emissions so far as reasonably practicable, including restricting overburden extraction and haulage, ore extraction and grading of roads. Restrictions will be applied to these activities conducted across the whole or part of the project area where required to minimise the risk of harm from air emissions so far as reasonably practicable.</p> <p>[EPA Comment: As per EPA's cover letter amend to reflect the intent of the GED]</p>	Activities will be restricted, to minimise the risk of harm to human health and the environment from air emissions so far as reasonably practicable, including restricting overburden extraction and haulage, ore extraction and grading of roads. Restrictions will be applied to these activities conducted across the whole or part of the project area where required to achieve compliance with air quality criteria and to minimise the risk of harm from air emissions so far as reasonably practicable.	EPA's drafting added. Requirement becomes to meet criteria and reduce as far as reasonably practicable.	<p>EPA Comment: to reduce overlap and better address the GED, AQ20, AQ13 and AQ21 have been combined and modified. These changes need to be read in conjunction, with the key concern being to ensure that all reasonably practicable measures are implemented to reduce harm from dust and that the ERS not be used as a compliance measure or acceptance criteria, as that is not the purpose of the ERS, as explained in the EPA Publication 1992: Guide to the ERS (June 2021) at p11.</p> <p>EPA proposed measure</p> <p>Apply dust reduction measures to minimise the risk of harm to human health and the environment from air emissions so far as reasonably practicable, including restricting overburden extraction to the use of truck and shovel instead of scrapers and limiting hours of extraction, grading and haulage.</p>
AQ21	<u>Apply dust reduction measures to achieve the PM₁₀ objective in the Environment Reference Standards (Part 2 – Ambient Air)</u>	<p>This measure is unclear. The cessation of dust producing activities during night time hours is a preferred approach.</p> <p>Apply dust reduction measures to achieve the PM₁₀ objective in the</p>	Apply dust reduction measures to achieve the PM ₁₀ objective in the Environment Reference Standards (Part 2 – Ambient Air) of 50 µg/m ₃ (24 hour average), and to minimise the risk of harm from air	<p>Breaking into dots points may assist. Some drafting improvements added accordingly.</p> <p>Note that this measure directly follows Simon Welchman's three scenarios in section 4.1 of his</p>	EPA Comment: As previously highlighted, the ERS is not intended to be used as a compliance measure, see EPA Publication 1992: Guide to the ERS (June 2021) at p11. Rather, all reasonably practicable measures should be implemented to reduce harm to

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	<p><u>of 50 µg/m³ (24 hour average), including use of truck and shovel to extract overburden instead of scrapers and limiting grading, product haul and overburden extraction hours per day, particularly limiting to daytime hours where dispersion potential is greater than at night</u></p> <p><u>[expert witness statement of Simon Welchman, sections 4.1-4.2; TN13, Item 96;</u></p> <p><u>note that PM_{2.5} was already predicted to comply with the Environment Reference Standard objective of 25µg/m³, so was not the subject of these additional mitigations in section 4.1-4.2 of Mr Welchman's evidence].</u></p>	<p><u>Environment Reference Standards (Part 2 – Ambient Air) of 50 µg/m³ (24 hour average), minimise the risk of harm from air emissions so far as reasonably practicable, including use of truck and shovel to extract overburden instead of scrapers and limiting grading, product haul and overburden extraction hours per day, particularly limiting to daytime hours where dispersion potential is greater than at night.</u></p>	<p><u>emissions so far as reasonably practicable, including:</u></p> <ul style="list-style-type: none"> <u>use of truck and shovel to extract overburden instead of scrapers; and</u> <u>limiting the duration of grading, product haul and overburden extraction hours per day (i.e. to reduce 24hr average exposure), particularly limiting to daytime hours (on the basis that dispersion potential is greater than at night).</u> 	<p><u>evidence statement, needed to achieve further PM₁₀ reductions to achieve ambient standards in accordance with the EPR.</u></p> <p><u>Some dust producing activity will occur at night, however not the highest dust producing activities (because dispersion is lower at night, therefore particulate concentrations are higher).</u></p> <p><u>EPA drafting added, however quantitative requirement retained also as this is an important part of the mitigation.</u></p>	<p>the environment and human health from dust.</p> <p>Additionally, as set out in EPA's submission (Doc #514) it is well accepted that the '24-hour' criteria is not an appropriate trigger level for mitigation action. Rather, a shorter averaging period (1-hour) should be used. A 1-hour trigger level of 80mg/m³ has already been accepted by Kalbar (see Air RTP Doc #506, Table 9-1, item 1).</p> <p>EPA understands that the "further additional mitigation measures" or "scenario 3 mitigation measures" which are set out in this AQ21 were recommended by Mr Welchman due to the failure to achieve the PM₁₀ quantitative objective in the <i>modelling</i> (hence EPA accepts what Kalbar is saying about the PM₁₀ 24 hour objective being "an important part"). However, EPA submits that the 24-hour objective should not be used as a <i>monitoring</i> trigger for implementing the mitigation action in this AQ21. Rather they should be implemented where they are reasonably practicable as set out in the re-drafted AQ20 or guided by real time air quality monitoring.</p> <p>As already set out there is also a lot of overlap between AQ20, AQ21 and AQ13. EPA recommends that the proposed measure below replace both AQ21 and AQ13 (and be read in conjunction with AQ20).</p> <p>EPA notes that it is difficult to cross refer to the Air RTP in the mitigation measures</p>

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					<p>given the Air RTP is only in draft and has not formed part of this 'round 2' without prejudice drafting session. Accordingly EPA has inserted the specific air monitoring requirements.</p> <p>EPA Proposed measure: Contingency procedures will be implemented if (once air emissions have been minimised so far as reasonably practicable) real-time air quality monitoring and visual monitoring observations indicates that air quality trigger levels (eg hourly PM10 readings of 80ug/m3 and visible dust) have been reached near key sensitive receptors. Contingency measures may include, ceasing, slowing or relocating high dust producing activities such as overburden excavation, transport of overburden / product and grading.</p>
AQ22	<p><u>Corrective actions must be implemented, and authorities notified, if rainwater monitoring at surrounding properties (carried out in accordance with EMF Chapter 12, Table 12.9 – baseline and operational) exceeds Australian Drinking Water Guideline limits).</u></p>	<p>This measure is unclear as to what is proposed to be monitored and the corrective actions proposed. Presumably it relates to monitoring of water stored in rainwater tanks. It is unlikely that rainwater itself would exceed Australian Drinking Water Guidelines. AQ# - Draft new mitigation measure (similar) for corrective actions and</p>	<p>Corrective actions must be implemented, and authorities notified, if rainwater tank monitoring at surrounding properties (carried out in accordance with EMF Chapter 12, Table 12.9 – baseline and operational) exceeds Australian Drinking Water Guideline limits.</p>	<p>Drafting clarified. "AQ# - Draft new mitigation measure (similar) for corrective actions and monitoring of Woodglen Water Storage." Agree. See below. "AQ# - Also include monitoring for PM2.5." Not agreed. All air quality indicators are to be monitored. A mitigation expressly referring to PM2.5 is not necessary. Accept that this will be need to be picked up in the Water RTP. This</p>	<p>EPA Comment: The reference to the "Water RTP" in EPA's earlier comments was made in error, EPA's intention from its round 1 comments was that AQ22 be amended to be in accordance with the EPA's comment on the Air RTP (Table 9-1, item 6). That is to ensure that tanks and dams will be monitored quarterly at a minimum of 13 locations. Again, EPA has not cross-referred to the Air RTP given it is still a draft document and instead has inserted the specific requirements into AQ22.</p>

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	<p>[expert evidence of Simon Welchman, [71], TN13 Item 102. See also Airborne and Deposited Dust Risk Treatment Plan, Table 9-1, Item 6]</p>	<p>monitoring of Woodglen Water Storage. AQ# - Also include monitoring for PM2.5. [EPA Comment: recommend this be amended to reflect the Water RTP]</p>		<p>measure derives from the air quality work by Katestone and therefore presently sits within the AQ mitigation measures and the Draft Air RTP. However, the drafting of this mitigation measures seems appropriate.</p>	<p>EPA proposed measure: Corrective actions must be implemented and authorities must be notified, if quarterly rainwater tank and dam monitoring, carried out at a minimum of 13 locations, surrounding properties (carried out in accordance with EMF Chapter 12, Table 12.9 — baseline and operational) exceeds Australian Drinking Water Guideline limits.</p>
AQ24			<p>A commitment to conduct continuous visual observation monitoring (e.g. video monitoring) of high dust generation activities.</p>	<p>Kalbar initiated change as per Tabled Document 598 (RTP reconcile)</p>	<p>EPA Comment: As set out in EPA's comments on the Air RTP (#625) it should be made clear that visual monitoring is not just about video monitoring. It is about actively surveying visible dust (dust plumes, deposition on surfaces etc).</p> <p>EPA proposed measure A commitment to conduct Continuous visual observation monitoring will be conducted (e.g. video monitoring and actively surveying visible dust) of high dust generation activities.</p>
Groundwater					
GW19	<p>Kalbar will work with SRW to encourage owners of unregistered bores to have their bores licensed. Once registered, those bores will be</p>	<p>EPA recommends the modelling includes all known bores (and an assumption about unknown ones) regardless of registration status. It is not clear what this means or how it would mitigate a risk.</p>		<p>It is unclear what the assumption that Kalbar is being asked to make is. Registration of unregistered bores would enable bore users to access compensation (cf. Water Act 1989, s 56(1)(x))</p>	<p>EPA Comment: TN013 at item 65 (p27) states "Submission 716 recommends consideration of unregistered users that may exist within the modelled zone of influence around the groundwater bore field. I believe that this is a reasonable suggestion and agree with a recommendation that Kalbar make enquiries with landowners</p>

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	<p>incorporated into any modelling undertaken as part of the groundwater licence application.</p> <p>[In response to recommendations made by John Sweeney in TN013 No.65]</p>	<p>It may something that Kalbar wishes to do but it is not clear how it mitigates risk.</p>			<p><i>within the nominated drawdown zone to identify active, potentially unregistered bores, as part of the groundwater licence application.</i></p> <p>EPA's understanding was that this mitigation measure had been aimed at trying to include unregistered bores in the modelling information – for example for the groundwater model to assume there were a number of unregistered bores and to seek to allow for this in its model. This is something that the EPA supports.</p> <p>EPA proposed measure: Groundwater models will include an allowance for unregistered bores based on the best information available at the time the models are prepared. Kalbar will work with SRW to encourage owners of unregistered bores to have their bores licensed. Once registered, those bores will be incorporated into any modelling undertaken as part of the groundwater licence application.</p>
<p>GW20</p>	<p>Predicted process water quality will be reviewed as part of the updated water balance currently in preparation.</p> <p>[In response to recommendations made by John</p>	<p>EPA Comment: EPA requires specific information on the re-use of process water prior to a determination on the development licence (the draft s 50(3) notice specifically refers to “considerations of the long-term average process water quality for total and dissolved metals, as well as other water quality parameters</p>	<p>Investigate and produce information (to EPA satisfaction) on the re-use of process water and its quality, with specific consideration given to total and dissolved metals, as well as other water quality parameters such as total dissolved solids, nutrients and other solutes. Information, including monitoring through the commissioning will be included in</p>	<p>Accept that this will information will be required as part of the development licence application and its resolution will be a relevant risk reduction measure for the Project.</p>	<p>EPA Comment: EPA will require information <i>prior</i> to making a decision (ie as part of the DL application) and also <i>after</i> making a decision, if the development licence were to be issued. EPA retains discretion as to any licence conditions it may impose.</p> <p>EPA proposed measure: Investigate and produce information (to EPA satisfaction) on the re-use of process water</p>

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	<p>Sweeney in TN013 No.70]</p>	<p>such as total dissolved solids, nutrients and other solutes that may concentrate over time and what effect will this have on management and disposal options for the centrate. Please provide Kalbar's detailed consideration of the potential impact this may have on the quality of water entrained with, and leaching from, tailings"). Additionally, EPA may require further monitoring during commissioning of the Project. This should be reflected in the mitigation measure.</p> <p>It is unclear when this is to occur and does not appear to be a mitigation measure.</p>	<p>the EP Act 2017 development licence application.</p>		<p>and its quality, with specific consideration given to total and dissolved metals, as well as other water quality parameters such as total dissolved solids, nutrients and other solutes. Information, including monitoring through the commissioning will be included in the any EP Act 2017 development licence application.</p>
Noise and vibration					
NV03	<p>Unless a noise assessment based on plant noise emission data and predicted received noise levels indicates that noise reduction is unwarranted (e.g., because the noise source would not increase the received</p>	<p>[EPA Comment: As per EPA's cover letter, language to be updated to reflect the GED (eg replace "unwarranted")] [EPA Comment: Should include the risk of harm from intrusive character (tonality, impulsiveness, intermittent or low frequency noise)] It is unclear why this is limited to dwellings within 800m rather</p>	<p>When noise from pumping units may affect a noise sensitive area, then temporary acoustic barriers will be used, such as earth bunds or other portable barriers (with the barrier height to exceed the pump height by at least 0.5 m), to reduce noise so far as reasonably practicable.</p>	<p>Mitigation drafting simplified. Re GED / unwarranted. Agree. Drafting seeks to reflect this suggestion. Re 'character (tonality, impulsiveness, intermittent or low frequency noise)'. Kalbar maintains its position that each of these aspects of noise are intrinsic parts of a professional noise assessment. They are specifically assessed</p>	<p>EPA comment: The mitigation measure proposed by Kalbar is considered an improvement, however the following drafting refinement is suggested as barriers may not be the only practical mitigation measures for reducing noise.</p> <p>EPA proposed measure: When noise from pumping units may give rise to a risk of harm to affect a noise sensitive area, then noise impacts will be</p>

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	<p>noise level at a sensitive receptor by ≥1 decibel, with the prediction rounded to the nearest whole decibel), then when pumping units over 500 kVA are located within 800 m of any dwelling, temporary acoustic barriers will be used, such as earth bunds, Echobarrier or FlexShield or other portable barriers (when with the barrier height to exceeds the pump height by at least 0.5 m). The barrier system will incorporate an acoustically absorptive finish to minimise reflected noise.</p> <p>[consistent with oral evidence of Christophe Delaire and Tabled Document 310]</p> <p>[note that a noise source 10dB below</p>	<p>than being based on the extent of increase in noise. It is important to understand which properties would be affected by this measure.</p>		<p>under the Noise Protocol – i.e., A weighted sound levels are based on frequency; character adjustments apply to the tonality, impulsiveness and intermittency'. Accordingly, unnecessary to specify these matters.</p> <p>Agree in principle. This mitigation derives from s10.2.3 of the NVIA. There is limited explanation as to why 800m is nominated. Mitigation redrafted.</p>	<p>reduced so far as reasonably practicable, including by using temporary acoustic barriers will be used, such as earth bunds or other portable barriers (with the barrier height to exceed the pump height by at least 0.5 m), to reduce noise so far as reasonably practicable.</p>

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	<p>the loudest noise source (assessed at a receiver) does not increase the received level (because decibels are based on a Log10 scale). Accordingly, depending on distance and incidental screening, some items of plant will not contribute any appreciable noise to receivers even without the temporary barriers contemplated by this mitigation. Mitigation re-drafted accordingly.]</p>				
NV06	<p>Contingency procedures will be developed and implemented if noise emissions during construction exceed relevant guideline values, including additional mitigation measures to be considered during less favourable meteorological conditions that may</p>	<p>EPA Comment: As per EPA's cover letter, the language should be amended to clearly reflect the GED (eg amend "exceed relevant guideline values").</p>	<p>Contingency procedures will be implemented if noise emissions during construction are observed to exceed adopted noise criteria for the Project. Contingency measures may include, temporary mobile noise screens, scaling back operations, or when high noise levels from construction occur at night and there are no feasible ways of reducing noise levels or re-scheduling the activity, consideration of short term,</p>	<p>Update as per Noise RTP comparison table (Tabled Document 599). These are contingency not 'business as usual' measures, therefore appropriate that noise limits be used as the relevant benchmark (as compared with reducing to the extent reasonably practicable).</p>	<p>EPA comment: Consistent with the EPA's submissions, everything that is reasonably practicable to minimise the risk of harm from noise must be done even if this achieves a result of lower noise levels than the noise criteria. If, for example, temporary mobile noise screens are reasonably practicable to implement and will assist in minimising noise impacts, they should be implemented in the first place and not only in the event of an exceedance of criterion. If this mitigation measure is only about "contingency not 'business as usual'</p>

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	enhance noise emissions from the project area.		temporary relocation for noise-affected occupants.		<p>measures” as Kalbar has submitted, then EPA submits that a separate ‘business as usual’ measure should be created which makes the intent of the New EP Act clear. EPA has recommended a new measure to apply to both construction and operation noise (and therefore it should be created as a separate measure), however, another alternative is to combine this with NV13 which at the moment only applies to plant and equipment. EPA notes that the GED is not a ‘set and forget’, the Proponent is required to proactively monitor and continually improve to ensure the GED is met.</p> <p>The EPA considers it is clearer to keep mitigation measures dealing with “compliance” and “noise criteria” matters separate from those that deal with “reasonably practicable measures”.</p> <p>It should also be made abundantly clear that “high noise levels from construction occur at night” can only happen with the prior approval of the ITR as per NV17.</p> <p>EPA proposed measure: Implement all reasonably practicable controls to minimise the risk of harm to human health or the environment from noise during construction and operation. For example by using temporary mobile noise screens.</p>

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					<p>Contingency procedures will be implemented if residual noise during construction (once noise emissions have been minimised so far as reasonably practicable) is observed to exceed the "acceptance criteria" in the Noise RTP or constitute "unreasonable noise" as defined under the Environment Protection Act 2017 adopted noise criteria for the Project. Contingency measures may include, temporary mobile noise screens, scaling back operations, or, subject to NV17, when high noise levels from construction occur at night and there are no feasible ways of reducing noise levels or re-scheduling the activity, consideration of short term, temporary relocation for noise-affected occupants.</p>
NV11	<p>As the year 1 mining progresses, or moves into a new situation with respect to natural or reconstructed topography, noise modelling will be used to predict compliance at nearby sensitive receptors. Where modelling indicates potential non-compliance, additional mitigation will be implemented, or night shift</p>	<p>EPA Comment: As per EPA's cover letter, should be amended to reflect the New EP Act</p>	<p>As mining progresses, or moves into a new situation with respect to natural or reconstructed topography, or proximity to noise sensitive receivers, noise modelling will be used to predict compliance at nearby sensitive receptors. Where modelling indicates potential non-compliance, additional mitigation will be implemented, or night shift overburden operations will cease to achieve compliance</p>	<p>This should not be limited to year 1. Updated modelling should be undertaken throughout the life of the Project. Reference to proximity added also.</p> <p>This mitigation is principally focussed on updating modelling as activity shifts to new locations across the site and ensuring compliance with noise limits. Reducing noise to the extent reasonably practicably is also a requirement listed separately. The two ideas can work together.</p>	<p>EPA Comment: As the EPA has explained in its submissions, the "noise limits" under the regulations / protocol are but one element in the definition of "unreasonable noise" under the New EP Act (and besides, the "noise limits" are not levels one can pollute up to, they are not to be used as design criteria). This mitigation measure has been redrafted to better reflect the New EP Act, including both the GED and the separate obligation not to emit unreasonable noise from places or premises that are not residential premises.</p> <p>This mitigation measure appears to be similar to NV06 (except that it covers</p>

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	<p>overburden operations will cease to achieve compliance.</p>				<p>operational noise rather than construction noise). EPA therefore recommends similar language to that recommended for NV06. EPA also notes the additional 'business as usual' measure which it has recommended above.</p> <p>EPA recommends that this measure not only cover modelling but also monitoring / observations of noise emissions. This is consistent with the EPA's submissions to ensure continuous improvement and proactive monitoring. It may be that the second paragraph should become a separate mitigation measure.</p> <p>EPA proposed measure:</p> <p>As mining progresses, or moves into a new situation with respect to natural or reconstructed topography, or proximity to noise sensitive receivers, noise modelling will be used to predict compliance noise at nearby sensitive receptors and natural areas. Where modelling indicates potential non-compliance, additional mitigation will be implemented, or</p> <p>Contingency procedures will be implemented if residual noise during operation (once noise emissions have been minimised so far as reasonably practicable) is modelled and/or observed to exceed the "acceptance criteria" in the Noise RTP or constitute "unreasonable noise" as defined under the Environment Protection Act 2017. Contingency measures may include,</p>

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					<p>ceasing night shift overburden operations will cease to achieve compliance.</p>
NV13	<p>Direct treatment through plant noise-reduction kits and cladding or screening of the MUP will be undertaken. Suitable noise-reduction kits have been identified for specific items of plant in consultation with industry specialists (Hushpak and Minetek), as identified in the table below [EPA deleted to save space], which also shows the level of reduction required, and examples of treatments available to achieve the required reduction.</p>	<p>EPA Comment: As per EPA's cover letter, to be updated to reflect the New EP Act (not about just achieving a specific reduction but all reasonably practicable measures)</p>	<p>All reasonably practicable noise controls which demonstrably reduce noise levels at sensitive receptors will be implemented for plant and equipment including noise reduction kits (for example, muffler treatments, engine bay attenuation, air intake and exhaust silencers) and screening and cladding of fixed plant and equipment, including but not limited to mining unit plant, centrifuges and the wet concentrator plant.</p>	<p>Agree.</p>	<p>EPA comment: Reducing noise level is not the only way to reduce impacts (for example, addressing noise character is another way). The current drafting does not reflect the New EP Act.</p> <p>EPA proposed measure: All reasonably practicable controls which may minimise the risk of harm to human health or the environment from noise demonstrably reduce noise levels at sensitive receptors will be implemented for plant and equipment, including noise reduction kits (for example, muffler treatments, engine bay attenuation, air intake and exhaust silencers) and screening and cladding of fixed plant and equipment, (including but not limited to mining unit plant, centrifuges and the wet concentrator plant).</p>
NV14	<p>Noise mitigation measures such as bunding, walls or cladding will be installed at the wet concentrator plant to control noise emissions from the plant to achieve</p>	<p>EPA Comment: As per EPA's cover letter, needs to be amended to reflect the New EP Act</p>	<p>Noise mitigation measures such as bunding, walls or cladding will be installed at the wet concentrator plant to minimise noise emissions from the plant to the extent reasonably practicable and, at a minimum, to achieve</p>	<p>Agree</p>	<p>EPA Comment: Consistent with the EPA's submissions, everything that is reasonably practicable must be done even if this achieves a result of lower noise levels than the noise criteria. The second sentence of this mitigation measure is not needed if the EPA's comments in relation to NV11 are adopted.</p>

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	<p>compliance with noise criteria adopted in the Noise and Vibration Risk Treatment Plan (forming part of the Work Plan).</p> <p>[Deletions below consistent with oral evidence of Christophe Delaire and Tabled Document 310, i.e. too specific]</p>		<p>compliance with adopted noise criteria.</p>		<p>EPA proposed measure:</p> <p>Noise mitigation measures such as bunding, walls, or cladding will be installed at the wet concentrator plant to minimise noise emissions from the plant to the extent reasonably practicable and, at a minimum, to achieve compliance with adopted noise criteria. In the event that the “acceptance criteria” in the Noise RTP are exceeded or the wet concentrator plant gives rise to unreasonable noise, additional contingency measures will be applied.</p>
<p>NV16</p>	<p>Commissioning noise tests will be undertaken at regular intervals and prior to work starting, including checking that bunds have been constructed to specifications required for site compliance with EPA guidelines adopted noise criteria.</p>	<p>EPA Comment: As per EPA’s cover letter, needs to be amended to reflect the New EP Act.</p> <p>Define “regular intervals”</p>		<p>This is a measure that appropriately relates to an objective noise target, rather than reduction to the extent practicable – i.e., checking compliance.</p> <p>Frequency of testing will be in accordance with the relevant management plan.</p>	<p>EPA Comment: Although EPA understands the point that Kalbar makes, it prefers the drafting it proposes below as better reflecting what the testing should be seeking to achieve. For example the bunds may have been designed as a reasonably practicable measure to further reduce noise impacts, even below adopted noise criteria.</p> <p>EPA proposed measure:</p> <p>Commissioning noise tests will be undertaken at regular intervals and prior to work starting, including checking that bunds have been constructed to meet the noise reduction performance required in the</p>

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					<p>project design specifications required for site compliance with adopted noise criteria.</p>
<p>NV17</p>	<p>Noisier activities will be scheduled for less sensitive times of day where practicable and works will be limited as much as practicable during the night and at weekends.</p> <p><u>[Note: EPA drafting as per its EES submission (no. 514) inserted below, with Kalbar's tracking added to EPA's base]</u></p> <p><i>In relation to construction noise, if works are scheduled during night time hours they will be inaudible or approved by a person independent from the Project, prior to commencement, as meeting the definitions of "Unavoidable works", or "low-noise impact</i></p>	<p>EPA Comment: EPA continues to recommend its revised recommendation at paragraph 66 of its submission dated 7 June 2021. EPA does not support the suggested wording below. Additionally, EPA does not support the approach that "all phases of the Project should comply with the noise limits set by the" Noise Protocol. Extending the application of the noise limits to construction activities other than those clearly set out in the Noise Protocol (clauses 52 to 55) is inconsistent with the New EP Act, EP Regulations and the Noise Protocol (in particular, the application of the operational noise limits to all construction activities would mean that some of the impacts will not be addressed due to inadequate assessment, because general construction noise includes specific features that are not well represented by the Effective Noise Levels used in the assessment procedures of the Noise Protocol).</p>	<p>Construction noise</p> <p><u>Option 1 – apply Noise Protocol</u></p> <p>All noise from the Project must not exceed the noise limits specified in EPA Publication 1826.4 (Noise Protocol) applicable to earth resources for both operation and construction (irrespective of the exemption for construction noise provided at rule 117 of the Environment Protection Regulations 2021).</p> <p><u>Option 2 – Apply Chapter 4 of EPA Publication 1834 in full</u></p> <p>Construction noise from the Project must be in accordance with guidance provided at chapter 4 of EPA Publication 1834 (Civil construction, building and demolition guide).</p> <p><u>Option 3 – apply Chapter 4 of EPA Publication 1834, but define 'low noise impact works' by reference to a decibel standard</u></p> <p>Construction noise from the Project must be in accordance with guidance provided at chapter 4 of EPA Publication 1834 (Civil construction, building and demolition guide). For the purpose of applying this Guide, works will</p>	<p>Firstly, this mitigation should be split into two – the first dealing with scheduling of noisier activities, the second dealing with construction noise criteria. The first part has been placed in a new mitigation below (NV17A).</p> <p>Secondly, Kalbar sees three options for the construction noise mitigation, as provided.</p> <p>Kalbar will address the merits of this mitigation further in its Part C submission.</p>	<p>EPA Comment: For the reasons set out in its Part C submissions, EPA's strong preference is for Option 2, modified to indicate the ITR will be the body whose approval is required if night time works are proposed that will be audible in a habitable room. See also paragraphs 61-66 of EPA's substantive submission (Doc #486) for further information on the independent approval role.</p> <p>As per EPA's substantive submission, EPA continues to recommend that residents are notified of unavoidable works, low noise works or managed impact works.</p> <p>EPA proposed measure:</p> <p>Construction noise from the Project must be in accordance with guidance provided at chapter 4 of EPA Publication 1834 (Civil construction, building and demolition guide). Construction noise that is audible inside a habitable room of a residence is permissible if approved by the ITR as 'unavoidable works', 'low-noise works' or 'managed impact works' in accordance with Chapter 4.4 of EPA Publication 1834.</p> <p>Notify residents at least 24 hours prior to "unavoidable works", "low noise impact works" or "managed impact works" commencing.</p>

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	<p>works” or “managed-impact works” in EPA Publication 12541834. Works will be considered “low-noise <u>impact works</u>” or “managed-impact works” in EPA Publication 12541834 if the predicted noise levels are below 26dB indoors at a residential receiver, the noise does not present a tonal, impulsive or intermittent character and; does not include low frequency content that presents a risk of intrusiveness. the Proponent can justify why there is a need to conduct the works outside the recommended standard hours and this justification is approved by a person independent from the Project, and the hours for works considered to be low noise or managed-impact works and it is</p>	<p>Delete or define "practicable"</p> <p>Both the EPA's suggested drafting and the approach articulated by the Council should be adopted as they are not inconsistent; the EPA drafting is more targeted to night time activities. Alternatively night time activities could be prohibited except specific permission of the EPA and a minimum of 48 hours written notice is provided to potentially affected properties.</p>	<p>be considered "low-noise impact works" if the predicted noise levels from construction activity are equal to or less than 26dB inside a residential receiver, the noise does not present a tonal, impulsive or intermittent character and, does not include low frequency content that presents a risk of intrusiveness.</p>		

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	<p><i>supported by the Community Reference Group. [noise already required to achieve low levels to fall within this definition of 'low-noise impact works'.]</i></p> <p>[EPA has deleted the remainder of this column to save space]</p>				
NV33	Equipment will be selected with noise emissions that do not exceed the sound values used in the project noise modelling	The quietest available plant and equipment will be selected for the project, so far as reasonably practicable	The quietest available plant and equipment will be selected for the project, so far as reasonably practicable	Agree	EPA Comment: Kalbar's Part C submissions referred to deleting NV33 (para 399). However, we understand that was in response to a different drafting of NV 33 (ie "Equipment will be selected with noise emissions that do not exceed the sound values used in the project noise modelling"). EPA continues to recommend that this version of NV33 remain.
NV40			Activities which generate the highest potential noise and vibration will not be scheduled at night, where feasible	Kalbar initiated change as per Tabled Document 598 (RTP comparison table)	EPA Comment: this mitigation measure appears to overlap with NV17A (ie NV17A states "Noisier activities will be scheduled for less sensitive times of day where practicable and works will be limited as much as practicable during the night and at weekends."). EPA recommends that this mitigation measure is deleted and NV17A is kept.

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Surface water					
		<p>EPA Comment (from cover letter): It remains confusing which dams and what water many of these mitigation measures are referring to (ie mine contact water or clean stormwater). This has been a constant issue of confusion in the hearing. Recommend language in all mitigation measures is amended to be clear and consistent with the Work Plan</p>		<p>Agree. References are intended as follows “water storage dam” = freshwater storage dam “sediment ponds” = water management dams</p>	<p>EPA Comment: It remains unclear to the EPA what is intended. Does the reference to “freshwater storage dam” refer only to the one large dam? What terminology is being used for the dams that are being used to hold water that has been diverted that does not contain any “mine contact water”. The EPA recommends the dam terminology be consistent and clear so that it is readily apparent to the average reader what the purposes of the dams are and whether they hold ‘clean’ or ‘dirty’ water (adapting the words used at times during the IAC hearing – this is not to suggest the words ‘clean’ and ‘dirty’ are suitable for the mitigation register). It might be best to set out the meaning of these terms in one of the mitigation measures, for example SW04A.</p>
SW11	<p>A daily water balance approach will be applied to dam design to achieve a probability of spillway activation of once per 100 years on average (1% average-exceedance probability) for Perry River catchments, and three times per 100 years on average</p>	<p>MFG has requested we change these figures but this cannot be read in their comments in tabled doc 602 EPA Comment: Recommend clarifying what is the “daily water balance approach”. Is this a reference to SW32 and SW33? EPA have requested that once in 100 years on average 1%</p>		<p>No evidence or material has been provided that the adoption of a 1% AEP of activation would result in materially improved outcomes / avoidance of harm relative to a 3% AEP of activation.</p>	<p>EPA comment: EPA continues to seek the 1% average exceedance probability be applied to both the Perry and Mitchell River catchments. The EPA considers the spill risk of 3.4% to the Mitchell River to be unacceptable given the water quality of untreated mine contact water. The EPA is not obliged to produce evidence or material in support of this. The EPA’s submissions made it clear that it recommends the 1% criteria be applied as it will result in a lower risk of harm.</p>

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	(3.3% average-exceedance probability) for Mitchell River catchments.	average-exceedance probability) for Mitchell River catchments.			<p>EPA proposed measure:</p> <p>A daily water balance approach will be applied to dam design to achieve a probability of spillway activation of once per 100 years on average (1% average-exceedance probability) for Perry River catchments, and three times per 100 years on average (3.3% average-exceedance probability) for and Mitchell River catchments.</p>
SW32	Mine contact water management dams within the Perry River catchment will be emptied as a priority over those located in the Mitchell River catchment to reduce potential water quality impacts from a spillway discharge to the Perry River catchment.	Recommend adding what will trigger emptying the Perry River catchment mine contact water management dams (eg during successive storm events and/or when freeboard within dams is less than 30mm and/or high rainfall events are forecast which may lead to water management dams capacities being exceeded	<p>Pumping from mine contact water management dams will commence when any dams reach a trigger 10% of the dam's capacity. Pumping operations would occur at a discrete number of dams at any one time (ie 1 or 2 dams, not all dams simultaneously), with the dams selected for dewatering assessed daily on the basis of location and stored volume.</p> <p>From the dams triggered, those in the Perry River catchment will be emptied as a priority over those located in the Mitchell River catchment. Amongst dams within the same catchment, dams filled to a higher percentage of total volume would be dewatered with higher priority.</p>	Kalbar has consulted with EMM and provided more detail in updated mitigation, as requested.	<p>EPA Comment: As per EPA's round 1 comments, preventative action should be required in response to a forecast for a large rainfall event.</p> <p>As outlined in EPA's closing submissions there remains significant uncertainty as to the operational arrangement and circumstances for the active management of Water Management Dams and the Freshwater Dam.</p> <p>EPA proposed measure:</p> <p>Pumping from mine contact water management dams will commence when any dams reach a trigger 10% of the dam's capacity or when high rainfall is forecast that is likely to increase the risk of spill. Pumping operations would occur at a discrete number of dams at any one time (ie 1 or 2 dams, not all dams simultaneously), with the dams selected for dewatering assessed daily on the basis of location and stored volume.</p>

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					<p>From the dams triggered, those in the Perry River catchment will be emptied as a priority over those located in the Mitchell River catchment. Amongst dams within the same catchment, dams filled to a higher percentage of total volume would be dewatered with higher priority.</p>
<p>SW49 SW 50</p>		<p>SW# - A plan to reduce the risk of catastrophic failure from the centrifuges will be implemented and must include measures to avoid adverse impacts to the environment and human health in the event of catastrophic failure.</p>		<p>There is no evidence of any material risk of 'catastrophic' failure of the centrifuges and it is not clear that the EPA has the power to regulate a piece of plant that has no direct environmental impacts. To the extent the centrifuges poses a risk to the health of workers, this must be addressed under OHS legislation.</p>	<p>EPA Comment: Mr O'Loughlin's evidence at 23(d) asks "What level of containment do the centrifuge provide in a catastrophic failure event?" (Tabled Document 185, pdf12). He concludes that answers to that question (as well as (23)(a)-(c)) should be sought and further detail on the overall safety features and design of the proposed centrifuge provided.</p> <p>Whilst acknowledging that the EPA Counsel was not present for Mr O'Loughlin's oral evidence, unless these matters were resiled from during his evidence, the EPA considers that the risk of harm to the environment and human health from centrifuge failure should be considered and minimised.</p> <p>EPA proposed measure: All reasonably practicable steps will be taken to minimise the risk of harm to human health and the environment from catastrophic failure of the centrifuges.</p>