Noise Impact Assessment

The comments below relate Vipac Engineers & Scientists Report 29N-14-0048-TRP-472764-0 *Tattersall Lander PTY LTD Bobs Farm Sand Mine Noise Impact Assessment* (dated 09 June 2015), herein referred to as the Vipac noise report.

- The elevation of adopted noise sensitive receptors is not stated – this includes the height above ground assumed in modelling and the presence, or otherwise, of multi storey receivers. Elevated receivers can result in greater levels of noise impact. Where barriers are used as a mitigation measure, the associated effectiveness of same is similarly reduced (often negated).
- Referenced ambient noise level measurements are over two years old. Therefore, there is the potential that the baseline profiles are dated. This will influence the calculated noise goals of the Project and the assessment of associated impacts.
- Attended noise monitoring is not presented in the Vipac noise report. This is useful for characterising ambient noise profiles.
- Meteorological conditions during the monitoring period not provided.
- Measured background noise levels are elevated for a typical rural area. Daily noise logger graphs of measured noise levels not provided so it is not possible to independently consider the appropriateness of this.
- The assessment references the Industrial Noise Policy (2000) – this is now superseded. The current guideline document in Noise Policy for Industry (2017).
- Is not clear if noise measurement equipment is within calibration. This is required under Australian Standards. The assessment is also not clear on noise monitoring procedure and equipment placement.
- The existing level of industrial noise has not been considered. The influence to existing level of industrial noise (or where no industry is present an influence of 10 dB below measured LAeq) is used to set amenity noise goals.
- Noise goals have not been established in accordance within the Industrial Noise Policy. Project amenity levels need to be set at recommended amenity noise level with a correction applied (to ensure no cumulative increases from industrial noise). The Vipac noise report has not taken this approach. The project specific noise levels presented in Table 6 of the Vipac noise report would be expected to be lower if the policy was properly applied (lower noise goals resulting in additional mitigation requirements).
- The number of noise sources (Section 6.2.1 of the Vipac Noise Report) is not stated. Adopted emission profiles (particularly source height) have not been stated.
- Generic source emission levels have been adopted. No comment on indicative operations (idle verse rev for example) or site of plant (conveyor and pumps for example) is provided in the Vipac noise report.
- No assessment of potential annoying characteristics is presented – this includes, but is not limited to: tonality, low frequency, impulsiveness or a combination thereof.
- The location of noise sources as modelled has not been sited.
- Reductions reported for mitigation (exceeding 10 dB in a number of cases and more than 25 dB(A) for R3; R7) are not quantified. This level of noise reduction is significant and unlikely to be achievable.
- The contributions of individual noise sources to predicted noise levels is not stated within the Vipac noise report – sources should be ranked and key sources identified.
- Location and extent of proposed mitigation is not clear from the Vipac noise report.

- Works required to address Vipac noise report assumptions and recommendations have not been outlined (specifics on earth mound placement, maintenance/design of mound or sound power emission verification and ongoing compliance management for example)
- Peak operations includes up to 200 road transport trucks. The number of trucks of site at any one time requires assessment. It is not clear if this has been undertaken. With a Sound Power Level of between 118 to 110 dB(A) as per Table 12 of the Vipac Noise Report, having an additional truck manoeuvring on site would increase potential off-site noise impacts.
- With mitigation, exceedance of project noise limits is present (with project noise limits set being commented on above).
- **Outcome**

The Vipac noise report cannot be relied upon in its current form.

Air Impact Assessment

The comments below relate Vipac Engineers & Scientists Report 29N-14-0048-TRP-516792-2 *Tattersall Lander PTY LTD Bobs Farm Sand Mine Air Quality Assessment* (dated 18 September 2018), herein referred to as the Vipac air report

- Potentially affected sensitive receptor locations are not consistent with the referenced noise impact assessment.
- Number and location of modelled air sources (as modelled) is not clear from the Vipac air report.
- Adopted emission profiles (particularly source type, dimensions and release height) and associated assumptions made in source characteristics have not been stated within the Vipac air report.
- Emission profiles are not clear – no pollutant inventory was provided within the Vipac air report. Emissions in t/year are reported for grouped emissions. Calculated emission factors (g/t; g/kilometre travelled; g/ha for example), and associated emission rates (for each modelled source in g/s; g/s-m2) are not provided.
- Emissions would be present from a number of discrete points from identified fugitive activities (Section 7.3 of Vipac air report) – the conveyor as a line source and at end point for example; or loader handing material then dumping; active face and working face of stockpile; 'mining' is a broad term and application of same within Vipac air report is not clear. Specific sources of emissions should be included and assessed – broadly grouping sources may be overly simplistic and underrepresent potential off site impacts.
- Haul truck movement emissions for Stage 3 are zero (Section 7.3 of Vipac air report) – the reasoning for this is not clear and not considered appropriate based on the information presented.
- Peak operations (up to 200 road transport trucks) does not appear to have been assessed.
- A sample model output file has not been sited – this is required to verify assessment approach and reported results.
- Stage 4 states it is based on 700,000 Mtpa (Table C-1 of Vipac air report). I understand capacity will be 0.75 MtPa. Even allowing for the typographical error, 700,000 tonnes per year is a potential under-estimate of capacity – more than 5%.

- A buking factor would apply for extracted material. This would increase potential emissions and associated potential impacts.
- Daily extraction in Table C-1 of Vipac air report assumes 209 operational days. The basis for this is not clear.
- Continuous operations have been modelled (Section 7.1 of Vipac air report) – the associated impacts are not consistent with expected incremental impacts from a continuous 0.75 Mtpa mining operation with receivers located from 10 metres from the proposed site boundary.
- A paved haul road and two gravel haul roads are assumed – source reductions are stated as percentages (30% and 90%, from a 1978 reference). The applied reductions are considered high. Emission rates should be calculated for specific road characteristics. A paved road would also be unlikely to remain deposit free on an active extraction site – resulting in higher emissions from each vehicle pass by event.
- Screening of mined material has assumed 100% reduction (effectively removing the source) – this is incorrect. Emissions would occur. If covered, entrained air would release at some stage of the process.
- Vehicle movements adopted for haul roads are not stated – emissions from haul roads would be a key source (stated in Vipac air report pp 22 of 63). This is agreed. The speed, size and frequency of movements influence emission factors and subsequent emission rates.
- Erosion of exposed surfaces would be expected at all hours of the day – is not clear if this has been modelled. The adopted threshold velocity (where emissions occur) and size of exposed surface (each source) have not been sited.
- Stage 3 production impacts are zero for five of ten assessed receptors (Table 8-1 of Vipac air report). The basis for having impacts of zero is not clear, nor is it considered reasonable based on the information presented. This is incorrect.
- With controls (commented on above and assuming emission inventory and modelling approach is appropriate) Table 8-2 of Vipac air report demonstrates potential exceedances in PM10 impacts. Is stated that exceedances of background levels were removed (pp 24 of 63 of Vipac air report) – a) Section 5.1 does not state this and b) elevated background levels should not be removed.
- The day of exceedance, and meteorological conditions present which resulted in the exceedance, were not sited.
- The frequency analysis stated in Section 10 of the Vipac air report is based on filtered background concentrations.
- Assessment of potential human health issues, as associated with alpha-quartz (crystalline silica) is required. Safework NSW limit of 0.1 mg/m3 (8 hour time weighted average). Using 30-rule, 8-hour x 3 for 24 hours and a factor of ten for safety, would equate to an environmental goal of 3 micrograms per cubic metre (24 hour average). It is noted that the VIC EPA recommend an annual average of 3 micrograms per cubic meter for crystalline silica.
- **Outcome**

The conclusions of the Vipac air report cannot be verified based on the information presented.