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Attention: Bijoy Joseph

20 February 2012

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BAAL BONE COLLIERY COMPLIANCE NOISE AUDIT FEBRUARY 2012

1.0 INTRODUCTION

Atkins Acoustics was engaged by The Wallerawang Collieries Ltd to conduct an environmental compliance noise audit for Baal Bone Colliery *(BBC)*. The results and findings presented in this report are based on-site attended noise monitoring conducted on Tuesday 14 February 2012 between 4.00pm and 12.00 midnight. Inquiries with site operations confirmed that site activities during the day and nighttime audits were generally restricted to mine ventilation only and during the evening hours trucks were transporting material from an onsite landfill to the bioremediation area north of the main stockpile area. The reference measurement locations *(Attachment 1)* selected for noise monitoring are summarised in *Table 1*.

Table 1. Noise Monitoring Locations

Measurement Location	Description
R1	'Muldon' Residence
R2/R3	'Speirs/Desch' Residence

2.0 MEASUREMENT INSTRUMENTATION

The instrumentation selected included a SVAN949 Sound and Vibration Analyzer. The SVAN meter was programmed to record and store statistical noise levels at 15-minute intervals. The reference calibration level of the instrument was checked prior to and after the measurements with a Bruel & Kjaer Sound Level Calibrator Type 4230 and remained within ± 0.5dBA. The meter and calibrator carried appropriate and current NATA calibration certificates.

3.0 WEATHER CONDITIONS

Weather conditions during the monitoring ranged from calm to light variable winds from the north to north-east, 50-100% cloud cover and temperatures ranging between 16-23°C.

4.0 PROJECT CONSENT NOISE LIMITS

The Licence noise limits for *BBC* are documented in Schedule 3 'Specific Environmental Conditions' of the *DoPI* Conditional Approval (Project Approval 09_0178) dated 14 January 2011.

4.1 Noise Assessment Limits ROM Surface Infrastructure (09_0178)

Condition 4.

By 31 December 2011, the Proponent will ensure that noise generated by the project does not exceed the long-term noise assessment criteria in *Table 1* at any residence on privately owned land or on more than 25 percent of any privately-owned land.

Table 1: Long Term Noise Assessment Criteria

Assessment Location	All periods *dBA LAeq, 15 min*	Night *dBA LA1, 1 min*
Location R1	46	47
Location R2	41	48
Location R3	41	48
All other privately-owned land	35	45

Condition 5.

Until 31 December 2011, the Proponent will ensure that noise generated by the project does not exceed the interim noise assessment criteria in *Table 2* at any residence on privately owned land or on more than 25 per cent of any privately-owned land.

Table 2: Interim Noise Impact Assessment Criteria

Assessment Location	All periods *dBA LAeq, 15 min*	Night *dBA LA1, 1 min*
Location R1	48	47
Location R2	43	48
Location R3	43	48
All other privately-owned land	35	45

Notes to Tables 1 and 2:

- *Noise generated to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy; and*
- *These noise assessment criteria do not apply if the Proponent has an agreement with the relevant owner/s to generate higher noise levels, and the Proponent has advised the DoPI in writing of the terms of this agreement.*

4.2 Comments

Referenced to the *BBC* Noise Management Plan *(NMP)* and the *EPA, Industrial Noise Policy* environmental noise *(INP Section 2.2.1)* is measured or assessed at the most affected point on or within the residential property boundary or, if this is more than 30m from the residence, at the most affected point within 30m of the residence. In accordance with *INP* procedures, the noise levels reported in this report were measured within approximately 30m of the residences.

5.0 MEASUREMENT RESULT

Table 3 presents a summary of the measured ambient sound pressure levels, calculated *BBC* noise contributions and observations recorded during the February 2012 audit.

Table 3. Attended Noise Measurement Results
dBA re: 20 x 10^{-6} Pa

Measurement Location (Start Time)	Measured Ambient Sound Pressure Levels						Licence Noise Limits	Measured Predicted Colliery Noise	Comments
	L_{Aeq}	L_{A90}	L_{A50}	L_{A10}	L_{A1}	L_{Amax}	L_{Aeq}*	L_{Aeq}	
Daytime Audit (4.00pm to 6.00pm)									
Location R1 (1615 hours)	41.2	38.3	40.1	43.1	46.4	52.4	46	<35	Drift ventilation fan; Insects; Breeze in trees.
Location R1 (1630 hours)	41.8	38.2	39.9	42.4	50.8	59.5	46	<35	Drift ventilation fan; Insects; Breeze in trees; Birds 42/3dBA: Rooster 54/5dBA.
Location R2/3 (1655 hours)	46.7	43.3	46.2	48.8	51.4	58.5	41	<35	Drift ventilation fan; Insects; Breeze in trees; Birds.
Location R2/3 (1712 hours)	44.6	42.8	44.1	45.6	49.5	59.6	41	<35	Drift ventilation fan; Insects; Breeze in trees; Birds.
Evening Audit (6.00pm to 10.00pm)									
Location R1 (1800 hours)	43.4	35.1	37.8	45.7	55.0	58.6	46	<40	Reversing alarm 38-40; Truck onsite 48-50dBA; Dozer tracks 40-42dBA; Insects 43-44.
Location R1 (1815 hours)	44.2	36.5	39.7	47.8	54.5	58.1	46	<42	Truck onsite 41-50dBA; Insects 50-52; Rooster 52-54dBA; Birds 57-58dBA; Reversing alarm 41-42dBA.
Location R2/3 (1838 hours)	48.2	38.2	40.5	51.8	59.5	62.5	41	<39	Truck onsite 42-48dBA; Insects 50-52; Rooster 52-54dBA; Birds 57-58dBA; Highway traffic; Plane flyover 58-60dBA.
Location R2/3 (1865 hours)	52.2	38.0	44.9	56.7	62.4	64.4	41	<35	Drift ventilation fan; Insects 50-52; Birds 60-63dBA; Highway traffic.

- *Includes DECC INP +5dB(A) allowance (INP Section 4)

Table 3. Attended Noise Measurement Results. Cont'd
dBA re: 20 x 10^{-6} Pa

Measurement Location (Start Time)	Measured Ambient Sound Pressure Levels						Licence Noise Limits		Measured Predicted Colliery Noise		Comments
	L_{Aeq}	L_{A90}	L_{A50}	L_{A10}	L_{A1}	L_{Amax}	L_{Aeq}*	L_{Amax}	L_{Aeq}	L_{Amax}	
Night Audit (10.00pm to midnight)											
Location R1 (2202 hours)	35.4	34.0	35.2	36.6	38.1	40.2	46	47	<30	<30	Drift ventilation fan; Insects; Highway traffic
Location R1 (2217 hours)	42.6	34.1	35.3	36.7	38.8	40.5	46	47	<30	<30	Drift ventilation fan; Insects; Highway traffic
Location R2/3 (2239 hours)	38.8	37.1	38.5	40.1	41.9	45.4	41	48	<30	<30	Drift ventilation fan; Insects; Highway traffic
Location R2/3 (2255 hours)	39.8	37.9	39.3	41.3	43.7	44.9	41	48	<30	<30	Drift ventilation fan; Insects; Highway traffic

- *Includes DECC INP +5dB(A) allowance (INP Section 4)

Table 4 presents a summary of the measured L_{Aeq} octave band frequency levels including the A-weighted and C-weighted levels.

Table 4. Attended Ambient LAeq Octave Band Noise Measurements
$L_{Aeq,\ 15\ min}$ dB re: 20 x 10^{-6} Pa

Measurement Location	Sound Pressure Level										
	31	62	125	250	500	1K	2K	4K	8K	dBA	dBC
Day											
Location R1	42.1	39.8	39.1	36.9	29.7	28.4	27.7	31.3	40.5	41.2	52.2
Location R1	43.6	39.3	39.8	34.7	29.9	30.2	32.9	34.5	39.6	41.8	47.4
Location R2/3	58.2	50.4	43.8	37.0	33.1	32.6	31.6	34.0	47.0	46.7	59.5
Location R2/3	54.8	45.1	39.4	33.4	29.9	29.1	29.6	33.3	44.9	44.6	56.0
Evening											
Location R1	47.7	45.3	44.3	39.4	31.6	32.3	36.5	38.9	34.3	43.4	50.8
Location R1	49.8	49.7	47.9	40.4	34.2	35.2	37.5	38.1	36.6	44.2	53.6
Location R2/3	52.8	47.2	44.8	42.4	41.1	38.8	43.2	41.4	37.5	48.2	55.5
Location R2/3	55.1	47.1	40.1	32.8	30.2	36.7	48.5	46.9	37.5	52.2	57.6
Night											
Location R1	44.1	37.5	34.7	29.5	22.8	23.8	32.2	27.5	24.1	35.4	46.4
Location R1	43.4	38.6	40.0	38.3	42.9	34.8	34.2	31.4	29.5	42.6	48.5
Location R2/3	45.8	42.5	39.5	32.7	22.4	24.9	35.9	30.9	23.8	38.8	47.9
Location R2/3	48.8	40.8	35.8	30.0	24.5	26.1	36.1	34.0	25.4	39.8	50.6

5.1 Review of Site Investigations

Inquires with the *BBC Environmental Officer* confirmed that no noise incidents have been reported for the period from 4 October 2011 - 14 February 2012.

6.0 DISCUSSION

For the purpose of assessing the compliance status of *BBC* with licence noise limits a site-attended audit and noise measurements were conducted on Tuesday 14 February 2012.

Inquiries with site operations confirmed that site activities during the day and nighttime audits were generally restricted to mine ventilation only and during the evening hours trucks were transporting material from an onsite landfill to the bioremediation area north of the main stockpile area. Local influences to the ambient noise included insects, birds and intermittent road traffic on the Castlereagh Highway.

The $L_{Aeq,\ 15\ min}$ noise levels from *BBC* during the day, evening and night assessment periods satisfied the licence long-term noise limits.

BBC related L_{Amax} noise levels were not observed to cause exceedances of the licence noise limits at measurement locations for the duration of the attended measurements.

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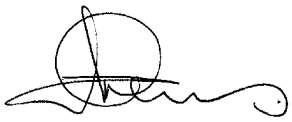

Graham Atkins

ATTACHMENT 1. REFERENCE MEASUREMENT LOCATIONS