Maules Creek Coal Mine Noise Management Plan

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Whitehaven Coal Limited
ABN 68 124 425 396

Level 28, 259 George Street, Sydney NSW 2000
PO Box R1113, Royal Exchange NSW 1225
02 8222 1100
info@whitehavencoal.com.au
www.whitehavencoal.com.au

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1 Introduction

1.1 Overview of approved operations

The Maules Creek Coal Mine (MCCM) is an open cut mining operation located approximately 20km north-east of Boggabri within the Narrabri Local Government Area, in New South Wales.

The mine is owned by a joint venture which is 75% owned by Aston Coal 2 Pty Limited (a company 100% owned by Whitehaven Coal), 15% owned by Itochu Coal Resources Australia Maules Creek Pty Ltd (ICRA MC) and 10% owned by J-Power Australia (J-Power) (hereto referred to as MCCJV). The Mine is operated by Maules Creek Coal Pty Ltd (MCC), a wholly owned subsidiary of Whitehaven Coal (WHC) on behalf of MCCJV.

MCC operates under Approval (MP) 10_0138 (granted 23 October 2012), inclusive of multiple modifications since this date. Further details on each modification can be found in the 'Definition' section of Project Approval (PA) 10_0138.

A full project description, including baseline data, history of operations, current operating approach and mining methods are outlined within the MCC Project Environmental Assessment and previous Annual Environmental Management Reports/Annual Reviews for the site. These documents can be found on the Whitehaven Coal website, see link within section 3 of this document.

1.2 Baseline data

The MCCM is in a rural area and setback from major sources of background noise such as arterial roads or other industrial developments. The Boggabri Coal Mine is located to the south of the MCCM boundary, and the Tarrawonga Coal Mine is immediately to the south of the Boggabri Coal Mine.

Background environmental noise levels were measured as part of the Acoustics Impact Assessment conducted by Bridges Acoustics for the Project's Environmental Assessment (Bridges Acoustics, 2011) and gave background results of below 30dB $LA_{90,15min}$. The Industrial Noise Policy (NSW EPA, 2000) (which was superseded by the Noise Policy for Industry (NSW EPA, 2017)) recommends that background noise levels below 30dB $LA_{90,15min}$ should be considered to have a minimum rating background level of $LA_{90,15min}$ 30 dB for the purposes of determining noise emission limits.

A noise model was developed for the project by Bridges based on the RTA Technology's Environmental Noise Model (ENM) software. The model combines terrain and noise source information with other input parameters such as weather conditions, sound power levels for proposed operational equipment, vehicle traffic, train noise, to predict noise levels at specific receiving locations or as contours over a specified area (Bridges Acoustics, 2011). The calculated cumulative noise impacts expected from nearby Tarrawonga Coal Mine, Boggabri Coal Mine, and MCCM, is $L_{Aeq(15min)}$ minus 3 dB(A) (Bridges Acoustics, 2011).

1.3 Purpose

The purpose of this Noise Management Plan (NMP) is to describe the measures that would be implemented to ensure that best management practice is employed and compliance with the noise conditions of the Project Approval (PA 10_0138) and Environmental Licence (EPL 20221) is achieved.

1.4 Scope

The scope of the NMP applies to all activities at MCCM, including mining, handling, transport, and storage of coal that have the potential to increase noise levels of the immediate and surrounding receiving environment. The initial environmental approvals for MCCM allow for the construction and operation until the end of December 2034 with activities including:

- Construction of infrastructure, utility services, access roads, rail lines, and associated facilities
- Topsoil recovery using scrapers, excavators, dozers and trucks
- Drill and blast activities
- Open cut mining using predominantly hydraulic excavators, haul trucks, and rail
- Haul road maintenance using dozers and graders
- Overburden shaping and dozer push

- Coal loading
- Coal transport along rail spur, rail loop, associated load-out facility, and connection to the Werris Creek to Mungindi Railway Line
- Land rehabilitation activities
- Maintenance activities
- Coal exploration drilling activities

Blasting impacts (vibration, overpressure) are addressed in the Maules Creek Blast Management Plan (Whitehaven, 2024).

2 Legislative requirements

2.1 Project requirements

Requirements and commitments associated with noise are defined within:

- Maules Creek Project Approval PA 10_0138 (Including modifications) (the Approval); and
- Environment Protection Licence (EPL) 20221.

Standards, guidelines and additional legislation relevant to the preparation this NMP and the management of emissions from MCCM are available in section 11. This NMP has been developed in accordance with PA 10_0138 and other relevant conditions, as provided in Appendix 2: Approval conditions'. Table 1 provides a summary of the assessment criteria for noise.

The approval stipulates criteria for construction (and/or upgrade activities) noise and vibration (Schedule 3, conditions 4 to 6), however, only in relation to the rail spur. For the purposes of this NMP, the same criteria have been applied to the access road construction activities.

Table 1 – Approval noise and vibration criteria[1]

Pollutant	Averaging period	Impact assessment		Land acquisition		Mitigation	
		Criterion	Basis	Criterion	Basis	Criterion	Basis
Rail Spur Construction Noise[2] – residence	Day[3]. Otherwise OOHW protocol [4]	40 dB(A)	All privately-owned land LA_{eq} (15min)	If the owner(s) request the acquisition of the residence and land in accordance with the procedures in conditions 8 and 9 of schedule 4 of the Approval	Following a request from the owner(s) to the Secretary for an independent noise impact assessment and the results determine that the noise generated by the project causes, or is likely to cause, sustained	If the owner(s) request mitigation at the residence in consultation with the owner(s) focused on reducing the noise impacts of the project on the residence	Following a request from the owner(s) to the Secretary for an independent noise impact assessment and the results determine that the cumulative noise generated by the project with the noise from other
Rail Spur Construction vibration – structural	Day. Otherwise OOHW protocol		German Standard *DIN 4150-3: Structural Vibration*				
Rail Spur construction	Day. Otherwise		*Environmental Noise*				

[1] Meteorological conditions can cause temperature inversions that can lead to short term noise level increases. In accordance with Condition 17 of the approval, noise criteria will apply during all meteorological conditions as measured at the MCCM All Weather Station (AWS) except rain; and wind speed greater than 3 m/s (10.8 km/hour) (at 10 m height). Schedule 3 condition 15(e) of the approval requires that MCCM '*minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply*'.

[2] Construction of the rail spur is complete. At this time there are no plans to do further construction work on the rail spur. If a decision is made to undertake construction works, all conditions relating to construction will be reviewed and the commitments made to meet these conditions.

[3] Pursuant to Schedule 3, condition 4 of MP 10_0138 Construction and upgrade of MCCM rail spur line and shared section of the Boggabri rail spur line working hours are:
(a) 7 am to 6 pm Monday to Fridays, inclusive;
(b) 8 am to 1 pm on Saturdays; and
(c) at no time on Sundays or public holidays.

[4] Pursuant to Schedule 3, condition 6 of MP 10_0138, "*For areas where construction noise from the Maules Creek rail spur line and shared section of the Boggabri rail spur line is predicted to be at or below 35dB(A) and / or below operational noise criteria at sensitive receptors, and likely to provide sufficient justification to operate outside the standard hours of work, as specified in the ICNG [Interim Construction Noise Guidelines]*" (Department of Environment & Climate Change, 2009).

Pollutant	Averaging period	Impact assessment		Land acquisition		Mitigation	
		Criterion	Basis	Criterion	Basis	Criterion	Basis
vibration – human	OOHW protocol		*Management Assessing Vibration: A Technical Guideline* (Department of Environment and Conservation, 2006).		exceedances of the noise criteria Land subject to acquisition: ~~61-66,~~ 108-109~~,~~ ~~110-114, 117-120, 123-124, 125-131, 132-140, 141-148, 149-155, 236, 256-263~~ Residences subject to acquisition: ~~61,~~ 108, ~~118, 120, 126, 134, 236, 256 and 259~~ For all other residences not listed above, exceeding 40 dB(A) LAeq(15 min) over more than 25% of that land, can request independent noise assessment to the Planning Secretary, according to condition 9, schedule 3.		mine(s) causes, or is likely to cause, sustained exceedances of the noise criteria Residences subject to mitigation: ~~61,~~ 108, ~~118, 120, 126, 134, 236, 256 and 259~~[5] For all other residences not subject to land acquisition, exceeding the cumulative noise criteria, can request independent noise assessment to the Planning Secretary, according to condition 10 and 11, schedule 3.
Operational Noise[6] – residences	Every day, evening and night[7]	35 dB(A)	All privately-owned residences LA_{eq} (15min)				
	Every night	45 dB(A)	All privately-owned residences LA_1 (1min)				
Operational Cumulative Noise – land	Generated by the project combined with the noise generated from other mines day, evening or night	40 dB(A)	All privately-owned land L_{Aeq} (period)				

2.2 Sound power levels

Pursuant to Schedule 3, condition 12 of PA 10_0138 all mining trucks and water carts used on site will be noise suppressed (or attenuated) and all equipment and noise control measures will deliver sound power levels that are equal to or better than the sound power levels identified in the EA and correspond to best practice or the application of the best available technology economically achievable. Where reasonable and feasible, improvements will be made to existing noise suppression equipment as better technologies become available.

Annual testing will be carried out on attenuated plant on site to ensure that the attenuation remains effective (refer to section 6.2.3).

2.3 EPA direction for individual private residence compliance testing

The EPA may direct MCC to carry out compliance testing at an individual private residence. When a direction is received from the EPA to carry out compliance testing with the Leq(15 minute) or LA1(1minute) noise limits in condition L4.1 of the EPL 20221, equipment location requirements are provided in condition L4.7.

[5] Where the owner of one of these residencies have updated for either an agreement to generate higher noise levels or noise mitigation and the owner has reason to believe that the noise impacts at the residence are more than 3 dB(A) above the predicted noise levels for that residence, the owner can request an independent noise impact assessment for the residence in writing. If the Planning Secretary considers that a noise impact assessment is warranted, then MCCM shall commission the assessment. If the assessment confirms that a sustained noise exceedance of more than 3dB(A) is likely the owner of the residence may require MCCM to acquire the residence and land.

[6] Operational noise includes noise from the mining operations and the use of private roads and rail spurs.

[7] Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and public holidays. Evening is defined as the period from 6pm to 10pm and night is defined as 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and public holidays.

2.4 Boggabri-Tarrawonga-Maules Creek (BTM) Complex

The BTM Complex is an existing mining precinct centred within and around the Leard State Forest and includes Tarrawonga Coal Mine, Boggabri Coal Mine and Maules Creek Coal Mine. A Noise Management Strategy (NMS) (BTM Complex, 2017) was developed for the BTM Complex to address the cumulative impacts from the operation of three mines within the same Complex Precinct and address conditions of approval relating to cumulative noise impacts from the operation of the three mines. MCCM approval conditions relating to cumulative noise within the BTM Complex are 15(b), 15(i), and 16(g). Table 2 provides the approval criteria for cumulative noise emissions.

Table 2 – BTM Complex approval criteria

Pollutant	Averaging period	Impact assessment		Land acquisition		Mitigation	
		Criterion	Basis	Criterion	Basis	Criterion	Basis
Noise – cumulative	Generated by the project combined with the noise generated from other mines day, evening or night	40 dB(A)	$L_{Aeq(period)}$	If the owner(s) request the acquisition of the residence and land in accordance with the procedures in conditions 8 and 9 of schedule 4 of the Approval	Following a request from the owner(s) to the Secretary for an independent noise impact assessment and the results determine that the noise generated by the project causes, or is likely to cause, sustained exceedances of the noise criteria	If the owner(s) request mitigation at the residence in consultation with the owner(s) focused on reducing the noise impacts of the project on the residence	Following a request from the owner(s) to the Secretary for an independent noise impact assessment and the results determine that the cumulative noise generated by the project with the noise from other mine(s) causes, or is likely to cause, sustained exceedances of the noise criteria

3 Consultation and communication

The NMP has been prepared in consultation with the Department of Planning, Housing and Infrastructure (DPHI), formally the Department of Environment (DPE). In addition, MCC has extensive consultation and communication processes, including but not limited to:

- A comprehensive community engagement program;
- Periodic engagement with Maules Creek Community Consultative Committee (CCC) and the BTM CCC to discuss the implementation of the BTM Complex Strategies that are in place and minimise the cumulative impacts on the surrounding area;
- Ongoing consultation with relevant government agencies including the Environment Protection Authority (EPA);
- A community response line (1800 942 836) which enables members of the community to contact environment and community staff directly to discuss concerns with noise; and
- Publicly available Approvals, environmental and other related documentation (annual reports, complaints register, CCC minutes) via the Whitehaven Coal website.

4 Risk management

MCC implements a comprehensive risk management system as documented in the Whitehaven Coal HSE Risk Management Standard (WHC-STD-HSE Risk Management) and the Whitehaven Coal HSE Risk Management Procedure (WHC-PRO-HSE Risk Management). Noise risks and their associated control measures are documented in the Maules Creek Broadbrush Risk Assessment; the control measures are summarised in section 5 of this Management Plan. Operational and project related changes that have the potential to materially alter the noise profile are managed through the Whitehaven Coal Management of Change Standard (WHC-STD-Management of Change).

5 Control measures

5.1 Overview of operation controls

The Approval requires MCC to implement reasonable and foreseeable avoidance and mitigation measures regarding noise. Key operational control measures are included in Table 3.

Table 3 – Control measures

Risk	Source	Mitigation Measures	Timing
Noise at private properties exceeds noise criteria	Noise generated from the activities listed in section 1.4	Attended monitoring representative of sensitive residential receivers' locations to ensure compliance. Attended can more accurately determine the contribution of MCCM related activities. Details on attended monitoring are provided in section 6.1.1 and 6.2.1	Ongoing
		Operational noise levels are recorded continuously using unattended equipment (real time monitoring). Details on unattended monitoring are provided in sections 6.1.2 and 6.2.2	Ongoing
		Predictive forecasts in mine planning and the use of real-time noise monitoring to enable reactive management to noise levels (refer to sections section 6.1.2 and 6.2.2)	Ongoing
		Real-time weather monitoring system to measure meteorological conditions that may affect noise propagation. The weather station monitors all parameters consistent with EPL requirements including inversion stability class	Continuous
		Specifically designed muffler systems installed on Hitachi 5000 class trucks	Ongoing
		Silent horn systems on excavator and truck fleet	Night-time operations
		Off-site nighttime inspections to note audibility of noise	Night-time operations
		Noise Compass Directional Noise Monitor	Continuous
		Low frequency noise assessments	Ongoing
		Training of all dispatch and supervisory personnel	Ongoing
		Train load-out noise barriers	Ongoing
		Modifications to plant items at the CHPP	Ongoing
		Mining trucks and water carts used on site will all be noise suppressed (or attenuated)	As required

Risk	Source	Mitigation Measures	Timing
		If the total site sound power including mobile and fixed plant is greater than the most recently approved noise model, additional noise control measures shall be considered (refer to section 6.2.3)	As required
		Sound Power Controls applied to all fixed and mobile plans are tested annually (refer to section 6.2.3)	Ongoing
		Activate Trigger, Action, Response Plan (TARP) (See section 5.3 and Appendix 3: Maules Creek trigger, action, response protocols)	When triggered
		Cumulative noise impacts are managed under the Boggabri-Tarrawonga-Maules Creek Complex (BTM Complex) Management Strategy. Where feasible and practical, modify alignment of haul routes to reduce noise exposure relative to nearby receivers	Ongoing
		A suitably qualified and experienced person/s will review the design of the Maules Creek rail spur line, and determine whether it incorporates all reasonable and feasible noise mitigation measures, including suitable measures to minimise low frequency noise	As required
		Commissioning trials will be carried out on the spur line to determine optimal train speed to minimise noise impacts	As required
		Ensure that only use locomotives that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL (No. 3142) will use Maules Creek rail spur line	As required
		MCC will endeavour to ensure that the rolling stock supplied by service providers on the rail spur line is designed, constructed and maintained to minimise noise	As required

5.2 Key operational control procedures

Key operational control procedures supporting the above air quality management measures as a result of mining activity include:

5.2.1 WHC-CHK-OC-Monthly Site Safety Inspection

This hazard classification checklist assesses the various condition or practices within different areas of the site. It includes a check on noise within the site operation.

5.2.2 WHC-PRO-MANAGEMENT OF CHANGE

This procedure is used to effectively manage changes to equipment, plant, practices, process, or recourses needed to carry out a mine activity. Noise is considered when assessing the impact of the proposed change.

5.2.3 WHC-FRM-OC-Major Component Changeout

This form is used when a major plant or equipment component needs replacement prior to returning the plant or equipment to service. It includes a check for noise from the running equipment.

5.2.4 WHC-STD-Communication and Consultation

This standard describes the communication and consultation requirements from all MCC personnel in relation to the operation of the mine and meeting the Approval conditions.

5.2.5 Out of Hours Work Protocol

Out of Hours Work (OOHW) Protocol has been prepared for any work on the construction (and/or upgrade) of the rail spur that is proposed to occur in the periods outside those permissible. The OOHW Protocol has been developed in consultation with the EPA and the residents who would be affected by the noise generated from these works and approved by the Planning Secretary prior to carrying out any works beyond the permissible hours.

5.3 Trigger, Action, Response Plan (TARP)

MCC has a TARP which specifies what actions are taken in response to real time noise readings (refer to section 6.1.2) that reach or exceed both internally defined noise levels and the noise levels specified in PA 10_0138. The TARP also specifies what actions must be taken if there is a temperature inversion. A copy of the TARP is included in Appendix 3: Maules Creek trigger, action, response protocols. The TARP includes a real-time response matrix that provides guidance for response to recorded noise levels that exceed relevant trigger levels (refer to Table 15, Table 16 and Table 17) of Appendix 3..

6 Noise monitoring

A Noise Monitoring Program has been established to evaluate and report on:

- the effectiveness of the management of noise;
- compliance with noise criteria; and
- compliance with noise operating conditions.

Monitoring is conducted in accordance with NSW EPA's Noise Policy for Industry (NSW EPA, 2017), Environmental Noise Control Manual (SPCC, 1994), "Acoustics – Description and Measurement of Environmental Noise" (Standards Australia, 1997) and "Electro acoustics – Sound Level Meters – Specifications" (Standards Australia, 2004). The effectiveness of the monitoring program will be evaluated each year upon the review of this plan as per the requirements of section 10.2 and reported on each year in the Annual Review.

6.1 Monitoring locations and purpose

6.1.1 Attended monitoring

Attended environmental noise monitoring shall be undertaken once per month during the night period at each location, in accordance with EPL 20221, to assess compliance with relevant noise criteria. Operational noise monitoring locations will be reviewed and where necessary modified based on monitoring results, changes to the mining operations or, changes in land ownership. See Table 4 and Figure 1 for locations.

Table 4 – Attended noise monitoring locations

Location ID	Receiver No
NM1	68
NM2	108
NM3	225
NM4	35
NM5	171
NM6	104

6.1.2 Real-time monitoring

See Table 5 and Figure 1 for locations. Real time data will be used for the following:

- Proactive Management: Management tool for day-to-day operational responses to potential noise issues (noise notification system described in section 5.3 and Appendix 3: Maules Creek trigger, action, response protocols);
- Reactive Management: As an investigative tool to determine the noise contribution of MCC related activities (i.e. in the event of a noise complaint); and
- Noise Model Validation: Annual validation of the noise model will be conducted using both attended and unattended monitoring data to ensure the effectiveness of site noise controls are maintained (section **Error! Reference source not found.**).

The location of the continuous, real-time, noise monitor has been established to form part of the real-time monitoring network for the BTM Complex.

Table 5 – Real-time noise monitoring locations

Location ID	Receiver No	Area represented
RT1	225/236	West
RT2	108	North West and West
RT3	70-77	North
RT4	35	North West
RT5	171	North East
RT6	186	East
DNM	171	North East

6.2 Monitoring procedures

6.2.1 Attended monitoring procedure

Attended noise monitoring will be conducted in accordance with the relevant NSW EPA requirements and AS 1055 *'Acoustics, Description and Measurement of Environmental Noise'* (Standards Australia, 1997). The duration of each measurement is to be 15 minutes. Compliance noise monitoring must not be undertaken during a shutdown period.

If site noise is not measurable due to masking, then suitable methods shall be attempted as per the NSW *Industrial Noise Policy* (INP) (NSW EPA, 2000) (e.g. measure closer and back calculate) to determine a value for assessment of compliance.

In accordance with condition L4.5 of EPL 20221, noise criteria will apply during all meteorological conditions except:

- rain; and
- wind speed greater than 3 m/s (at 10 m height above ground level).

For the purposes of this condition:

- Metrological conditions will be recorded by the station identified in condition P1.4 in the EPL 20221; and
- Temperature inversion conditions (stability category) are to be determined by the sigma-theta method.

For modifying factors, when determining noise generated at the premises, the modification factors in Table C1 in Fact Sheet C for the *Noise Policy for Industry* (NPfI) (NSW EPA 2017) may be applied, as appropriate, to the noise measurements by the noise monitoring equipment.

Individual results above criteria from preliminary assessment are notified following the attended monitoring. Further data validation by an independent noise specialist is undertaken with results provided to the EPA and the DPHI as soon as available.

Only attended noise monitoring will be used to determine compliance. Real time monitoring will be used for operational management purposes only.

The below protocol will be followed for any single noise monitoring event above the relevant project noise impact criterion specified in this document for $L_{Aeq\ (15\ minute)}$ and $L_{A1\ (1\ minute)}$:

1. Noise monitoring technician obtains a single result above project noise impact criteria near a private residence.
2. Noise monitoring technician notifies mine immediately of result.
3. Noise monitoring technician waits up to one hour then undertakes another noise measurement.
4. If the second noise measurement is below project noise impact criteria, then the monitoring site has passed, and noise exceedance is not sustained.
5. If the second result is above project noise impact criteria, then the monitoring at the site is deemed a "noise affected night" and noise exceedances are considered sustained.
6. For any sustained exceedance, a follow up single monitoring event will be conducted at the affected site within one week of the exceedance.

6.2.2 Real-time monitoring procedure

Real time noise monitoring is undertaken using equipment which can estimate the contribution of mining alone to total measured levels with sufficient detail to allow adaptive management of operations to minimise noise in the surrounding environment. This is achieved using omni-directional monitors and measuring the low frequency (20-630 hertz [Hz]) components of the audio spectrum. Calibration of the monitoring meters is required every two years according to equipment manufacturer requirements. MCC will also undertake attended comparisons during the year to compare estimated mining noise data from the real time monitoring system.

Data from the network are available through the site environmental monitoring system. The network features noise monitoring and audio recording which can be retrieved from a web portal. Results from the real time monitoring system includes noise from all sources not just the mine related noise. Data are to be used as a management tool only and are not used for compliance. Any unattended data will be collected and stored onsite for a minimum period of 4 years to allow data trend analysis to be completed as required.

The following data parameters, as returned from each real time noise monitoring site and the AWS, will be trended in real time and the display will be available via a web portal as a mining noise management tool:

- Estimated Mining Noise L_{Aeq} – This is a calculated estimate of mining noise L_{Aeq} determined from an omni-directional microphone by utilising the 90th percentile (L_{90}) of low frequency noise (20-630 Hz 1/3 Octaves) with 3dB added;
- Wind speed;
- Wind direction;
- Atmospheric stability class indicator (sigma theta); and
- Site operational alarm criteria.

Where real-time noise readings reach or exceed both internally defined noise levels and the noise levels specified in PA 10_0138 the TARP will be initiated (refer to section 5.3 and Appendix 3: Maules Creek trigger, action, response protocols).

6.2.3 Sound power levels (SLWs)

Sound Power Levels (SLWs) for mobile mining equipment have been derived from the EA noise assessment (Bridges Acoustics, 2011), with modelled sound power levels listed in Table 6.

Newly commissioned mobile plant listed Table 6 below undergoes sound power testing during commissioning by a suitably qualified and experienced noise specialist to ensure equipment and noise control measures deliver SLWs that are equal to or better than SLWs identified in the EA when entering

operation on site. Those items that are not listed are considered insignificant noise generators in the context of a mining environment (e.g. light vehicles).

Ongoing noise testing of mobile fleet shall be undertaken annually by a suitably qualified, experienced noise specialist, wherein a representative sample of the different types of equipment in the fleet (approximately 1/3 of the entire fleet) are tested, such that all permanent mobile plant on site be tested over a three-year period.

Where any mobile plant exceeds the sound power levels (specified in Table 6 below) by 3dB or more an additional investigation will be undertaken to assess the cause of the exceedance to ensure the non-compliant items are modified and/or repaired as necessary. Where the noise suppression is defective, the plant will not be used operationally until fully repaired.

Fleet-wide (logarithmic) averages for each type of mobile plant will be calculated on a rolling basis at the end of each annual testing campaign using the most recent testing result available for each item. Fleet averages should remain within 2dB of sound power levels specified in Table 6 for each type of mobile plant.

At the end of each 3-yearly testing cycle, or if the average sound power of one or more types of mobile plant are observed to exceed the specification by more than 2dB, the total sound power for all mobile plant on site will be calculated and compared to the total mobile plant sound power level used in the most recently approved noise model. If the total measured sound power for mobile plant on site remains the same as, or less than, the specification, no further action is required.

Table 6 –Noise generating mobile plant and modelled sound power

Code, Source	dBA Total
Shovel 1000t	123
Excavator 600t	123
Excavator 350t	119
Excavator 250t	119
Truck 330t	117
Truck 230t	117
Truck 185t	117
Dozer, no track noise 2	115
Dozer with track noise	127
Drill	118
Grader 16H	112
Water cart 777	115
Loader 992	115

Source: Bridges Acoustics (2011).

Noise testing of fixed plant listed in Table 7 shall be undertaken by a suitably qualified/experienced noise specialist during commissioning, following installation of additional attenuation, or at least once every three years, whichever is most applicable. The total measured sound power for fixed plant shall be calculated and compared to the total fixed plant sound power level used in the most recently approved noise model. If the total measured sound power for fixed plant on site remains equal to or less than the approved noise model, no further action is required.

Table 7 – Noise generating permanent infrastructure and modelled sound power

Code, Source	dBA Total
PP, Prep plant	117
C2, Conveyor 200m	108
C5, Conveyor 500m	112
Pri, Primary sizers	109
Sec, Secondary sizers	112

Sk, Stacker	104
Rec, Reclaimer	115
Tr, Transfer station 1	03
Lo, Locomotive	96
TB, Train loadout	103
X, Train on rail spur 3	108
R, Access road 4	95

Source: Bridges Acoustics (2011).

If the total site sound power (including mobile and fixed plant) is greater than the most recently approved noise model, additional noise control measures shall be considered, including but not limited to:

- Strategic deployment of mobile plant items with higher than modelled sound power levels in working areas that are shielded or away from sensitive noise receptors as a temporary measure;
- Attenuation of mobile/fixed plant items with higher than modelled sound power levels and/or with greater contributions to the total site sound power;
- Installation of acoustic barriers or bunding to reduce off-site noise impact from mobile/fixed plant; and/or
- Undertake updated noise modelling to consider measured total site sound power data, including installed noise control measures, and compare predicted noise levels to relevant off-site noise criteria.

7 Responsibilities

Table 8 – Roles and responsibilities

Role	Responsibility
General Manager – Maules Creek	• Ensure required resources and support to implement the management plan
Environmental Superintendent	• Authorise the NMP and future amendments • Ensure induction and training relevant to the NMP • Coordination of noise monitoring technician • Management and maintenance of monitoring network (attended and unattended). Ensuring that attended monitoring is carried out monthly • Regulatory notification and engagement • Reporting (including exceedances and scheduled reporting) and data review • System maintenance and development • Plan reviews
Production Superintendent	• Manage cumulative noise impacts relating to the BTM Complex • Overseeing implementation of proactive and reactive noise management measures daily • Operational modifications to triggers and alarms and implementation of the noise TARP
Maintenance Superintendent	• Sound power testing and repair of plant • Implement noise controls on mobile fleet
Technical Services Superintendent	• Optimisation of mining fleet to ensure sound power levels do not exceed the ENM. • Provision of mine plans to enable update to the predictive model • Assist in mine technical detail for stakeholder enquiries

Role	Responsibility
CHPP Manager	• Management of rail transport noise impacts • Ensure effective management of noise at CHPP • Overseeing implementation of proactive and reactive noise management measures daily
All personnel	• Implementation of this NMP • Modify activities to reduce noise levels

8 Data quality assurance

- Attended and real time monitoring data will be used for validation of the ENM (refer to section 1.2) and to determine the effectiveness of site noise control management measures. As such, annual validation will be an ongoing process that is reported annually.
- Monitoring equipment is maintained and calibrated in accordance with manufacturer's specifications and relevant standards.
- Random audits of operating responses to real time noise monitoring systems are undertaken as required.

9 Compliance obligations

9.1 Non-compliance notification

A written report on a non-compliance with required contents will be provided to the DPHI via the major projects website within 7 days of becoming aware of the non-compliance (or as otherwise directed by the DPHI) as per the requirements of Schedule 5 Condition 8A and 8B, PA 10_0138.

Any exceedance of the noise limits from the EPL will be reported to the regional office of the EPA as soon as practicable after an exceedance becomes known.

9.2 Incident notification and reporting

In accordance with Schedule 5 Condition 8 PA 10_0138 and under Section 148 of the Protection of the Environment Operations Act 1997 (POEO Act) the Planning Secretary and representatives of all relevant regulatory agencies will be informed of any incident that;

- has caused, or threatens to cause, material harm to the environment; and
- breaches or exceeds the limits or performance measures/criteria in this approval.

A notification will be provided to the DPHI immediately after becoming aware of an incident via the major project's website. A written report on the incident will be provided to the DPHI via the major project's website within 7 days and a detailed report with 30 days of becoming aware of the incident (or as otherwise directed by the DPHI) as per the requirements of Appendix 9, PA 10_0138. Reporting to additional regulatory authorities will be executed to meet legal obligations.

9.3 Complaint handling

To ensure an appropriate and consistent level of reporting, response and follow-up to any complaints the following management protocol will be carried out:

- a publicly advertised 24-hour complaints hotline (1800 WHAVEN) in place to receive complaints;
- initial response is provided where practical within 24 hours of receipt of a complaint; and
- all details regarding the complaint, including investigation outcomes and follow up actions, will be provided.

A copy of the Complaints Register will be made available to the CCC and the complainant (on request) and updated monthly on the MCC website. A summary of complaints received every 12 months will be included in the Annual Review.

10 Reporting and review

10.1 Reporting

10.1.1 Scheduled Reporting

In accordance with condition 13 of schedule 5 of PA 10_0138, the following reports are provided on the WHC website, including:

- An Annual Review (AR);
- Updates on the Whitehaven MCC website of:
    - Daily weather forecast
    - Proposed operational responses to weather forecast
    - Estimates of mine noise from real time noise monitoring
    - Operational responses to noise and dust levels;
- Summary reports available monthly required under the EPL. These reports are inclusive of the monthly attended monitoring results.

10.1.2 Compliance reporting

An overview of any non-compliances or incidents received during the reporting year are included in MCC's Annual Review. Refer to section 10.1.4 for further detail on the Annual Review.

10.1.3 CCC reporting

The CCC has been established and will continue to function for the duration of operations on site. Regular briefings to the CCC will be provided, including a summary of results from the MCCM noise monitoring network and how noise issues were addressed.

10.1.4 Annual Review

By the end of March each year, MCC will review the noise performance for the previous calendar year. The noise component of the Annual Review includes the required detail as per the DPHI Annual Review Guideline (2015). The Annual Review will be sent to the relevant regulatory agencies for review and made publicly available on the WHC website. The Annual Review includes the results of sound power testing and modifications carried out to reduce noise emissions from mobile and fixed plant.

10.2 Review

This Management Plan and the BTM Complex Noise Management Strategy will be reviewed and evaluated to assess its adequacy and effectiveness, to the satisfaction of the Planning Secretary (in consultation with relevant government agencies) in accordance with Condition 5 and 5 of Schedule 5 of PA 10_0138. This review is undertaken within 3 months of:

a) The submission of the Annual Review

b) The submission of an incident report

c) The submission of an audit

d) Any modifications to the conditions of the Approval.

If necessary, the Management Plan and the BTM Complex Noise Management Strategy will be revised to incorporate any recommended measures to improve the environmental performance of MCC resulting from audits, community complaints (section 9.3) and incident investigation findings (section 9.2). In addition, the

review process will include ongoing evaluation of operational modifications, alternative methodologies and new technologies that become available for their potential to lessen noise impacts.

10.3 Independent Audit

In accordance with condition 10 and 11 of schedule 5 of PA 10_0138, an Independent Environmental Audit (IEA) of MCCM was initially undertaken in June 2015 and additional IEAs have been undertaken every 3 years since. The IEA includes a review of the noise performance of MCCM, assess compliance with the requirements in this plan, and implementation of noise management measures.

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Version control

Revision	Description	Author	Authorised by	Date
1_0	Draft for Consultation	Global Acoustics	MCC	December 2012
2_1	Revised for approval	MCC	MCC	June 2016
3_2	Revised MEA / Noise Strategy	MCC	MCC	September 2017
3_3	Revised DP&E feedback	MCC / Global Acoustics	MCC	2020
3_4	Annual Review/Modification 7	MCC / Global Acoustics	MCC	October 2021
4_1	Modification 8/IEA	MCC	MCC	March 2022
4_2	Updated management plan template Review 2024 IEA	Symmetry HSE	MCC	October 2024

Appendix 1: Figures

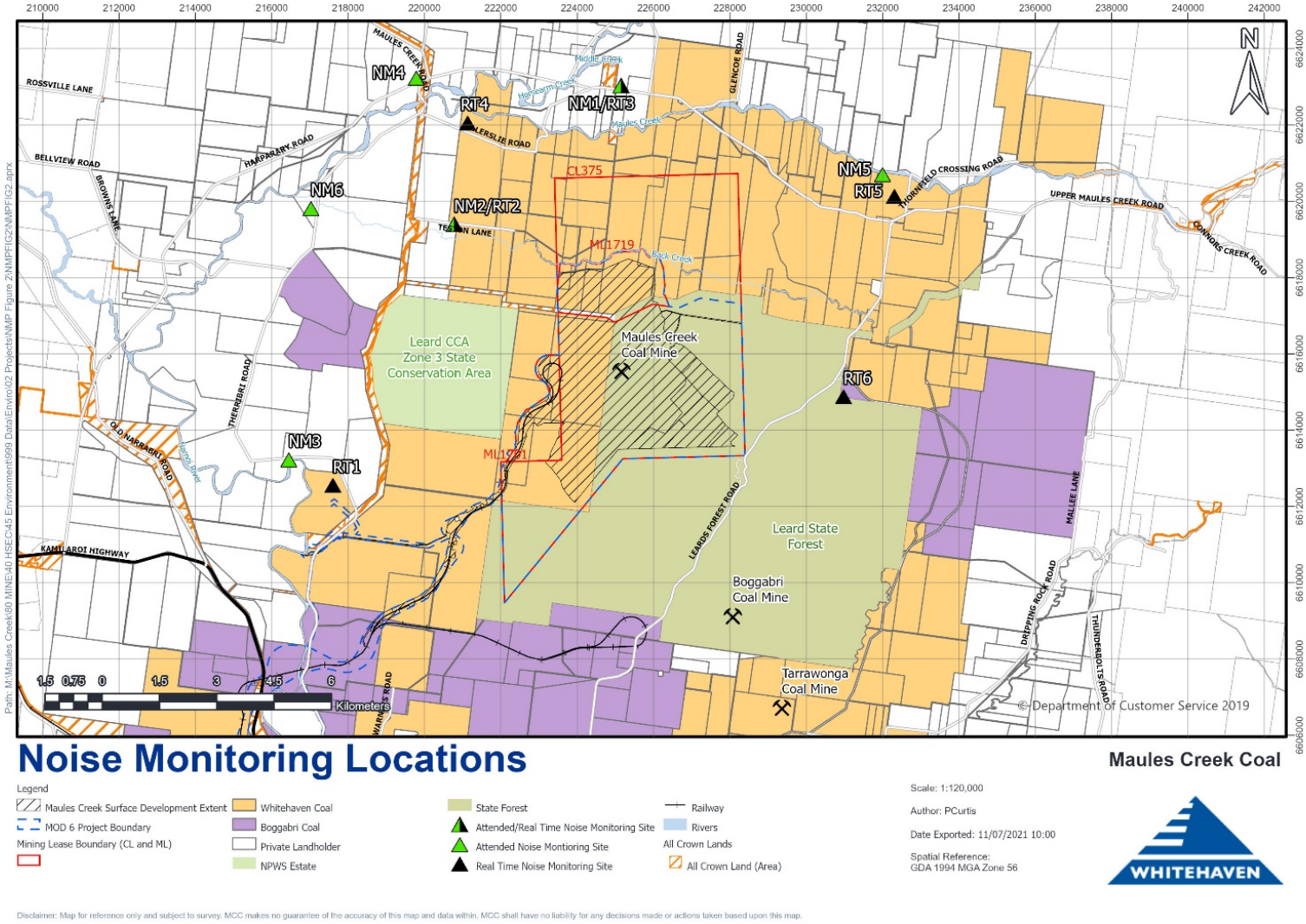

Figure 1 – Noise monitoring locations

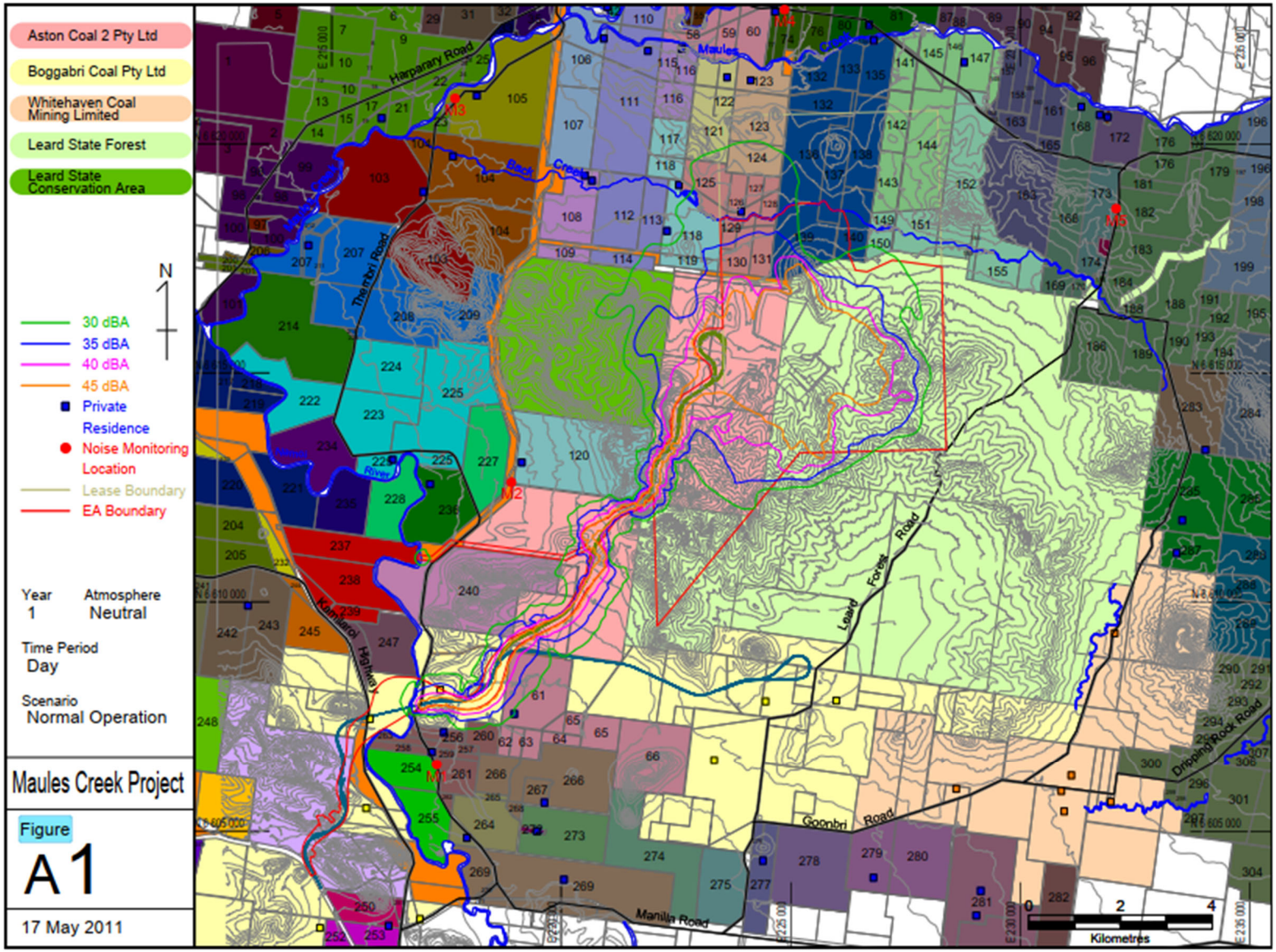

Figure 2 - Modelled noise contours under neutral conditions (Bridges Acoustics, 2011)

Appendix 2: Approval conditions

Table 9 – MP 10_0138 Construction noise and vibration requirements

<table>
<tr><th></th><th>Approval condition</th><th>NMP Reference</th></tr>
<tr><td></td><td>Schedule 3</td><td></td></tr>
<tr><td></td><td>Construction Noise and Vibration Criteria – Maules Creek and Boggabri Shared Rail Spur Lines.</td><td></td></tr>
<tr><td>4</td><td>During the hours of:
a) 7 am to 6 pm Monday to Fridays, inclusive;
b) 8 am to 1 pm on Saturdays; and
c) At no time on Sundays or public holidays,

Noise from activities associated with the construction and / or upgrade of the Maules Creek rail spur line and shared section of the Boggabri rail spur line shall meet the criteria in Table 4.

Table 4: Rail spur line construction noise criteria dB (A)
<table>
<tr><th rowspan="2">Location Property / ID</th><th>Construction Noise Criteria</th></tr>
<tr><th>Day
dB(A) $L_{Aeq(15min)}$</th></tr>
<tr><td>~~256~~</td><td>~~50~~</td></tr>
<tr><td>~~259~~</td><td>~~45~~</td></tr>
<tr><td>All other privately-owned residences</td><td>40</td></tr>
</table>
Note: To interpret the locations referred to in Table 4, see the applicable figure in Appendix 4.</td><td>Section 2.1</td></tr>
<tr><td>5</td><td>Vibration from activities associated with the construction and / or upgrade of the Maules creek rail spur line and shared section of the Boggabri rail spur line shall comply with the following:
a) For structural damage, the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration – effects of vibration on structures; and
b) For human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: A Technical Guideline (Department of Environment and Conservation, 2006).</td><td>Section 2.1</td></tr>
<tr><td>6</td><td>If the Applicant proposes to undertake any construction works associated with the Maules Creek rail spur line (and shared section of the Boggabri rail spur line) outside the hours specified above, then the Proponent must prepare and implement an Out of Hours Work protocol for these works to the satisfaction of the Planning Secretary. This protocol must be prepared in consultation with the EPA and the residents who would be affected by the noise generated by these works, and be consistent with the requirements of the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009). The Proponent shall not carry out any out of hours construction works before this protocol has been approved by the Planning Secretary.

Note: For areas where construction noise from the Maules Creek rail spur line and shared section of the Boggabri rail spur line is predicted to be at or below 35dB(A) and / or below operational noise criteria at sensitive receptors, this is likely to provide sufficient justification for the need to operate outside of recommended standard hours as specified in the ICNG.</td><td>Sections 2.1 and 5.2.5</td></tr>
<tr><td></td><td>Noise Criteria</td><td></td></tr>
<tr><td>7</td><td>Except for the noise affected land in Table 1, the Applicant must ensure that operational noise generated by the project does not exceed the criteria in Table 5.

Table 5: Noise criteria dB(A)
<table>
<tr><th>Land</th><th>Day/Evening/Night $L_{Aeq\ (15min)}$</th><th>Night $L_{A1\ (1min)}$</th></tr>
<tr><td>All privately owned residences</td><td>35</td><td>45</td></tr>
</table>
Note:
• Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Noise Policy for Industry (EPA, 2017).
• Operational noise includes noise from the mining operations and the use of private roads and rail spurs.</td><td>Section 2.1</td></tr>
</table>

	However, these noise criteria do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement	

Table 10 – Operational noise

Approval condition	NMP Reference
schedule 3	
Noise Criteria	
Cumulative Noise Criteria	
10. Except for the land listed in Table 1, the Applicant must ensure that the operational noise generated by the project combined with the noise generated by other mines does not exceed the criteria in Table 6 at any residence on privately-owned land.	Sections 2.1 and 2.2

Table 6: Cumulative noise criteria dB(A) $L_{Aeq\ (period)}$

Land	*Day/Evening/Night $L_{Aeq\ (Period)}$*
All privately owned residences	40

Notes:

- *Cumulative noise is to be measured in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the NSW* ***Noise Policy for Industry*** **(NSW EPA, 2017)**.
- *Operational noise includes noise from the mining operations and the use of private roads and rail spurs.*

Table 11 – Land acquisition and mitigation requirements

Approval condition	NMP Reference
schedule 3	
Noise Criteria	
1. Upon receiving a written request for acquisition from the owner(s) of the land listed in Table 1, the Applicant must acquire the land in accordance with the procedures in conditions 8-9 of schedule 4.	Section 2
2. For privately-owned residences within the project's 35dB(A) noise impact contour (see Table 2 and Appendix 4A) the owner(s) can make a written request to the Applicant for one of the following: (a) mitigation (such as double glazing, insulation and air conditioning) at the residence in consultation with the owner(s). These measures must be reasonable and feasible and directed towards reducing the noise impacts of the project on the residence. If within 3 months of receiving this request from the owner(s), the Applicant and owner(s) cannot agree on the measures to be implemented, or there is a dispute about the	Section 2

Table 1: Land subject to acquisition upon request

Acquisition Basis	*Land*
~~Noise & Air~~	~~110-114~~
Noise	~~61-66,~~ 108-109~~, 117-120, 123-124, 125-131, 132-140, 141-148, 149-155, 236, 256-263~~
~~Air~~	~~279-280~~

However, this condition does not apply if the Applicant has an agreement with the owner(s) of the relevant properties to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement.

Notes:

1. *To interpret the locations referred to in Table 1 see the applicable figure(s) in Appendix 4.*
2. *The Applicant is only required to acquire property 279-280 if the owner of the land no longer has acquisition rights under any planning approval for the Boggabri mine and/or Tarrawonga mine.*
3. *For the purposes of acquisition under this condition, parcels of land that are in close proximity and operated as a single agricultural enterprise should be included as part of the land to be acquired. Where the Applicant and the owner(s) cannot agree on whether non-contiguous parcels of land should be included, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's decision as to the lands to be included for acquisition under the procedures in conditions 8 and 9 of schedule 4 shall be final.*

Approval condition	NMP Reference
implementation of these measures, then either party may refer the matter to the Planning Secretary for resolution; or (b) acquisition of the residence and land in accordance with the procedures in conditions 8-9 of schedule 4. *Table 2: Residences subject to acquisition or noise mitigation on request* *Residences* ~~61,~~ 108, ~~118, 120, 126, 134, 236, 256 and 259~~ Upon receiving a written request from the owner(s), the Applicant must undertake whichever option has been requested by the owner(s). However, this condition does not apply if the Applicant has an agreement with the owner(s) of the relevant residence to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement. *Notes:* *1. To interpret the locations referred to in Table 2A see the applicable figure(s) in Appendix 4.* *2. For the purposes of this condition a privately-owned residence is defined as a residence not owned by a mining company that: is regularly occupied; or is an existing residence that is not regularly occupied but for which a valid development consent exists; or is a proposed residence for which a development application has been lodged with the relevant authority prior to the date of this approval.* *3. For the purposes of acquisition under this condition, parcels of land that are in close proximity and operated as a single agricultural enterprise should be included as part of the land to be acquired. Where the Applicant and the owner(s) cannot agree on whether non-contiguous parcels of land should be included, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's decision as to the lands to be included for acquisition under the procedures in conditions 8 and 9 of schedule 4 shall be final.*	
3. Where the owner(s) of a residence included in Table 2 of this schedule have opted for either an agreement to generate higher noise levels or noise mitigation under condition 2, and the owner(s) have reason to believe that the noise impacts at the residence are more than 3 dB(A) above the predicted noise levels for that residence (see Table 3), the owner(s) can request an independent noise impact assessment for the residence. The request shall be made in writing to the Planning Secretary. If the Planning Secretary considers that a noise impact assessment is warranted, then the Applicant must commission the assessment. If the noise impact assessment determines that the noise generated by the project causes sustained exceedances, or is likely to cause sustained exceedances, of the predicted noise levels by more than 3 dB(A), the owner(s) may require the Applicant to acquire the residence and land in accordance with the procedures in conditions 8-9 of schedule 4. *Table 3: Maximum Predicted Noise Levels* *Location Property/ ID* | *Day ($L_{Aeq(15min)}$)* | *Evening ($L_{Aeq(15min)}$)* | *Night ($L_{Aeq(15min)}$)* | *Night ($L_{A1(1min)}$)* ~~61~~ | ~~35~~ | ~~43~~ | ~~43~~ | ~~53~~ 108, ~~120~~ | 35 | 39 | 39 | 45 ~~118~~ | ~~40~~ | ~~44~~ | ~~44~~ | ~~45~~ ~~126~~ | ~~45~~ | ~~48~~ | ~~48~~ | ~~53~~ ~~134, 236~~ | ~~35~~ | ~~36~~ | ~~36~~ | ~~45~~ ~~256~~ | ~~35~~ | ~~40~~ | ~~40~~ | ~~50~~ ~~259~~ | ~~35~~ | ~~39~~ | ~~39~~ | ~~49~~ *Notes:* *1. To interpret the locations referred to in Table 3, see the applicable figure in Appendix 4* *2. The noise assessment must be undertaken by a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary and include either:* *o Sufficient monitoring at the affected residence to allow for assessment of the impacts under a range of meteorological conditions (including adverse conditions) likely to be experienced at the residence; or* *o Sufficient monitoring to allow reliable prediction of the likely impacts under the range of meteorological conditions (including adverse conditions) likely to be experienced at the residence.* *3. Monitoring should be conducted in accordance with the requirements of the NSW Noise Policy **for Industry** (EPA, 2017).* *4. Where predictions of likely impacts is to be used, either in substitution for, or in conjunction with, direct measurement of noise impacts at the residence, it must be based on sufficient monitoring data to provide a reliable estimate of the impacts (including under adverse meteorological conditions) and be derived using standard noise modelling techniques accepted by the EPA.*	Sections 2

Approval condition	NMP Reference
5. *The Applicant must ensure that the requested noise impact assessment is submitted to the Planning Secretary within 3 months of the Planning Secretary's decision that the assessment was warranted. The Proponent shall also provide a copy of the assessment to the owner(s) of the residence at the same time it is submitted to the Planning Secretary.* 6. *Note 3 to condition 1 of this schedule applies to acquisition under this condition.*	
Noise Acquisition Requirements – Residences	
8. If the owner(s) of a privately-owned residence, which is not within the project's 35 dB(A) noise impact contour (see condition 2, Table 2 and Appendix 4A), have reason to believe that operational noise from the project is causing the criteria in Table 5 to be exceeded at the residence, the owner(s) can request an independent noise impact assessment for the residence. The request must be made in writing to the Planning Secretary. If the Planning Secretary considers that a noise impact assessment is warranted, then the Applicant commission the assessment. If the noise impact assessment determines that the noise generated by the project causes sustained exceedances, or is likely to cause sustained exceedances, of the criteria in Table 5, the owner(s) can make a written request to the Applicant for one of the following: (a) Mitigation (such as double glazing, insulation and air conditioning) at the residence in consultation with the owner(s). These measures must be reasonable and feasible and directed towards reducing the noise impacts of the project on the residence. If within 3 months of receiving this request from the owner(s), the Applicant and owner(s) cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Planning Secretary for resolution; or (b) Acquisition of the residence and land in accordance with the procedures in conditions 8-9 of schedule 4. Upon receiving a written request from the owner(s), the Applicant must undertake whichever option has been requested by the owner(s). However, this condition does not apply if the Applicant has an agreement with the owner(s) of the relevant residence to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement. *Notes:* 1. *For the purposes of this condition a privately-owned residence is defined as a residence not owned by a mining company that: is regularly occupied; or is an existing residence that is not regularly occupied but for which a valid development consent exists; or is a proposed residence for which a development application has been lodged with the relevant authority prior to the date of this approval.* 2. *For the purposes of acquisition under this condition, parcels of land that are in close proximity and operated as a single agricultural enterprise should be included as part of the land to be acquired. Where the Applicant and the owner(s) cannot agree on whether non-contiguous parcels of land should be included, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's decision as to the lands to be included for acquisition under the procedures in conditions 8 and 9 of schedule 4 shall be final.* 3. *Notes 2,3,4 and 5 of condition 3 apply to this condition.*	Sections 2
Noise Acquisition Requirements – Land	
9. If the owner(s) of land containing a privately owned residence, which is not listed in Table 1, have reason to believe that operational noise from the project is causing noise levels to exceed 40 dB(A) LAeq(15 min) over more than 25% of that land, the owner(s) can request an independent noise impact assessment for the land. The request must be made in writing to the Planning Secretary. If the Planning Secretary considers that a noise impact assessment is warranted, then the Applicant must commission the assessment. If the noise impact assessment determines that the noise generated by the project causes sustained exceedances, or is likely to cause sustained exceedances, of the 40 dBA criteria, the owner(s) can make a written request to the Applicant for acquisition of the residence and land in accordance with the procedures in conditions 8-9 of schedule 4. Upon receiving a written request from the owner(s), the Applicant must purchase the residence and land in accordance with the procedures in conditions 8-9 of schedule 4. However, this condition does not apply if the Applicant has an agreement with the owner(s) of the relevant residence to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement. *Notes:* 1. *For the purposes of this condition a privately-owned residence is defined as a residence not owned by a mining company that: is regularly occupied; or is an existing residence that is not regularly occupied but for which a valid development consent exists; or is a proposed residence for which a development application has been lodged with the relevant authority prior to the date of this approval.* 2. *For the purposes of acquisition under this condition, parcels of land that are in close proximity and operated as a single agricultural enterprise should be included as part of the land to be acquired. Where the Applicant and the owner(s) cannot agree on whether non-contiguous parcels of land should be included, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's decision as to the lands to be included for acquisition under the procedures in conditions 8 and 9 of schedule 4 shall be final.*	Section 2

Approval condition	NMP Reference
3. *Notes 2, 3, 4 and 5 of condition 3 apply to this condition.*	
Cumulative Noise Acquisition Requirements	
11. If the owner(s) of a privately-owned residence, which is not listed in Table 1, reasonably believes that the noise limits in Table 6 are being exceeded at the residence and that the exceedance is caused by operational noise from the project and one or more other mines (including use of private roads or rail spurs), the owner(s) can request an independent noise impact assessment for the residence. The request must be made in writing to the Planning Secretary. If the Planning Secretary considers that a noise impact assessment is warranted, then the Applicant must commission the assessment. Where the noise impact assessment determines that the cumulative noise generated by the project combined with the noise from the other mine(s) causes, or is likely to cause, sustained exceedances of the criteria in Table 6, then the owner(s) can make a written request to the Applicant for one of the following: (a) Mitigation (such as double-glazing, insulation and air conditioning) at the residence in consultation with the owner(s). These measures must be reasonable and feasible and directed towards reducing the noise impacts of the project on the residence. If within 3 months of receiving this request from the owner(s), the Applicant and owner(s) cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Planning Secretary for resolution; or (b) Acquisition of the residence and land in accordance with the procedures in conditions 8-9 of schedule 4. Upon receiving a written request from the owner(s), the Applicant must undertake whichever option has been requested by the owner(s). However, this condition does not apply if the Applicant has an agreement with the owner(s) of the relevant residence to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement. The Applicant may seek to recover an equitable share of the costs incurred from the other mines contributing to the cumulative impact. Unless otherwise agreed between the mines, the proportional contributions should be based on expert analysis of the monitoring results to assess relative contribution to the impact. In the event of a dispute between the mines the Applicant, or one of the contributing mines, may submit the matter to the Planning Secretary for resolution. The Planning Secretary's decision shall be final. *Notes:* 1. *For the purposes of this condition a privately-owned residence is defined as a residence not owned by a mining company that: is regularly occupied; or is an existing residence that is not regularly occupied but for which a valid development consent exists; or is a proposed residence for which a development application has been lodged with the relevant authority prior to the date of this approval.-* 2. *For the purposes of acquisition under this condition, parcels of land that are in close proximity and operated as a single agricultural enterprise should be included as part of the land to be acquired. Where the Applicant and the owner(s) cannot agree on whether non-contiguous parcels of land should be included, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's decision as to the lands to be included for acquisition under the procedures in conditions 8 and 9 of schedule 4 shall be final.* 3. *Notes 2,3,4 and 5 of condition 3 apply to this condition.* 4. *The noise impact assessment shall include assessment of the relative contribution of the mines to the impact at the residence.*	Section 2

Table 12 – Noise management measures

Approval condition	NMP Reference
Schedule 3	
Attenuation of Plant	
12. The Applicant must: (a) Ensure that: • All mining trucks and water carts used on the site are commissioned as noise suppressed (or attenuated) units; • Ensure that all equipment and noise control measures deliver sound power levels that are equal to or better than the sound power levels identified in the EA, and correspond to best practice or the application of the best available technology economically achievable; • Where reasonable and feasible, improvements are made to existing noise suppression equipment as better technologies become available; and (b) Monitor and report on the implementation of these requirements annually on its website.	Sections 5.1 and 7
13. The Applicant must:	Sections 5 and 7

(a) Conduct an annual testing program of the attenuated plant on site to ensure that the attenuation remains effective; (b) Restore the effectiveness of any attenuation if it is found to be defective; and (c) Report on the results of any testing and/or attenuation work annually on its website.	
Maules Creek Rail Spur Line – Noise impacts	
14. The Applicant must: (a) Commission suitably qualified and experienced person/s to review the design of the Maules Creek rail spur line, and determine whether it incorporates all reasonable and feasible noise mitigation measures, including suitable measures to minimise low frequency noise; (b) Implement the recommendations of this acoustic review; (c) Undertake commissioning trials of the spur line to determine the optimal train speed to minimise noise impacts; and (d) Following commissioning of the spur line, undertake targeted noise monitoring to determine the accuracy of predicted acoustic impacts and effectiveness of any noise reduction measures, including monitoring during adverse inversion conditions, to the satisfaction the Planning Secretary.	Section 2.1
Operating conditions	
15. The Applicant must: (a) Implement best management practice to minimise the construction, operational, low frequency, road and rail traffic noise of the project; (b) Operate a comprehensive noise management system on site that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day to day planning of mining operations and the implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this approval; (c) Maintain the effectiveness of noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired; (d) Ensure that noise attenuated plant is deployed preferentially in locations relevant to sensitive receivers; (e) Minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply; (f) Ensure that the Maules Creek rail spur line is only accessed by locomotives that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL (No. 3142); (g) Use its best endeavours to ensure that the rolling stock supplied by service providers on the rail spur line is designed, constructed and maintained to minimise noise; (h) Ensure any new rail rolling stock manufactured specifically for the project is designed, constructed and maintained to minimise noise; and (i) Co-ordinate the noise management on site with the noise management at other mines within the Leard Forest Mining Precinct to minimise the cumulative noise impacts of these mines, to the satisfaction of the Planning Secretary.	Section 2.4, 5, 6, Appendix 3: Maules Creek trigger, action, response protocols
Noise Management Plan	
16. The Applicant must prepare and implement a Noise Management Plan for the project to the satisfaction of the Planning Secretary. This plan must: (a) Be prepared in consultation with the EPA, and submitted to the Planning Secretary for approval prior to the commencement of construction; (b) Describe the measures that would be implemented to ensure: • best management practice is being employed; • the noise impacts of the project are minimised during meteorological conditions when the noise limits in this approval do not apply; and • compliance with the relevant conditions of this approval; (c) Describe the proposed noise management system in detail; (d) Include a risk/response matrix to codify mine operational responses to varying levels of risk resulting from weather conditions and specific mining activities; (e) Include commitments to provide summary reports and specific briefings at CCC meetings on issues arising from noise monitoring; (f) Include a monitoring program that: • Uses a combination of real time and supplementary attended monitoring to evaluate the performance of the project; • Adequately supports the proactive and reactive noise management system on site; • Includes a protocol for determining exceedances of the relevant conditions of this approval; • Includes monitoring of inversion strength at an appropriate sampling rate to determine compliance with noise limits;	This document and the Boggabri Tarrawonga Maules Creek (BTM) Precinct Noise Management Strategy

• Evaluates and reports on the effectiveness of the noise management system on site; and • Provides for the annual validation of the noise model for the project; and (g) Includes a Leard Forest Mining Precinct Noise Management Strategy that has been prepared in consultation with the other coal mines in the Precinct to minimise the cumulative noise impacts of all the mines within the precinct, and includes: • A description of the measures that would be implemented to ensure that the noise management of the mines is properly co-ordinated to ensure compliance with the relevant noise criteria; • A suitable monitoring network for the precinct; • Protocols for data sharing; and • Procedures for identifying and apportioning the source/s and contribution/s to cumulative noise impacts for the operating mines and other sources, using the noise and meteorological monitoring network and appropriate investigative tools. *Note: The Leard Forest Mining Precinct Noise Management Strategy can be developed in stages and will need to be subject to ongoing review dependent upon the determination and commencement of other mining projects in the area.*	

Table 13 – Approval general requirements

Approval condition	NMP Reference
Schedule 4	
3. As soon as practicable after obtaining monitoring results showing: an exceedance of the relevant criteria in schedule 3, the Applicant must notify the affected landowner in writing of the exceedance, and provide regular monitoring results to the landowner until the project is complying with the relevant criteria again; and	Section 9.1
8A. The Secretary must be notified in writing via the Major Projects website within seven days after the Proponent becomes aware of any non-compliance. 8B. A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance. 8C. A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	Section 9.1
9. The Applicant must provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.	Section 10.1
10. By the end of June 2014 and every 3 years thereafter, unless the Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the project.	Section 10.3
13. The Applicant must, within 3 months of the date of this approval: • make the following information for the project publicly available on its website, on a daily basis and in a clearly understandable form: • daily weather forecasts for the coming week; • proposed operational responses to these weather forecasts; • real time noise and air quality monitoring data (subject to any necessary caveats); and • make provision on its website for the provision of online and/or email comments by members of the community regarding this information, to the satisfaction of the Secretary.	Section 10.1.1

Table 14 – Environment Protection Licence 20221

No	Approval condition	NMP Reference
4.1	Noise generated at the premises must not exceed the noise limits in the table below.	Section 2.1

No	Approval condition	NMP Reference

Locality and location	Day-LAeq(15 minute)	Evening - LAeq(15 minute)	Night - LAeq (15 minute)	Night - LA1 (1 minute)
All privately owned residences	35	35	35	45

No	Approval condition	NMP Reference
4.2	The noise limits identified in the above table do not apply at privately owned residences that are: a) identified as residences subject to acquisition or noise mitigation on request within the Project Approval 10_0138; or b) subject to a private agreement, relating to the noise levels, between the licensee and the land owner.	Section 2.1
4.3	Noise generated at the premises that is measured at each noise monitoring point established under this licence must not exceed the noise levels specified in Column 4 of the table below for that point during the corresponding time periods specified in Column 1 when measured using the corresponding measurement parameters listed in Column 2.	Section 2.1

POINT 25,27,28,29,30

Time period	Measurement parameter	Measurement frequency	Noise level dB(A)
Day	LAeq (15 minute)	Monthly	35
Evening	LAeq (15 minute)	Monthly	35
Night	LAeq (15 minute)	Monthly	35
Night	Night-LA1 (1 minute)	Monthly	45

Note: Attended noise monitoring locations identified in the table above are taken to be representative of privately owned residences and are to be used for the purposes of determining compliance with noise limits identified in this licence, unless otherwise required in writing by the EPA.

4.4	For the purpose of the table in condition L3.1 and L3.3: a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays; b) Evening is defined as the period from 6pm to 10pm; c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.	Section 2.1
4.5	The noise limits set out in condition L3.1 and L3.3 apply under all meteorological conditions except for the following: a) Wind speeds greater than 3 metres/second at 10 metres above ground level. For the purposes of this condition: a) Data recorded by the meteorological station identified as EPA Identification Point(s) 35 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.	Section 6.2.1
4.6	For the purposes of determining the noise generated at the premises the modification factors in Table C1 in Fact Sheet C of the Noise Policy for Industry (NSW EPA, 2017) may be applied, as appropriate, to the noise measurements by the noise monitoring equipment.	Section 6.2.1
4.7	If required in writing by the EPA to determine compliance at an individual private residence referred to in condition L3.1: a. to determine compliance with the Leq(15 minute) noise limits in condition L3.1, the noise measurement equipment must be located: i. approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or	Section 2.3

<table>
<tr><th>No</th><th>Approval condition</th><th>NMP Reference</th></tr>
<tr><td></td><td>ii. 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
iii. within approximately 50 metres of the boundary of a National Park or a Nature Reserve; or
iv. at an alternative location approved in writing by the EPA.
b. to determine compliance with the LA1(1 minute) noise limits in condition L3.1, the noise measurement equipment must be located within 1 metre of a dwelling façade.
c. to determine compliance with the noise limits in condition L3.1, the noise measurement equipment must be located:
i. at the most affected point at a location where there is no dwelling at the location; or
ii. at the most affected point within an area at a location prescribed by part (a) or part (b) of this condition.</td><td></td></tr>
<tr><td>6.1</td><td>Noise from activities associated with the construction and/ or upgrade of the Maules Creek rail spur line must not exceed the noise limits in the table below.
<table><tr><th>Location</th><th>Construction Noise Criteria Day LAeq (15 minute)</th></tr><tr><td>256</td><td>50</td></tr><tr><td>259</td><td>45</td></tr><tr><td>All privately owned residences</td><td>40</td></tr></table>
Note: The noise limits identified in the above table do not apply at privately owned residences that are subject to a private agreement, relating to the noise levels, between the licensee and the land owner.</td><td>Section 2.1</td></tr>
<tr><td>6.2</td><td>Activities associated with the construction and/ or upgrade of the Maules Creek rail spur line may only be carried on between:
a) 7:00am to 6:00pm Monday to Friday;
b) 8:00am to 1:00pm Saturdays; and,
c) c) At no time on Sundays or public holidays.</td><td>Section 2.1</td></tr>
<tr><td>6.3</td><td>The above hours of operation specified in condition L5.2 may be varied if the EPA, having regard to the effect that the proposed variation would have on the amenity of the residents in the locality, gives written consent to the variation.</td><td>Section 2.1</td></tr>
<tr><td>8.1</td><td>To assess compliance with the noise limits specified in condition L3.3, the licensee must undertake operator attended noise monitoring at each specified noise monitoring point in accordance with the table below during a period of time representative of typical operating conditions and not undertaken during a shutdown period</td><td>Section 6.2.1</td></tr>
<tr><td>R</td><td>Other reporting conditions</td><td></td></tr>
<tr><td>4.1</td><td>A noise compliance assessment report must be submitted to the EPA within thirty (30) calendar days of the completion of the monthly noise monitoring. The assessment must be prepared by a suitably qualified and experienced person and include:
a) an assessment of compliance with noise limits detailed in the limit conditions of this licence; and
a) an outline of any management actions taken within the monitoring period to address any exceedances of the noise limits detailed in condition L3.3 of this licence.</td><td>Section 10.1.1</td></tr>
<tr><td>4.2</td><td>The Licensee must report any exceedance of the licence noise limits to the regional office of the EPA as soon as practicable after the exceedance becomes known to the licensee or to one of the licensee’s employees or agents.</td><td>Section 9.1</td></tr>
</table>

Appendix 3: Maules Creek trigger, action, response protocols

Real time noise monitoring notification

A noise notification will be triggered when the green, amber or red triggers (i.e. consistent with the *NSW Draft Guideline Mining Noise Monitoring Application Note* [NSW Government, undated]) are triggered as described in Table 15. These levels are set at values lower than the Approval triggers (refer to Table 1) to allow for proactive management of noise emissions.

Table 15 – Real time response trigger levels

Time Period	Location	Green	Amber	Red
Day, Evening and Night	RT1, RT3, RT4 and RT5	Low frequency noise LAeq >28 dBA	Low frequency noise LAeq >30 dBA Refer to Tables 14 & 15 possible control options	Low frequency noise LAeq >33 dBA

The triggers will be reviewed and updated as required. RT2 is located near a private receiver (108-109) with higher noise criteria specified under the Approval. To provide noise management at all times, the triggers tabled above apply however may vary dependent on operational activities, daytime conditions and consideration of meteorological conditions. In addition to the availability of audio to assist the identification of mine noise, a roaming noise monitoring representative undertakes inspections at key offsite locations during the night. Real time management actions in response to triggers are provided in Table 16. Table 17 provides a real time risk response matrix for implementation when recorded noise levels meet the relevant trigger levels.

Table 16 – Real time response management actions

Colour	Management/Control Action
Green	Real time monitoring display active and monitored. Confirm that the prevailing weather conditions are relevant in accordance with the approval and EPL and the noise criteria apply. Record observations. If MCCM noise is audible: • Review predicted weather conditions to identify potential noise enhancing conditions. • Monitor changes in noise levels.
Amber	Notification alert sent to site distribution list. Confirm that the prevailing weather conditions are relevant in accordance with the approval and EPL and the noise criteria apply. Review available information including noise recordings to determine noise source and/or request off site inspection by 'roaming' noise monitor personnel. Record observations. If MCCM noise is audible: • Review noise generating activities and presence of noise enhancing conditions. • Modify operations (silent horns, dozers in first gear, low revs when tipping, dump locations). • Review predicted weather conditions to identify if noise enhancing conditions are forecast for the rest of the shift. • Monitor changes in noise levels. • Recording and notification in site system.
Red	Notification alert sent to site distribution list. Confirm that the prevailing weather conditions are relevant in accordance with the approval and EPL and the noise criteria apply. Review available information including noise recordings to determine noise source and contact roaming noise monitor. If MCCM noise is audible:

	• Implement control measures such as those described in Table 17. • Monitor changes in noise levels against operational changes. • Review predicted weather conditions to identify if noise enhancing conditions are forecast for the rest of the shift. • Review predicted noise impacts for the shift against actual observations. Record observations. Notification to the Environment Department and production personnel. This includes details of investigation, type of response (if any required), real time monitoring results and actions taken.

Table 17 – Real time risk/response matrix

Identified Problem Noise Source	Possible Control Option
Northern Emplacement Area (trucks and dozers)	Operate a shielded emplacement location
	Modify number of trucks accessing the emplacement area
	Operate dozers in first gear only
	Modify operations in the area
	Reduce engine revs while on top of dump and during unloading
Excavators	Modify number of trucks loaded per 15-minute period
	Ensure silent horns in operation
	Reduce / modify number of operating excavators
Drills	Assess location and modify/move to an alternative location

Additional noise management measures introduced at MCCM have included the application of:

- Implementation of specifically designed muffler systems onto the Hitachi 5100 class trucks;
- Design and implementation of 'silent' horn systems on the excavator and truck fleet during nighttime operations;
- Off-site nighttime inspections to note the audibility of mine generated noise; and
- The implementation of a Noise Compass Directional Noise Monitor (DNM).

These will continue to be applied where feasible and until alternative progressive improvements in technology and management measures become available.

- Investigation of further noise management options continues to occur at MCCM including, but not limited to:
- Low frequency noise assessments (assessments completed and ongoing);
- Training of dispatch and supervisory personnel (ongoing);
- Addition of continuous streaming mobile audio trailers (refer real time monitoring units described in section 6.1.2);
- Designing and installing train load out acoustic barriers (installed);
- Modifications to other plant items at the CHPP (installed);
- Reviewing meteorological data and influence of inversion strengths (completed and ongoing); and
- Investigating management of truck engine revs and earthen bunds (completed and ongoing).

Review of TARP level responses will be undertaken periodically with the following being investigated:

- Check proactive planning was undertaken;
- Check proactive plan was implemented;
- Determine if actual meteorological conditions were as predicted;
- Evaluate effectiveness of production changes; and

- Implement any identified procedural improvements as described in the risk/response matrix.