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Dear Mr Freeman

### **Mandalong Southern Extension Project General Terms of Approval - Noise**

I refer to your email to the Environment Protection Authority (EPA) dated 14 August 2014 seeking EPA advice on appropriate noise limits for the project and the supporting documentation titled "*Mandalong Southern Extension Project Response to Submissions March 2014*" (RTS) prepared by Centennial Mandalong Pty Limited (Centennial) which included updated noise monitoring information.

The EPA has reviewed the RTS and advises Department of Planning and Environment (DPE) that the RTS did not adequately address the EPA's concerns regarding sleep disturbance and exploration drilling, such that there was no predictions of the sleep disturbance impact of the proposal, referring only to criteria already presented in the Environment Impact Statement (EIS). To remedy this EPA has recommended that the  $L_{Aeq(15min)}$  predictions are used to estimate an appropriate sleep disturbance limit (ie: 10 dBA is added to the  $L_{Aeq(15min)}$  limit to derive an  $L_{Amax}$  limit).

Centennial have still failed to provide the EPA with predictions of the impact of exploration drilling on sensitive receivers, stating that they will undertake exploration drilling in accordance with the EPA's *Interim Construction Noise Guideline* (ICNG). As a result the EPA cannot provide DPE with noise limits that include exploration drilling. The EPA would require further information on the proposed locations of drilling, times and duration of drilling at each location and the predicted noise levels at the sensitive receiver locations resulting from the exploration drilling occurring concurrently with mine operation.

The EPA's General Terms of Approval for Noise are presented in **Attachment 1**, along with the following advice.

#### **General Terms of Approval**

The EPA's recommended limits in Condition L6.1 do not apply to the establishment works of road construction or site excavation, where they occur during standard hours (7am to 6pm Monday to Friday, 8am to 1pm Saturday, and at no time on Sundays or Public Holidays). Centennial will need to implement all feasible and reasonable mitigation measures for those works (see proposed Condition L6.8).

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Although the ICNG does not apply to mining, the EPA has considered factors including the duration and nature of the proposed establishment works, compared to proposed mining operations.

Monitoring and reporting conditions (L7.7, M8.1 and R4) can be varied and should be negotiated with the proponent and EPA by DPE before being finalised in any project approval.

### **Exploration Drilling**

The information provided so far is insufficient to allow the EPA to nominate noise limits which include exploration drilling. Further details are required on the proposed locations, times and durations of exploration drilling at each location, and predicted noise levels at sensitive receiver locations (resulting from exploration drilling occurring concurrently with mine operation).

Depending on the circumstances it may be appropriate for the INP to apply to exploration drilling. Alternatively, noise impacts associated with exploration drilling may be better managed through strategies often applied to construction-type activities, such as use of the restricted hours of operation and limits contained in the ICNG.

If you wish to discuss this matter further please contact Natasha Ryan on 02 49086833.

Yours sincerely



23 SEP 2014

**MARK HARTWELL**  
**Head Regional Operations Unit - Hunter**  
**Environment Protection Authority**

## ENVIRONMENT PROTECTION AUTHORITY

### ATTACHMENT 1 – Recommended Noise and Meteorological General Terms Of Approval

#### Limit Conditions

**L6.1** Noise generated at the premises must not exceed the noise limits in the table below, unless a written agreement is in place between the licensee and the affected receiver. The locations referred to in the table below are indicated by Table 2 and Figure 4 of the *Mandalong Southern Extension Project Noise Impact Assessment* ("the NIA", SLR 2013). GDA94 locations are approximate eastings and northings from Table 2 of the NIA.

Locality	Location (GDA94 zone 56)	NOISE LIMITS dB(A)			
		Day	Evening	Night	
		L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Aeq</sub> (15 minute)	L <sub>Amax</sub>
R7, R8	356800/6334852, 356805/6334981	43	43	43	53
R3, R9	356184/6334348, 356831/6335113	42	42	42	52
R5	356760/6334116	41	41	41	51
R2, R6	355895/6334569, 356922/6334796	40	40	40	50
R4, R10	356581/6334067, 356863/6335341	39	39	39	49
Any other residence	Any other residential sensitive receiver	35	35	35	45

**L6.2** For the purpose of condition L6.1;

- Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holidays.
- Evening is defined as the period 6pm to 10pm.
- Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holidays.

**L6.3** The noise limits set out in condition L6.1 apply under all meteorological conditions except for the following:

- a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or



- b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
- c) Stability category G temperature inversion conditions.

**[A POINT NUMBER MUST BE INSERTED INTO CONDITION L6.4 AND THE TABLE WHICH FOLLOWS M7.2]**

**L6.4** For the purposes of condition L6.3:

- a) Data recorded by the meteorological station identified as EPA Identification Point <?> must be used to determine meteorological conditions ; and
- b) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.

**L6.5** To determine compliance:

- a) with the  $L_{eq(15 \text{ minute})}$  noise limits in condition L6.1, the noise measurement equipment must be located:
  - approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
  - within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable
  - within approximately 50 metres of the boundary of a National Park or a Nature Reserve.
- b) with the  $L_{Amax}$  noise limits in condition L6.1, the noise measurement equipment must be located within 1 metre of a dwelling façade.
- c) with the noise limits in condition L6.1, the noise measurement equipment must be located:
  - at the most affected point at a location where there is no dwelling at the location; or
  - at the most affected point within an area at a location prescribed by conditions L6.5(a) or L6.5(b).

**L6.6** A non-compliance of condition L6.1 will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at a location other than an area prescribed by conditions L6.5(a) and L6.5(b); and/or
- at a point other than the most affected point at a location.

**L6.7** For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

**L6.8** The limits in Condition L6.1 do not apply to access road construction or site excavation work (not including shaft sinking or exploration) to establish the Mandalong South Surface Site, provided it is:

- a) Undertaken during the hours of 7am to 6pm Monday to Friday, 8am to 1pm Saturday, and at no time on Sundays or Public Holidays; and
- b) Mitigated to the maximum extent feasible and reasonable, to reduce noise impacts.

## **Blasting Conditions**

### **Airblast overpressure level**

- L7.1** The airblast overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.
- L7.2** The airblast overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) at any noise sensitive locations for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

### **Ground vibration level**

- L7.3** Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.
- L7.4** Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/sec at any noise sensitive locations for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

### **Blasting hours**

- L7.5** Blasting at the premises may only take place between 9:00am-5:00pm Monday to Friday. Blasting is not permitted on public holidays.
- L7.6** Blasting outside of the hours specified in L7.5 can only take place with the written approval of the EPA.

### **Blast monitoring**

**[THIS CONDITION (L7.7) CAN BE VARIED AND MUST BE NEGOTIATED WITH THE PROPONENT BEFORE BEING FINALISED IN ANY PROJECT APPROVAL]**

- L7.7** To determine compliance with condition(s) L7.1 to L7.4:

- a) Airblast overpressure and ground vibration levels experienced at the following noise sensitive locations must be measured and recorded for all blasts carried out on the premises;
  - <enter exact location - consider ANZECC guidelines. Lot & DP, street address identifiers should be used >.



- b) Instrumentation used to measure and record the airblast overpressure and ground vibration levels must meet the requirements of Australian Standard AS 2187.2-2006.

NOTE: A breach of the licence will still occur where airblast overpressure or ground vibration levels from the blasting operations at the premises exceeds the limit specified in conditions L7.1 to L7.4 at any "noise sensitive locations" other than the locations identified in the above condition.

- L7.8** The airblast overpressure and ground vibration levels in conditions L7.1 to L7.4 do not apply at noise sensitive locations that are owned by the licensee or subject to a private agreement, relating to airblast overpressure and ground vibration levels, between the licensee and land owner.

### **Monitoring Conditions**

- M7.1** The meteorological weather station must be maintained so as to be capable of continuously monitoring the parameters specified in condition M7.2.
- M7.2** For each monitoring point specified in the table below the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.

**Point** <insert point number as listed in table P1.1>

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Air temperature	°C	Continuous	1 hour	AM-4
Wind direction	°	Continuous	15 minute	AM-2 & AM-4
Wind speed	m/s	Continuous	15 minute	AM-2 & AM-4
Sigma theta	°	Continuous	15 minute	AM-2 & AM-4
Rainfall	mm	Continuous	15 minute	AM-4
Relative humidity	%	Continuous	1 hour	AM-4

### **M8 Requirement to Monitor Noise**

**[THIS CONDITION (M8.1) CAN BE VARIED AND MUST BE NEGOTIATED WITH THE PROPONENT BEFORE BEING FINALISED IN ANY PROJECT APPROVAL]**

**M8.1** To assess compliance with Condition L6.1, attended noise monitoring must be undertaken in accordance with Conditions L6.5 and:

- a) at each one of the locations listed in Condition L6.1;
- b) occur quarterly in a reporting period;
- c) occur during each day, evening and night period as defined in the NSW Industrial Noise Policy for a minimum of:
  - 1.5 hours during the day;
  - 30 minutes during the evening; and

- 1 hour during the night.

d) occur for three consecutive operating days.

### **Reporting Conditions**

#### **R4 Noise Monitoring Report**

**[THIS CONDITION (R4) CAN BE VARIED AND MUST BE NEGOTIATED WITH THE PROPONENT BEFORE BEING FINALISED IN ANY PROJECT APPROVAL]**

A noise compliance assessment report must be submitted to the EPA within 30 days of the completion of the quarterly monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:

- a) an assessment of compliance with noise limits presented in Condition L6.1; and
- b) an outline of any management actions taken within the monitoring period to address any exceedences of the limits contained in Condition L6.1.

### **Additions to Definition of Terms of the licence**

- NSW Industrial Noise Policy - the document entitled "New South Wales Industrial Noise Policy published by the Environment Protection Authority in January 2000."
- Noise - sound pressure levels' for the purposes of conditions L6.1 to L6.7.
- "Noise sensitive locations" includes buildings used as a residence, hospital, school, child care centre, places of public worship and nursing homes. A noise sensitive location includes the land within 30 metres of the building.

