NOISE MANAGEMENT PLAN

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1.0 INTRODUCTION

This document is the Noise Management Plan (NMP) for the Maules Creek Coal Mine (MCCM). The MCCM involves the development of a 21 year open cut coal mining operation and associated infrastructure. This version of the NMP is a revision to the plan following independent audits of the MCCM and to reflect updates to the Environment Protection Licence (EPL) 20221 issued by the New South Wales (NSW) Environment Protection Authority (EPA).

1.1 Background

The ownership of the MCCM currently lies with the Maules Creek Coal Joint Venture (MCCJV), which is 75 percent (%) 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). The MCCM is managed by Maules Creek Coal Pty Ltd (MCC) (a wholly owned subsidiary of Whitehaven) on behalf of the MCCJV.

The MCCM is an open-cut coal mine located on the north-west slopes and plains of NSW in the Gunnedah Coal basin.

Land-use in the local area is dominated by agricultural operations and open cut mining, with rural residential holdings mainly located to the north and west of the MCCM. The Project Boundary (Figure 1) is situated on land largely occupied by the Leard State Forest (which has historically been predominantly utilised for forestry, recreation and more recently mining related activities). Various coal mines and smaller council quarries exist within close proximity to the MCCM including Boggabri Coal Mine, Tarrawonga Coal Mine and Goonbri Exploration Lease located to the south, southeast of the MCCM.

There are a number of isolated rural residences associated with the surrounding farms within the vicinity of the MCCM, as well as the Fairfax Public School located in the Maules Creek Village. The location of sensitive receptors in the vicinity of Project is shown in ***Figure 2*** also illustrates the land ownership surrounding the Project and identifies properties already owned by MCC or currently under negotiation. The surrounding terrain is gently undulating in the north with steeper slopes emerging near ridgelines towards the central portion of the Project. Much of the higher ground and steeper slopes retain moderately dense woodland cover, which forms part of the National Parks and State Forests found within the region.

1.2 Project Description

An Environmental Assessment for the Maules Creek Coal Project (referred to herein as the Project EA) was prepared by Hansen Bailey (2011) and was assessed under the NSW Environmental Planning and Assessment Act, 1979 (EP&A Act) in 2012 and 2013. The NSW Planning Assessment Commission (PAC), as a delegate for the then NSW Minister for Planning and Infrastructure, issued the State Project approval for the MCCM on 23 October 2012 (i.e. Project Approval PA 10_0138 (the approval)). The MCCM Commonwealth environmental approval (i.e. EPBC 2010/5566) was granted on 11 February 2013 by the then Commonwealth Minister for Sustainability, Environment, Water, Population and Communities.

The environmental approvals for the MCCM allow for the construction and operation of an open cut coal mine until the end of December 2034. In particular, the approvals authorise the following activities:

- Construction and operation of an open cut mining operation extracting up to 13 million tonnes per annum of run-of-mine coal.
- Open cut mining fleet including excavator/shovels and fleet of haul trucks, dozers, graders and water carts using up to 470 permanent employees.
- Construction and operation of a Coal Handling and Preparation Plant (CHPP).
- Construction and operation of a Tailings Drying Area.
- Construction and operation of a rail spur, rail loop, associated load-out facility and connection to the Werris Creek to Mungindi Railway Line.
- Construction and operation of a Mine Access Road.
- Construction and operation of administration, workshop and related facilities.
- Construction and operation of water management infrastructure including a water pipeline, pumping station and associated infrastructure for access to water from the Namoi River.
- Installation of supporting power and communications infrastructure.
- Construction and operation of explosive magazine and explosives storage areas.

A modification application was submitted in April 2013 seeking approval for the construction and operation of a 132 kilovolt (kV) transmission line, a 132 kV Switch Station and minor realignment of the CHPP, and associated facilities. As a result, the Project Approval was modified in July 2013.

A second modification application was lodged in February 2014 to adjust the location of the raw water pipeline and associated pump station. As a result, the Project Approval was modified on 10 March 2014.

A third modification application was approved in 2017 modifying employee transport condition related to bus use.

A fourth modification to PA 10_0138 was lodged in September 2017 to remove sound power specific conditioning. This modification has been withdrawn.

A fifth modification to PA 10_0138 was approved on 20 December 2019 to allow for the continued use of the Olivedene pipeline and associated infrastructure to convey water to the MCCM to meet operational water demands.

A sixth modification to PA 10_0138 was also approved on 20 December 2019 to allow for the use of the Roma and Brighton water supply pipeline and associated infrastructure to convey water to the MCCM to meet operational demands.

A seventh modification to PA_10_0138 was approved on 24 August 2021 to allow for the extension of the Northern Emplacement footprint, and an increase to the maximum height of a section of the Northern Emplacement by 1 meter, incorporating macro and micro relief.

A eight modification to PA_10_0138 was approved on 19 January 2022. This allows for the use of mobile coal sizing equipment in the existing ROM coal stockpile area and the open cut pit, mobile rock crushing equipment in the Northern Emplacement Area, and disposal of used heavy vehicle tyres in waste rock emplacement areas

Construction of the MCCM commenced in December 2013 and was substantially completed in 2015. The operations phase of the MCCM commenced in June 2014, and coal was first transported from the MCCM via the rail spur in December 2014.

1.3 Scope

This NMP has been prepared in accordance with the requirements of PA 10_0138, as modified by NSW Department of Planning Industry & Environment (DPI&E). The aim of this plan is to manage project specific and cumulative noise impacts associated with the construction and operational phases of the MCCM. This plan is a requirement of conditions 16 and 25 of Schedule 3 of the approval. Condition 3 of Schedule 5 of the approval prescribes the content requirements of management plans.

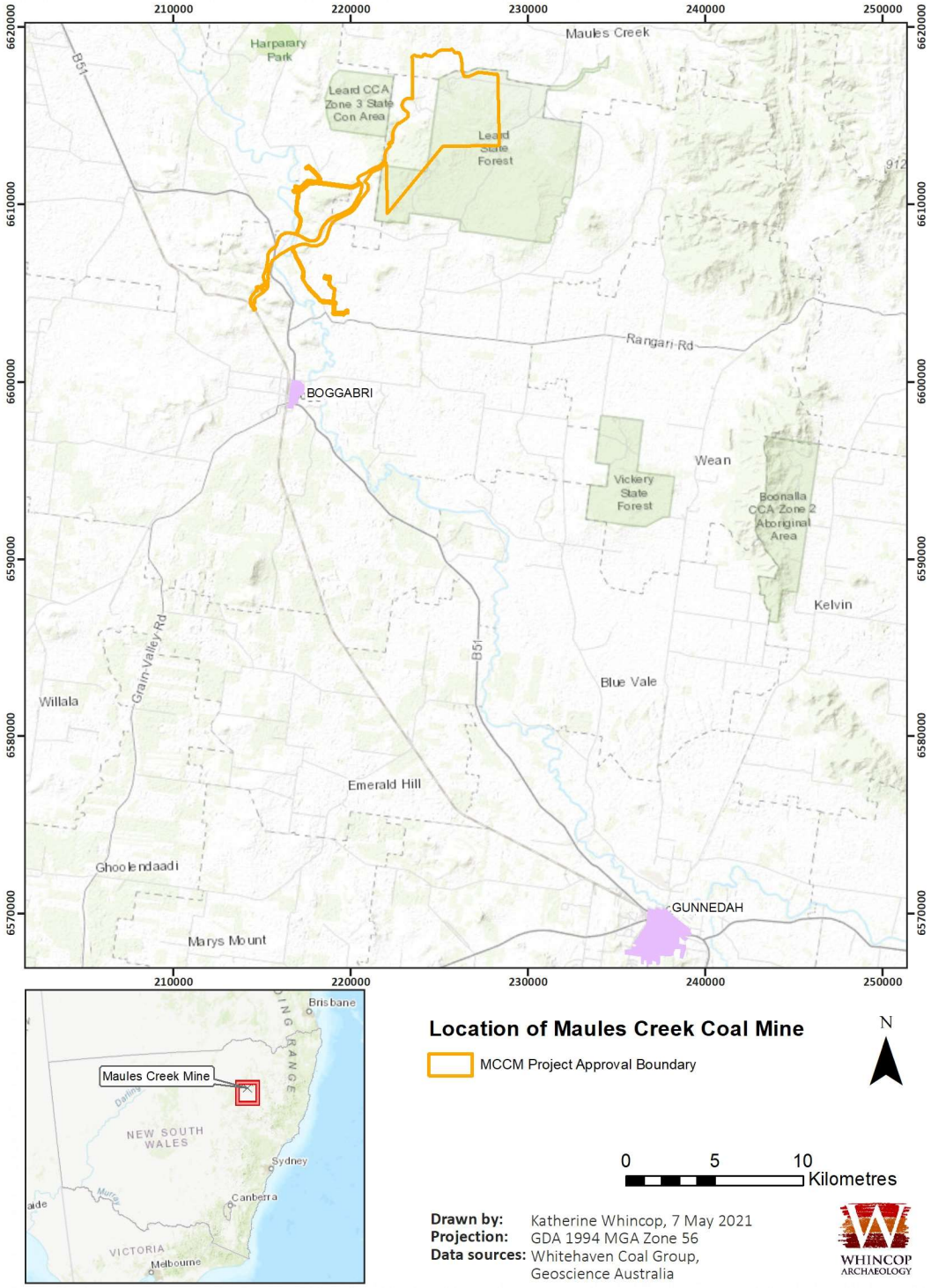

Figure 1 Project Layout

This NMP has been prepared in consultation with the NSW EPA in accordance with the requirements of the approval. The NMP is a dynamic document and changes will be made as warranted over time. As specified in Schedule 5, Condition 5 of the approval, a NMP review will be conducted within 3 months of the submission of an:

(a) Annual Review.

(b) Incident Report.

(c) Independent Audit.

(d) Modification to the conditions of approval.

Independent Environmental Audits are undertaken in accordance with Schedule 5, Condition 10 of the approval. Where applicable, recommendations from each audit report with respect to the NMP have been addressed in this document.

1.4 Objectives

The objectives of this management plan are to:

- Ensure that construction noise, operational noise and vibration from MCCM are minimised.
- Maintain compliance with conditions of the approval, environment protection licence and legislation relating to noise.
- Provide a protocol for monitoring and evaluation of noise impacts on surrounding private residences and sensitive receivers.
- Manage project specific and cumulative noise impacts associated with the MCCM mining operations.
- Communicate with the local community and regulators regarding MCC's activities.

All of the noise related approval requirements are addressed in this document, as detailed in Section 2.0.

2.0 STATUTORY REQUIREMENTS AND COMMITMENTS

This management plan has been prepared to fulfil the requirements of relevant legislation, approved conditions, Project EA commitments, and relevant standards and guidelines.

2.1 Relevant Legislation

The *Protection of the Environment Operations Act 1997* (PoEO Act) is the principal piece of legislation governing noise emissions in NSW. The PoEO Act requires an Environment Protection Licence (EPL) be held for mining operations such as the MCCM. The EPA has been consulted during the initial preparation of this management plan.

2.2 Project Approval Conditions

This NMP aims to ensure that the noise criteria presented in the approval are met during the construction and operation of the Project.

2.2.1 Construction Conditions

Conditions 4 to 6 of Schedule 3 of the approval which address construction noise criteria are reproduced in Table 1.

Table 1: Construction Noise and Vibration Criteria

<table>
<tr><th>Approval Condition</th><th>NMP Reference</th></tr>
<tr><td colspan="2">Schedule 3</td></tr>
<tr><td colspan="2">Construction Noise and Vibration Criteria – Maules Creek and Boggabri Shared Rail Spur Lines.</td></tr>
<tr><td>4. 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 4.1</td></tr>
<tr><td>5. 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:</td><td>Section 5.1.1</td></tr>
</table>

Approval Condition	NMP Reference
Schedule 3	
Construction Noise and Vibration Criteria – Maules Creek and Boggabri Shared Rail Spur Lines.	
(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).	
6. If the Proponent 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.*	Section 4.1.1

2.2.2 Operational Noise Criteria

Conditions 7 and 10 of Schedule 3 of the approval provide operational noise criteria. These criteria are reproduced in Table 2.

Table 2: Operational Noise Criteria

<table>
<tr><th>Approval Condition</th><th>NMP Reference</th></tr>
<tr><td colspan="2">Schedule 3</td></tr>
<tr><td colspan="2">Noise Criteria</td></tr>
<tr><td>7. Except for the noise affected land in Table 1, the Proponent shall 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.
• Operational noise includes noise from the mining operations and the use of private roads and rail spurs.
However, these noise criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.</td><td>Section 4.2</td></tr>
<tr><td>Cumulative Noise Criteria</td><td></td></tr>
<tr><td>10. Except for the land listed in Table 1, the Proponent shall 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.
Table 6: Cumulative noise criteria dB(A) $L_{Aeq\ (period)}$
<table>
<tr><th>Land</th><th>Day/Evening/Night
$L_{Aeq\ (Period)}$</th></tr>
<tr><td>All privately owned residences</td><td>40</td></tr>
</table>
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.
• Operational noise includes noise from the mining operations and the use of private roads and rail spurs.</td><td>Section 8.0</td></tr>
</table>

2.2.3 Mitigation and Acquisition

Conditions 1, 2, 3, 8, 9 and 11 of Schedule 3 set out the mitigation and acquisition obligations related to noise impacts from the Project. These are shown in Table 3.

Table 3: Mitigation and Acquisition

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 Proponent shall acquire the land in accordance with the procedures in conditions 8-9 of schedule 4. *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 Proponent has an agreement with the owner(s) of the relevant properties to generate higher noise levels, and the Proponent 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 Proponent 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 Proponent 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 6.0
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 Proponent 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 Proponent 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. *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 Proponent must undertake whichever option has been requested by the owner(s). However, this condition does not apply if the Proponent has an agreement with the owner(s) of the relevant residence to generate higher noise levels, and the Proponent 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.*	Section 6.0

Approval Condition	NMP Reference
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 Proponent 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 Proponent shall 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 Proponent to acquire the residence and land in accordance with the procedures in conditions 8-9 of Schedule 4.	Sections 4.2.5, 6.0

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:*
   - *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*
   - *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.*
5. *The Proponent shall 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

Approval Condition	NMP Reference
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 shall be made in writing to the Planning Secretary. If the Planning Secretary considers that a noise impact assessment is warranted, then the Proponent shall 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 Proponent 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 Proponent 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 Proponent must undertake whichever option has been requested by the owner(s). However, this condition does not apply if the Proponent has an agreement with the owner(s) of the relevant residence to generate higher noise levels, and the Proponent 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 Proponent 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.*	Section 6.06.0
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 shall be made in writing to the Planning Secretary. If the Planning Secretary considers that a noise impact assessment is warranted, then the Proponent shall 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 Proponent 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 Proponent 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 Proponent has an agreement with the owner(s) of the relevant residence to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement. *Notes:*	*Section* 6.0

Approval Condition	NMP Reference
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 Proponent 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.*	
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 shall be made in writing to the Planning Secretary. If the Planning Secretary considers that a noise impact assessment is warranted, then the Proponent shall 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 Proponent 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 Proponent 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 Proponent must undertake whichever option has been requested by the owner(s). However, this condition does not apply if the Proponent has an agreement with the owner(s) of the relevant residence to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement. The Proponent 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 Proponent, 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 Proponent 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 8.0

2.2.4 Noise Control and Management

Conditions 12 to 17 of Schedule 3 describe the various noise management measures required to be implemented to the Project. These requirements are reproduced in **Table 4**.

Table 4: Noise Management Measures

Approval Condition	NMP Reference
Schedule 3	
Attenuation of Plant	
12. The Proponent shall: (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 4.2.1 and 4.2.2
13. The Proponent shall: (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.	Sections 4.2.14.2.2 and 5.2.2
Maules Creek Rail Spur Line – Noise impacts	
14. The Proponent shall: (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
Operating Conditions	
15. The Proponent shall: (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	This document Section 5.0 Sections 5.1.2and 5.2

Approval Condition	NMP Reference
noise mitigation measures to ensure compliance with the relevant conditions of this approval;	Sections 4.2.1 and 4.2.2
(c) Maintain the effectiveness of noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired;	Sections 4.2.1 and 4.2.2
(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;	Section 4.2
(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);	Section 4.2
(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;	Section 4.2Section 8.0
(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.	
Noise Management Plan	
16. The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Planning Secretary. This plan must:	This document and the Boggabri Tarrawonga Maules Creek (BTM) Precinct Noise Management Strategy
(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;	
• 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	

Approval Condition	NMP Reference
• 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.*	

2.3 Environment Protection Licence

MCCM is regulated under the PoEO Act by EPL 20221. EPL 20221 enforces site specific requirements for pollution reduction in accordance with the guiding principles of the PoEO Act.

Noise limits and monitoring requirements are specified within EPL 20221 as outlined by the following conditions:

L3 Noise Limits

L3.1 Noise generated at the premises must not exceed the noise limits in the table below.

Locality and Location	***Day*** $L_{Aeq\ (15\ minute)}$	***Evening*** $L_{Aeq\ (15\ minute)}$	***Night*** $L_{Aeq\ (15\ minute)}$	***Night*** $L_{A1\ (1\ minute)}$
All privately owned residences	*35*	*35*	*35*	*45*

L3.2 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 Conditions (PA 10_0138).

(b) Subject to a private agreement, relating to the noise levels, between the licensee and the landowner

L3.3 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.

Points: 25 (NM1), 27 (NM3), 28 (NM4), 29 (NM5), 30 (NM6)

Time Period	*Measurement Parameters*	*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.

L3.4 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.

L3.5 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.

L3.6 For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

L3.7 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

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.

L5 Other Limit Conditions

L5.1 *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.*

Location	***Construction Noise Criteria Day*** $L_{Aeq(15\ minute)}$
256	*50*
259	*45*
All privately owned residences	*40*

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.

M8 Other monitoring and recording conditions

Noise Monitoring

M8.1 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.

Points: 25 (NM1), 27 (NM3), 28 (NM4), 29 (NM5), 30 (NM6)

Assessment Period	***Minimum frequency in a Reporting Period***	***Minimum duration within an assessment period***
Night	*Monthly*	*15 minutes*

R4 Other Reporting Conditions

R4.1 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

b) 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.

R4.2 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.

2.4 Statement of Commitments

Appendix 5 of the approval (PA 10_0138) provides MCC's Statement of Commitments for the MCCM. **Table 5** sets out the Statement of Commitments relevant to noise and where they are addressed in this NMP.

MCC has committed to implementing the necessary noise control and management measures as required to ensure that the EA predicted noise levels at private receivers are not exceeded. Typical noise control and management measures that would be implemented are discussed further in Section 5.0.

MCC has installed a real time noise monitoring system comprising units at locations selected in consultation with EPA, as presented within this NMP. Ongoing consultation has occurred with Boggabri and Tarrawonga Coal Mines in an attempt to develop a holistic network for the region as part of the BTM Precinct Noise Management Strategy. Section 5.1 provides further detail on the Real Time Noise System installed and operated in conjunction with Boggabri and Tarrawonga Coal Mines.

Table 5: Statement of Commitments

Statement of Commitments	NMP Reference
Noise and Blasting	
10. Maules Creek Coal will implement the necessary noise control and management measures as required to seek to ensure that the EA predicted noise levels at private receivers as listed in Table 23 are not exceeded.	Section 5
11. Maules Creek Coal will install a real time noise monitoring system at locations selected in consultation with OEH. Consultation will also occur with Boggabri and Tarrawonga Coal Mines in an attempt to develop a holistic network for the region.	Section 5.1

2.5 Relevant Standards and Guidelines

Guidelines and standards applying to noise at MCCM that were considered in the preparation of this NMP include:

- NSW *Industrial Noise Policy* (INP) (EPA, 2000).
- NSW *Noise Policy for Industry* (NPfI) (EPA, 2017).
- Vibration monitoring will be conducted in accordance with '*Assessing Vibration: a technical guideline*' (EPA, 2006).
- Australian Standard (AS) 1055 *Acoustics, Description and Measurement of Environmental Noise*.
- *NSW Draft Guideline Mining. Noise Monitoring Application Note* (NSW Government, Undated).

2.6 Surveillance Devices Act 2007

Devices used in the real time noise monitoring system may include the ability to record the audio signal which could contravene the *Surveillance Devices Act 2007* due to the inadvertent recording of personal conversations. The purpose of the audio device is to record mine noise for mine operational planning and response. MCC will not use the audio recorded for any other purpose and where it becomes aware that an audio file contains a conversation will delete the file.

Audio devices capable of recording conversations will have signage indicating that audio recording could occur in the vicinity of the device.

3.0 EXISTING ENVIRONMENT

3.1 Meteorological Data

An automatic weather station (AWS) was installed on the western edge of the Project Boundary on 14 May 2010. The monitoring site and instrumentation is in compliance with Australian Standard (AS) 2923:1987 - "*Ambient Air Guide for the measurement of horizontal wind for air quality applications*" and to the EPA approved method AM1 and parameters sampled to EPA approved methods AM2 and AM4. The parameters measured are presented in **Table 6**. Wind speeds measured in kilometres per hour (km/hr) can be converted to metres per second (m/sec) by dividing the km/hr result by 3.6.

Table 6: Weather Station Parameters

Parameter	Unit	Frequency	Averaging Period
Rainfall	millimetres (mm)	Continuous	Measures every 5 minutes but can be calculated to 1 hour
Temperature @ 2 metres (m)	Degrees C		Measures every 5 minutes* but can be calculated to 15 minutes
Temperature @ 10 m	Degrees C		
Wind Speed @ 10 m	m/sec		
Wind Direction @ 10 m	Degrees		
Sigma Theta	Degrees		
Solar Radiation	W/m^2		

* Meteorological measurements are time stamped at the end of each period and are selected for the applicable noise monitoring period (ie 15 minute period) and averaged to the nearest time stamp.

The location of the AWS was inspected and reviewed during a Mandatory Environmental Audit related to noise management required under the EPL and determined to be in an appropriate location.

As part of the Project EA, an analysis of local weather conditions was undertaken. A site representative meteorological data set was produced which identified prevailing conditions for the area and is summarised in **Table 7**.

Table 7: Prevailing Noise Meteorological Conditions

Atmospheric Parameter	Day		Evening and Night		
	Neutral	Prevailing	Inversion No Wind	Inversion ESE Wind	Inversion SSE Wind
Temperature (°C)	20	20	10	10	10
Relative Humidity (%)	70	70	90	90	90
Wind Speed (m/sec)	0	3	0	2	2
Wind Direction	-	South	-	ESE	SSE
Temp Gradient (°C/100 m)	-1	-1	3	3	3

3.2 Background Noise Levels

The MCCM is located in a rural area at some distance 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 Project Boundary. The Tarrawonga Coal Mine is immediately to the south of the Boggabri Coal Mine.

Background environmental noise levels were monitored at five representative locations during the period 8 September to 20 September 2010 as part of the Acoustics Impact Assessment conducted by Bridges Acoustics for the Project EA.

Background noise levels at each monitoring location were determined in accordance with the INP requirements. As explained in the INP, background noise levels below $L_{A90,15min}$ 30 dB should be considered as $L_{A90,15min}$ 30 dB for the purposes of determining noise criteria. Accordingly, the minimum rating background level of $L_{A90,15min}$ 30 dB was adopted for all receiver locations.

4.0 APPROVED NOISE AND VIBRATION

4.1 Construction Noise and Vibration

Construction activities can result in noise and vibration emissions that are detectable at nearby residences.

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. These activities were undertaken well away from the mine site, and at times, relatively close to residences.

The construction activities associated with all other components of the MCCM will comply with operational noise criteria. The locations of completed infrastructure are illustrated on **Figure 1**.

Time periods approved for construction include:

- Rail spur line construction (and/or upgrade) hours between 7:00 am to 6:00 pm Monday to Friday inclusive and 8:00 am to 1:00 pm on Saturday; and
- Other construction activities for the MCCM may occur 24 hours per day, 7 days per week.

4.1.1 Out of Hours Work

In accordance with Schedule 3, Condition 6, an 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.

In accordance with Schedule 3, Condition 6 of the approval, there is sufficient justification for operating outside the standard work hours, where construction noise on the rail spur line is predicted to be at or below the 35 dB(A) operational noise criterion at sensitive receptors. MCC is committed to ensuring that any future construction activities on its section of rail spur line during the night time activities, remain below 35 dB(A) and/or below operational noise criteria at sensitive receptors using the OOHW Protocol.

It is noted that 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.

4.2 Operational Noise Emissions

Time periods approved for operation of the MCCM are 24 hours per day, seven days per week.

Noise emissions can be from mobile or fixed plant used for the MCCM. These noise emissions have the potential to adversely affect the acoustic environment and residences surrounding the MCCM. Noise emissions for the MCCM were modelled within the Project EA for the assessment of impacts, which identified the key areas requiring management.

The Planning Assessment Commission in their Assessment Report stipulated that exceedances of L_{Aeq} 35 dB should be considered significant. Therefore any privately owned property that was predicted in the Project EA to be within the 35 dB(A) noise impact contour, are either subject to an agreement with MCC or have the right to acquisition upon request.

An assessment of worst-case construction and operational road traffic noise impacts was conducted as part of the original Project EA and traffic related to the Employee Transport Modification. It was concluded that predicted worst case operational traffic noise levels would remain well below the 55 $L_{Aeq(1hr)}$ day criterion and within the 50 $L_{Aeq(1hr)}$ night criterion at all private receivers.

Product coal from MCCM is transported by rail to the Port of Newcastle. Various trains including coal, general freight and passenger services currently use the Werris Creek to Mungindi Railway. The impact assessment in the Project EA concluded that the proposed coal train movements would produce a similar maximum noise level as current train movements; no increase in maximum noise levels is anticipated.

Noise from trains on the Werris Creek to Mungindi Railway is regulated through the Australian Rail Track Corporation's (ARTC's) EPL 3142. Noise emissions from MCC trains on the rail spur and loop to the Werris Creek to Mungindi Railway are to comply with operational noise limits specified in the approval. As part of the detailed design, a review of the rail spur was undertaken by a suitably qualified and experienced person to determine mitigation measures as per Schedule 3 Condition 14 of the approval and approved by the DPI&E. In accordance with Schedule 3 Condition 14(c) and (d) of the approval, noise monitoring of the rail spur was undertaken, including during adverse inversion conditions, to determine the accuracy of predicted acoustic impacts, optimal train speeds and the effectiveness of the noise reduction measures identified in the design review. . A qualitative assessment of the effectiveness of noise reduction measured was undertaken. Significant wheel squeal was not noted, confirming noise reduction measures are generally effective at reducing wheel generated noise.

Cumulative noise impacts may potentially be caused by simultaneous operation of the Project, Boggabri Coal Mine and Tarrawonga Coal Mine. These are addressed within the BTM Precinct Noise Management Strategy which is outlined in Section 8.0.

4.2.1 Mobile Plant

Open cut mining of coal is undertaken using large earthmoving machinery. These machines can operate at various locations in and around the mine. At times mobile plant, particularly rear dump trucks and dozers, can be at elevated and/or exposed locations relative to receptors. Noise attenuated plant will be deployed preferentially where possible to these elevated or exposed locations.

Sound Power Levels (SLWs) for mobile mining equipment have been derived from the EA noise assessment, with modelled sound power levels listed in **Table 8**. Those items that are not listed are considered insignificant noise generators in the context of a mining environment (e.g. light vehicles).

In accordance with Schedule 3, Conditions 12 and 13, newly commissioned mobile mining equipment undergoes sound power testing to ensure equipment and noise control measures deliver SLWs that are equal to or better than SLWs identified in the EA. An annual testing program, detailed in Section 5.2.2, provides ongoing noise control by identifying any item(s) of mobile plant that may require modification and/or repair to ensure measured site SLWs are equal to or better than modelled site SLWs identified in the EA.

Table 8: 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).

4.2.2 Fixed Plant

Sound power levels for fixed infrastructure at the site and sources with fixed locations (road and rail) that generate noise and were modelled in the Project EA are listed in **Table 9**.

Table 9: 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	103
Lo, Locomotive	96
TB, Train loadout	103
X, Train on rail spur 3	108
R, Access road 4	95

The cumulative noise levels were considered as part of Modification 8 with the operation of mobile crushers. The cumulative noise levels from the concurrent operation of the MCCM incorporating the Modification and other mining projects would comply with the recommended amenity noise level as determined in accordance with Table 2.2 of the NPfI and contained in PA 10_0138 at all relevant receivers.

4.2.3 Operational Noise Criteria

Schedule 3, Table 1 of the approval provides those privately owned properties that have acquisition rights. MCC is in ongoing discussions with these landholders in regards to meeting agreement over the management of noise or an agreement to purchase the property. Error! Reference source not found.***Figure 2*** provides land ownership information within and surrounding the Project Boundary including the location of neighbouring receivers and monitoring locations. MCC will continue to liaise and consult with the owners of the properties where effects of operational noise have been identified. In conclusion, these limits do not apply at privately owned residences that are:

- Identified as subject to acquisition and/or noise mitigation on request; or
- Subject to a private agreement.

For the remaining privately owned properties that are noted in Table 1 and Table 2 and 2A of the approval that have not been purchased by MCC, or another neighbouring mining company, the requirements of Schedule 3 Condition 3 of the approval will still apply.

It is anticipated that noise and vibration from MCCM related activities will be minimal at receptors not already identified in Tables 1 and 2 of the approval given that all other privately owned residences are located at considerable distances from the MCCM. In accordance with Schedule 3 Condition 7 of the approval, and EPL 20221 L3 Noise Limits, noise generated by the MCCM must not exceed the following criteria (**Table 10**).

Table 10: Noise Criteria

Land	Day/Evening/Night $L_{Aeq\ (15min)}$	Night $L_{A1\ (1min)}$
All privately owned residences	35	45

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 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 MCC '*minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply*'.

During periods where meteorological conditions result in the noise criteria not applying to the project, real time monitoring data will continue to be utilised to minimise the noise impacts of the project.

5.0 NOISE MANAGEMENT

As required by Schedule 3, Condition 14 (b) of the approval, MCC operates a comprehensive onsite noise management system. The noise management system utilises a combination of predictive noise and meteorological forecasting and real time noise monitoring data to guide day to day planning of mining operations. Proactive and reactive noise mitigation measures will be implemented to facilitate compliance with the relevant criteria within the approval.

5.1 Noise and Vibration Monitoring

Construction noise and vibration levels were measured on a monthly basis at residences in close proximity to the proposed construction activities occurring at the time (subject to access agreements). Various real time monitoring units were also available in the representative locations in the local area which monitored noise emissions from the construction activities.

Operational noise levels are recorded continuously using unattended equipment (real time monitoring) and monitored by attended monitoring at regular intervals prescribed by the EPL. The number and location of monitoring units is shown on **Figure 2**.

Attended monitoring is the methodology for determining compliance with prescribed noise limits. Compliance is the official performance of the site relative to compliance limits. Attended monitoring can more accurately determine the contribution of MCCM related activities to measured noise levels.

Unattended monitoring data (real time monitoring) includes noise from all sources, not just mine related noise. Results from the real time monitoring system are used as an onsite management tool if and when potential noise issues arise. It also provides a history that can be used to identify trends and is useful for management, planning and decision-making related to noise control.

Both attended and unattended noise monitoring may be used to quantify cumulative mining noise sources and contributions.

5.1.1 Attended Monitoring

Attended environmental noise monitoring shall be undertaken once per month during the night period at each location in **Table 11**, in accordance with Condition L3 and M8 of EPL 20221, to assess compliance with relevant noise criteria. Operational noise monitoring locations, as shown in **Table 11** and **Figure 2** have been selected as representative of sensitive residential receivers that may be potentially impacted by noise from mining operations and with consideration given to the privacy of residents (e.g. not monitoring immediately adjacent the dwelling). Locations have been selected to ensure coverage in terms of demonstrating compliance with the noise criteria within the approval and EPL.

Table 11: Noise Monitoring Locations

Location ID	Receiver No
NM1	68
NM2	108
NM3	225
NM4	35

NM5	171
NM6	104

Operational noise monitoring locations will be reviewed and where necessary modified as a result of monitoring results, changes to the mining operations or, changes in land ownership. Attended monitoring locations are chosen to be at suitably representative locations and are approved by the EPA under EPL 20221. Most recently, monitoring point NM4 was relocated closer to receiver 35 on the purchase of receiver 106, and NM5 was relocated closer to receiver 171. A future review of the real-time monitoring network will align references to 'NM' and 'RT' for consistency.

A Noise compass directional noise monitor will be trialled at receiver 171. This monitor will allow MCC to understand additional noise sources within the area and specifically look at that noise which can be apportioned to the mining operation.

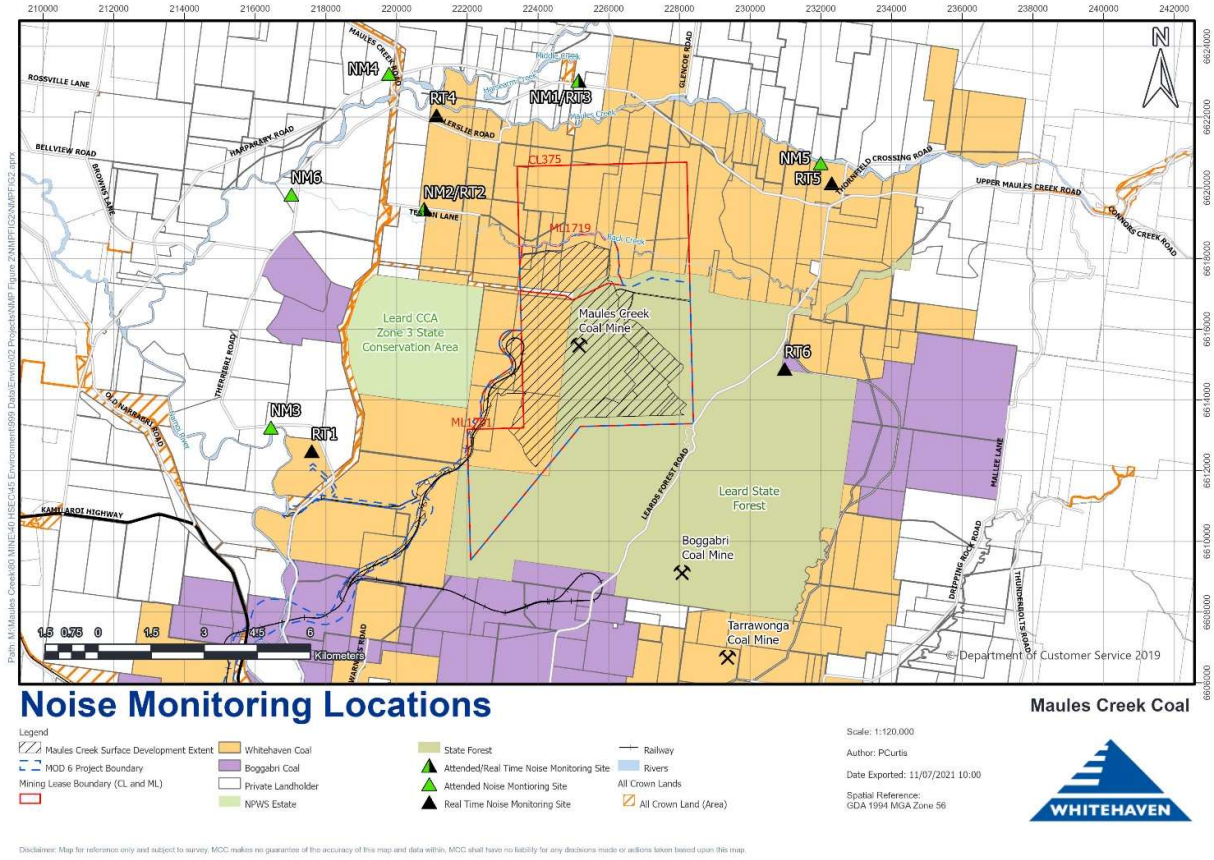

Figure 2: Noise Monitoring Locations

Attended noise monitoring will be conducted in accordance with the relevant NSW EPA requirements and AS 1055 *'Acoustics, Description and Measurement of Environmental Noise'*. The duration of each measurement is to be 15 minutes.

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

In accordance with Condition L3.5 of EPL 20221 and Condition 17 of the approval, 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:

- Data recorded by the meteorological station identified as EPA Identification Point(s) W1 must be used to determine meteorological conditions (refer **Table 6** regarding average); and
- Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the INP.

Condition L3.6 of EPL 20221 states that, "For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW INP must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment." However, NPfI Fact Sheet C has replaced Section 4 of the INP. Therefore, modifying factors will be assessed in accordance with NPfI during attended monitoring.

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

In order to assess if an exceedance is sustained, the following protocol will be implemented by the attended noise acoustic consultant.

5.1.1.1 Attended Monitoring – Exceedance Protocol

This 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. Acoustic consultant obtains a single result above project noise impact criteria near a private residence.
2. Acoustic consultant notifies mine immediately of result.
3. Acoustic consultant 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.

5.1.2 Real-Time Monitoring

Continuous unattended noise monitoring (referred to in the approval as '*real time*' monitoring) is required as a management tool to satisfy the requirements of Schedule 3, Conditions 15 b) and e) and Condition 16 b), of the approval. Consistent with the *NSW Draft Guideline Mining Noise Monitoring Application Note* (NSW Government, undated), results from the real time monitoring system should not be used to determine compliance, since the noise levels recorded represent noise from all surrounding sources. 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 5.2.1);
- Reactive Management: As an investigative tool to determine the noise contribution of MCCM related activities (i.e. in the event of a noise complaint or criteria exceedance described in Section 5.3); 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 5.2.3).

MCC operates a network of (7) real time noise monitors inclusive of one Noise Compass Directional Noise Monitor as listed in **Table 12** and **Figure 2**.

Table 12: Real Time Monitor 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

Locations have been selected in consideration of a number of factors, with the primary focus being on the suitability of the location to represent noise impacts that would be experienced in the surrounding area and at nearby privately owned residences. The installation of any monitoring infrastructure on mine owned land is also beneficial to maintain the security of the equipment, as well as unimpeded ease of access for planned or unplanned maintenance. It also minimises disturbance to landowners and the local community. Alternate locations will be considered throughout the life of the mine as required, subject to landowner access agreements.

Real time noise monitoring is undertaken using equipment which is capable of estimating the contribution of mining alone to total measured levels with sufficient detail to allow management of operations to minimise noise in the surrounding environment. This will be 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 course of the year to compare estimated mining noise data from the real time monitoring system.

Data from the network is 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 mine related noise. Data is to be used as a management tool only and is not to be used for compliance. Any unattended data will be collected and stored onsite for a minimum period of 4 years to allow a 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 3 dB added;
- Wind speed;
- Wind direction;
- Atmospheric stability class indicator (sigma theta); and
- Site operational alarm criteria.

5.2 Proactive Measures

5.2.1 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 13**.

Table 13: 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 Project 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 14**. **Table 15** provides a real time risk response matrix for implementation when recorded noise levels meet the relevant trigger levels.

Table 14: Real Time Response Management Actions

Colour	Management/Control Action
Green	Real time monitoring display active and monitored.

Colour	Management/Control Action
	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 15. • 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 15: 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

Identified Problem Noise Source	Possible Control Option
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 night time operations;
- Off-site night time inspections to note the audibility of mine generated noise; and
- The implementation of a Noise Compass Directional Noise Monitor.

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 5.1.2);
- 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).

After each real time monitoring notification that was determined to be a noise criterion exceedance due to mining operations, the following actions are to take place:

- 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.

5.2.2 Sound Power Control

Acceptability of noise from the site, and hence granting of approval, was based on operational noise modelling undertaken as part of the Project EA.

To ensure the highest likelihood of compliance with regulatory limits, and an acceptable acoustic environment around the site, a number of noise management controls and practices shall be undertaken to ensure that total site noise levels do not exceed those modelled in the Project EA (or most recently approved noise model):

- All mining trucks and water carts used on the site are commissioned as noise suppressed (or attenuated) units in accordance with Schedule 3, Condition 12(a) of the approval;

- All plant listed in Section 4.2.1 require sound power testing during commissioning by a suitably qualified/experienced noise consultant and deliver sound power levels that are equal to or better than the sound power levels identified in the Project EA when entering operation on site, in accordance with Schedule 3, Conditions 12(a) of the approval;

- Ongoing noise testing of mobile fleet shall be undertaken annually by a suitably qualified/experienced noise consultant, wherein a representative sample of the different types of equipment in the fleet (approximately 1/3 of the entire fleet) are tested each year, such that all permanent mobile plant on site be tested over a three-year period. This commitment is based on advice provided by DPI&E regarding Schedule 3, Condition 13(a) of the approval;

- Individual items of mobile plant that exceed sound power levels specified in Section 4.2.1 by 3 dB or more will come under additional investigation to assess the cause of the exceedance to ensure the non-compliant item is modified and/or repaired as necessary, as per Schedule 3, Condition 13(b) of the approval;

- Where the effectiveness of noise suppression equipment fitted don plant is found to be 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 2 dB of sound power levels specified in Section 4.2.1 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 2 dB, 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;

- Noise testing of fixed plant listed in Section 4.2.2 shall be undertaken by a suitably qualified/experienced noise consultant 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; and

- 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.

These measures will be taken, in conjunction with annual noise model validation outlined in Section 5.2.3 to ensure compliance with off-site noise criteria. If updated noise modelling predicts noise levels above off-site approved criteria, then investigation into these potential exceedances will be undertaken as required by the approval. MCC will report yearly through the annual return on the results of the testing program and any attenuation works, which are completed. All approved Annual Returns are publically available on the Whitehaven Coal website.

MCC has also implemented additional operational practices and equipment to reduce the contribution of mine noise including implementing acoustic bunds, trialling modifications to dozer tracks, commissioning a rubber tyred dozer, modifying operational areas, installing panelling on key CHPP infrastructure, and implementing recommendations from the Mandatory Environmental Audit. These measures contribute to maintaining compliance with total site noise levels.

In addition to plant operated by MCC, it is an approval condition that locomotives accessing the spur have noise emissions in accordance with the ARTC EPL 3142. MCC will continue to ensure through its contractual arrangements and reporting requirements that the rail providers who will be engaged to transport coal from the MCCM, supply locomotives and rolling stock that meet the requirements of ARTC's EPL.

MCC also considered refinements to the various infrastructure located at the CHPP (Section 5.2.1) to further manage noise and air quality emissions from this infrastructure and have implemented a number of improvements, including equipment screening and a program to progressively update conveyor rollers.

5.2.3 Proactive Noise Planning - Model Forecasting

Condition 15 (b) of Schedule 3 of the approval requires '*proactive … mitigation measures*'. The use of proactive planning and the identified risk responses outlined in Section 5.2.1 have been adopted to enable proactive management of potential noise issues.

Additionally, the BTM Noise Strategy outlines integration of noise prediction measures across the precinct of sites. Please refer to Appendix A and Section 8 below. Daily review of meteorological forecasts and appropriate TARP levels is also undertaken as part of proactive noise management planning.

Management responses to reduce noise levels are outlined in Section 5.2.1. As required by Schedule 5, Condition 13 (a) of the approval, the outcomes of this analysis, and meteorological forecast data used, will be provided on the Whitehaven website.

Condition 15 (f) of Schedule 3 of the approval requires an "*annual validation of the noise model for the project*". Attended and real time monitoring data will be used for validation of the model and to determine the effectiveness of that aspect of the site noise control management measures is to be conducted using attended and monitoring data. As such, the annual validation will be an ongoing process that is reported annually.

5.2.4 Review of Real-Time Noise Data for Trends

To facilitate a real-time noise management system, real time monitoring data from around the site will be analysed to ascertain trends in noise impacts including what instances of, or combinations of, operations and meteorological conditions typically generate higher mine-contributed noise levels offsite. These observations will be used for:

- Validation of proactive actions undertaken;
- Providing/refining a guide to operational controls required during a range of meteorological conditions; and
- Calibration or validation of site noise models (in conjunction with attended monitoring data).

The outcome of the data analyses will be communicated to the relevant site personnel as an aid to understanding the effectiveness of proactive noise planning and to any external contractors that may provide modelling services to MCC.

5.3 Reactive Measures

5.3.1 Community Noise Complaint

All responses to community complaints will be in accordance with the procedure described in the Maules Creek Environmental Management Strategy and as described in Chapter 6.0.

In the event of a community complaint about previous operations (complaint received post-event), all relevant information pertaining to the time of alleged noise nuisance is to be gathered as follows:

- Locations and quantities of mining plant operational;
- Meteorological conditions; and
- Noise monitoring data from the nearest real time noise monitor.

Real time monitoring data will be utilised to determine the contribution of MCCM related activities to noise emissions. Using the above data an assessment is to be made as to the validity of the noise complaint.

6.0 COMPLAINT RESPONSE PROTOCOL

MCC have implemented a Maules Creek Coal Community Response Procedure as described in the Maules Creek Environmental Management Strategy (EMS). The procedure provides details how to receive, respond to, record and action any community complaints received in relation to the operation. MCC will keep a legible record of specific details relating to any community complaint including:

- The nature of the complaint;
- The method of the complaint (e.g. telephone or via email through the Whitehaven website);
- Relevant monitoring results, including meteorological conditions at the time of the incident;
- Site investigation outcomes and specific data as detailed in Section 5.3.1;
- Site activity and activity changes; and
- Any necessary actions assigned.

Records of complaints will be maintained in the complaints register database and kept on file for a period of no less than five years.

MCC maintains a 24-hour complaints hotline (1800 WHAVEN) to respond to any complaints from neighbouring residents or interested stakeholders. The complaints hotline is available on the Whitehaven Coal website.

Complaints received relating to current noise emissions will be reviewed to determine mine noise contribution and operations to be modified as required. For other less critical complaints, contact with the complainant will be attempted within 24-hours of the initial complaint to gather additional information. Every effort will be made to ensure that concerns are addressed in a manner that facilitates a mutually acceptable outcome for both the complainant and MCC.

If any written complaints or requests are received from residences listed in Conditions 1 to 3, Schedule 3, of the approval, then an investigation into the complaints and any possible noise exceedances will be conducted. Negotiations for mitigation measures such as double-glazing, insulation and air conditioning installation or acquisition will be progressed as required by the approval. An agreement under schedule 3, condition 1 has been entered into with Land Parcel 108 allowing for the generation of higher noise levels. This has been communicated to the Department.

If the owners of land containing a privately owned residence which is not listed in Table 1 of the approval have reason to believe that operational noise from the project is causing noise levels to exceed 40 dB(A) LAeq(15min) over more than 25% of that land, the owners can request an independent noise impact assessment of the land. This request needs to be made in writing to the Planning secretary. If the Planning Secretary considers that a noise impact assessment is warranted then MCC will commission the assessment. If the noise impact assessment determines a sustained exceedance or is likely to cause sustained exceedances of the criteria a written request can be made to MCC for acquisition on accordance with Schedule 4 conditions 8-9 of the approval.

7.0 REPORTING AND REVIEW

7.1 Reporting

7.1.1 Scheduled Reporting

MCC's environmental noise performance is reported a number of ways. External reporting includes:

- An Annual Review (AR);
- Monthly attended monitoring results on the Whitehaven website;
- Community Consultative Committee (CCC) meetings;
- Updates on the Whitehaven MCC website of:
  - Daily weather forecasts for the coming week.
  - Proposed operational responses to weather forecasts.
  - Estimates of mine noise from real time noise monitoring (updated daily) and attended noise monitoring results.
- Notification of monitoring results to affected receivers.

Noise issues are addressed at the regular CCC meetings, including a description of monitoring results, the outcomes of investigations into noise controls and MCC responses to issues of concern or complaint. A summary report on any noise issues identified during monitoring will continue to be provided on the Whitehaven website and at CCC meetings.

The AR will, in accordance with the requirements of Schedule 5, Condition 4 of the approval:

a) describe the development … that was carried out in the past calendar year, and the development that is proposed to be carried out over the current calendar year;

(b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the :

- *relevant statutory requirements, limits or performance measures/criteria;*
- *monitoring results of previous years; and*
- *relevant predictions in the EA;*

(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;

(d) identify any trends in the monitoring data over the life of the project;

(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and

(f) describe what measures will be implemented over the next year to improve the environmental performance of the project.

A copy of the AR will be forwarded to regulatory agencies including DPIE and EPA. The AR will also be placed on the Whitehaven website as required under Schedule 5, Condition 12 of the approval.

The website has a facility for comments by members of the community.

7.1.2 Exceedance Reporting

In the event it is determined that an exceedance of a noise criterion has occurred, at the earliest opportunity (as soon as practicable) MCC will notify DPIE, EPA and other relevant agencies.

In accordance with Schedule 5, Condition 8 of the approval, MCC will notify the Planning Secretary of DPIE and relevant agencies as soon as practicable after formal confirmation of the details of the exceedance. MCC will submit a written report to the Planning Secretary of DPIE and relevant agencies within 7 days of the exceedance date that:

- describes the date, time, and nature of the exceedance;
- identifies the cause (or likely cause) of the exceedance;
- describes what action has been taken to date; and
- describes the proposed measures to address the exceedance.

7.2 Noise Management Plan Reviews

In accordance with Schedule 5, Condition 5 of the approval, this NMP will be reviewed within 3 months of any annual review, incident report, audit or modification to conditions of the approval or as otherwise agreed by the Department. Should this review identify any requirement to change the NMP, this document will be updated accordingly in accordance with the approval.

8.0 CUMULATIVE NOISE

Cumulative noise impacts are managed under the Boggabri-Tarrawonga-Maules Creek Complex (BTM Complex) noise Management Strategy. A noise monitoring network has been established to quantify cumulative noise levels from the BTM Complex and noise from individual mines' by monitoring in real-time (unattended) and attended noise levels at sensitive receivers. Cumulative operational noise will be managed using the communication protocol between MCC, Boggabri Coal and Tarrawonga Coal. Should the cumulative real time noise monitoring network identify significant noise resulting from the neighbouring mines, the relevant communication and assessment of activities to be modified will occur to minimise noise from their site. Consultative meetings have been implemented between the three member mines of the BTM. These meeting provides a mechanism to discuss the implementation of the BTM Complex Strategies that are in place to minimise the cumulative impacts on the surrounding area.

If the owners of land containing a privately owned residence which is not listed in Table 1 of the Approval have reason to believe that operational noise from the project and one or more other mines is causing noise levels to exceed 40 dB(A) LAeq(period), the owners can request an independent noise impact assessment of the land. This request needs to be made in writing to the Planning Secretary. If the Planning Secretary considers that a noise impact assessment is warranted then an assessment will be commissioned. If the noise impact assessment determines that the cumulative noise generated by the project combined with the noise from the other mines causes or is likely to cause a sustained exceedance of the criteria a written request can be made to MCC for mitigation measures to be implemented or acquisition in accordance with Schedule 4 conditions 8-9 of the approval.

The BTM Precinct Noise Management Strategy is included in Appendix A.

9.0 ROLES AND RESPONSIBILITIES

The roles and responsibilities of staff at MCC in respect of this NMP are presented below in **Table 16**.

Table 16: Roles and Responsibilities

Role or Responsibility	Person/People (or delegate)	Timing
Implementation of management plan	Site personnel	Ongoing
Coordination of noise monitoring consultant	Environmental Superintendent or Environmental Officer	Ongoing
Manage maintenance of unattended monitoring network	Environmental Officer	Ongoing
Attended noise monitoring	Consultant	Monthly
Sound power testing & repair of plant	Maintenance Superintendent	On delivery of new plant and annually. Repair as required.
Provide mine plans for modelling	Technical Services Superintendent	As required
Proactive and reactive noise management	Production Superintendent teams	Daily
Data review	Environmental Officer	Ongoing
Respond to community complaint	External Relations Superintendent	As required
Reporting – exceedance and scheduled reporting	Environmental Superintendent	Monthly and as required.
Plan reviews	Environmental Superintendent	As required

10.0 REFERENCES

2015 Independent Environmental Audit Maules Creek Coal Pty Limited (SMEC, 2015)

Maules Creek Coal Mine Conditions of Approval Independent Environmental Audit (ERM, 2018)

Assessing Vibration: a technical guideline (EPA, 2006)

Australian Standard 1055 (Standards Australia, 1997)

Australian Standard AS 2187.2 (Standards Australia, 2006)

Mandatory Environmental Audit Report, EPA 2017

Maules Creek Coal Project Environmental Assessment (Hansen Bailey, July 2011)

Maules Creek Coal Project Acoustics Impact Assessment (Bridges Acoustics, 2011).

Mobile Plant Sound Power Specification (Global Acoustics, November 2012)

NSW Industrial Noise Policy (EPA, 2000)

NSW Noise Policy for Industry (EPA, 2017)

Project Approval 10_0138 (Department of Planning and Infrastructure, issued 23 October 2012, modified December 2019)

State Significant Development Assessment Warkworth Continuation Project (SSD-6464) (Department of Planning & Environment, 2015)

Voluntary Land Acquisition and Mitigation Policy (NSW Government, 2014)

11.0 GLOSSARY

L_A - The A-weighted root mean squared (RMS) noise level at any instant.

L_{A90} - The level exceeded for 90 per cent of the time, which is approximately the average of the minimum noise levels. The LA90 level is often referred to as the "background" noise level and is commonly used to determine noise criteria for assessment purposes.

L_{Aeq} - The "A" weighted average noise energy during a measurement period.

L_{Ceq} - The "C" weighted average noise energy during a measurement period.

dB(A) - Noise level measurement units are decibels (dB). The "A" weighting scale is used to describe human response to noise.

Sound power level (SLW) - 10 times the logarithm of energy radiated from a source (as noise) divided by a reference power, the reference power being 1 picowatt.

Sound pressure level (SPL) - Fluctuations in pressure measured as 10 times a logarithmic scale, the reference pressure being 20 micropascals.

Hertz (Hz) - Cycles per second, the frequency of fluctuations in pressure, sound is usually a combination of many frequencies together.

APPENDIX A - BTM NOISE STRATEGY