



Environmental Management System

Rix's Creek Mine

NOISE MANAGEMENT PLAN

2016 – 2019

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1. Introduction

Rix's Creek Mine (RCM) is owned and operated by Bloomfield Collieries Pty Limited (Bloomfield). It is an open cut coal mine approximately 5 km north-west of Singleton in the Hunter Valley Coalfields of NSW. Global Acoustics was commissioned by RCM to prepare a Noise Management Plan (NMP) for the Rix's Creek Mine (the Mine).

1.1 Background

This NMP forms part of a series of Environmental Management Plans for the Mine. The Mine comprises the original Rix's Creek Mine, and, the former Integra Open Cut Project Mine.

The former Integra Mine Complex, previously owned by Vale, was placed in care and maintenance during 2014. The Integra Mine Complex consisted of the Integra Underground Coal Project and the Integra Open Cut Project. Bloomfield acquired the Integra Open Cut Project portion of the former Integra Mine Complex, including the Coal Handling and Preparation Plant (CHPP) and rail loading infrastructure, from Vale in August 2015. The underground operations were acquired by Glencore.

The NMP encompasses noise management from open cut operations, coal handling, preparation and processing and rail loading across the entire site, but excludes the underground operations now owned by Glencore.

Approved operations within the Mine areas include:

- For the former Integra Open Cut: the North Open Cut, South Pit, the Extended South Pit (Western Extension), Coal Handling and Preparation Plant (CHPP) and rail loadout infrastructure; and
- For the original Rix's Creek Mine: North Pit, Pit 2 and Pit 3 (also known as West Pit), rail loadout infrastructure (approved but not constructed) and CHPP.

Relevant infrastructure associated with the Mine includes open cut pits and mobile plant, CHPP, rail loading infrastructure, tailings dams and associated clean and dirty water storage facilities.

The former Integra Open Cut includes the North Open Cut pit, which was previously subject to special management conditions including restricted operating hours. This pit will remain in care and maintenance mode for the foreseeable future, and is therefore omitted from this NMP. Subsequent revisions of this NMP will include management controls for the North Open Cut pit if operations are proposed within the three year period following the NMP revision.

Whilst this NMP is dynamic and changes will be made as warranted over time, the formal life of this NMP is three years, beginning on the date of formal acceptance of the plan by the Department of Planning and Environment (DP&E). The document will be reviewed and amended as outlined in Section 9.2.

1.1.1 TERMINOLOGY

The current Rix's Creek Mine consists of the original Rix's Creek Mine (prior to addition of the former Integra Open Cut), and, the former Integra Open Cut Mine. The entire site is known collectively as Rix's Creek Mine; however, as the two previous mines operate under separate development approvals and

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licences, it is necessary to refer to the two parts of the Mine separately. For the purpose of referring to the two previous mines in this NMP, the former Integra Open Cut Mine is referred to as Rixs Creek North, and the original Rix’s Creek Mine is referred to as Rixs Creek South.

1.2 Statutory Requirements

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 Environmental Protection Licence (EPL) be held for mining operations such as the Rix’s Creek Mine.

The following comprises a summary of statutory requirements relevant to this NMP.

1.2.1 PROJECT APPROVALS

Rixs Creek North operates under the Integra Coal Complex Modification 3 Project Approval dated 1 February 2013. The approval is a consolidated approval incorporating both the Integra Underground Project (08_0101) and the Integra Open Cut Project (08_0102). All noise related conditions of the Project Approval are reproduced in Appendix B.

The most recent project approval for Rixs Creek South is DA N90/00356, granted by the Minister for Urban Affairs and Planning in October 1995. The approval has been modified six times, the most recent in November 2014. Criteria in the modified approval, which are relatively unchanged from the original, are based on the LA10 descriptor, and are considered out of date and not applicable to current noise management best practice. RCM submitted an EIS for the Rix’s Creek Mine Continuation of Mining Project (the EIS) to DP&E in October 2015. At the time of preparation of this NMP, approval of the continuation project EIS had not been granted. The EIS provided recommended noise impact assessment criteria for receptors surrounding RCM, and commitments regarding noise mitigation and management; these criteria and commitments have been adopted in this NMP for Rixs Creek South.

1.2.2 ENVIRONMENTAL PROTECTION LICENCES

The Rix’s Creek Mine operates former Integra open cut operation ie. Rixs Creek North under EPL 3391. It is expected this EPL will be modified to reflect modified noise conditions resulting from approval of the EIS for the Rix’s Creek continuation project.

Noise related licence conditions are reproduced in Appendix C.

1.2.3 COMMITMENTS MADE IN ENVIRONMENTAL ASSESSMENTS

Project approval for Rixs Creek North was based, amongst other things, on the government’s consideration of the two environmental assessments (EAs) that accompanied the application for the projects, namely Proposed Integra Underground Coal Project, July 2009, and Integra Open Cut Project, June 2009. The Statements of Commitments in both these assessments make certain commitments in respect to noise management at the former Integra Coal Complex. Appendix A sets out the relevant commitments and where they are addressed in the NMP.

The Rix’s Creek Mine Continuation of Mining Project EIS included noise controls and management strategies, which form the basis of commitments from RCM to effectively manage noise from the Mine. Appendix A sets out the commitments made in the EIS and where they are addressed in the NMP.

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1.3 Plan Objectives and Performance Indicators

The primary objectives of the NMP and their associated performance indicators are presented in Table 1-1.

Table 1-1 Plan Objectives and Performance Indicators

Objectives	Performance Indicators
Compliance with legislative requirements.	<ul style="list-style-type: none"> • Compliance with the Project Approval. • Compliance with Environment Protection Authority (EPA) EPL noise-related conditions.
Support procedures to manage and monitor noise emissions from the Mine.	<ul style="list-style-type: none"> • Procedures are endorsed by management. • Key personnel understand NMP requirements and that required actions are approved. • Actions are undertaken as planned.
Provide management mechanisms to minimise the potential for noise from the Mine to cause off-site impacts where possible.	<ul style="list-style-type: none"> • Procedures and programs address noise related Project Approval and EPL conditions in addition to EA noise commitments. • All procedures and programs are adequately described. • Site personnel responsibilities are clearly identified.

2. Existing and Planned Operations

2.1 The Mine

Rix's Creek Mine comprises the following major areas and infrastructure:

- ❑ Rixs Creek South:
 - ❑ North Pit;
 - ❑ Pit 2;
 - ❑ Pit 3 (also known as West Pit);
 - ❑ Tailings dams;
 - ❑ The CHPP, which receives, stockpiles and washes coal from the open cut operations. Loadout of product coal is currently via the Rixs Creek North rail load out facility into trains for transport to the port of Newcastle;
 - ❑ Significant noise sources include the open cut mining areas, the CHPP and the workshop.
- ❑ Rix's Creek North:
 - ❑ North Open Cut, which is the most northern open cut mining area, located between the Rixs Creek North tailings dams and a major mine water storage dam known as Possum Skin Dam The North Open Cut will be used as a water storage and not be operated for the foreseeable future;
 - ❑ South Pit, which forms a significant part of the overburden emplacement area for the Extended South Pit (Western Extension);
 - ❑ Extended South Pit (Western Extension) will be the primary area of open cut mining activities and will operate 24 hours a day;
 - ❑ The CHPP, which receives, stockpiles and washes coal from the open cut operations and loads product coal via the rail load out facility into trains for transport to the port of Newcastle;
 - ❑ Tailings dams. Three independent tailings dams are used for tailings disposal; and
 - ❑ Significant noise sources include the open cut mining areas, the CHPP, evaporator fans and the workshop.

2.2 Site Noise Emissions

Site noise emissions can be from mobile or fixed plant. These noise emissions have the potential to adversely affect the acoustic environment and surrounding residences.

Product coal is transported to the Port of Newcastle. Noise from trains on the loading loop is regulated through the Australian Rail Track Corporation's (ARTC's) Environmental Protection Licence (EPL) (No. 3142). Locomotives using the rail loop must comply with EPL 3142 and RailCorp's EPL 12208 unless they are issued with a Pollution Control Approval under the former Pollution Control Act, 1970. The train operator is requested by site to provide evidence of compliance with this requirement.

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2.2.1 MOBILE PLANT

The Rix's Creek Mine Mobile Plant Sound Power Specification provides limits for mobile plant noise emissions. The specification is based on sound power levels used in the relevant EA noise assessments.

The specification is very specific in regard to noise emissions and test methods and machine operating configurations for testing. The sound power specification is applied to most new mobile plant, and a sample of site mobile plant is tested on an annual basis to ensure ongoing compliance with the specification. Any items identified as being outside the allowed parameters, or with absent or damaged attenuation, are reported to the maintenance department for rectification. This equipment will be taken out of service immediately until repairs of the sound suppression systems have been completed.

The following noise controls will be implemented to minimise noise emission from mobile plant:

- Various locations at different levels will be provided for overburden emplacement to allow shielded emplacement to occur deeper in the pit during adverse meteorological conditions;
- Haul route alignments within the pit will maximise the available topographical shielding provided by the pit shell;
- For the Rixs Creek South maximum production rate scenario (2023), two high elevation emplacement areas will be developed, to the north and south of the pit, separated by approximately 1300 metres;
- All blast hole drills will be attenuated;
- The proportion of attenuated mobile equipment will be in accordance with the RCM fleet replacement forecast summary detailed in the EIS;
- Dozers will be restricted to 1st gear operation during adverse meteorological condition;
- A 4.5 metre high earth bund will be constructed to reduce noise emission to the south of the coal haul route;
- Separate day and night operating configurations will be developed (scaled down or modified operations for the night period); and
- Noise emission will be monitored via daily attended monitoring. When measured levels exceed a trigger level criterion, operations at the site will be modified to reduce noise emission. Modifications include plant being relocated within the pit to operate in areas that provide a high degree of topographical shielding, and/or, equipment is progressively shut down, starting with plant operating in the most exposed areas.
- Noise attenuated equipment will be preferentially deployed to locations on the site relevant to sensitive receivers likely to be impacted by operational noise as identified by the predictive noise model.

2.2.1.1 SOUND POWER LEVEL TESTING OF MOBLE EQUIPMENT

Sound power level testing will be undertaken of one third of the mobile equipment fleet annually so that all the equipment will be screened on a rolling three year cycle. The results will be used to:-

- Determine equipment >3 dB(L) difference from operational specifications whereby it will be scheduled for maintenance of noise attenuation equipment;

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- During routine maintenance equipment servicing if on inspection a major noise attenuation component is found to be defective, worn or broken the piece of equipment will be repaired or replaced;
- Dailey pre-start inspections undertaken by operators including a walk around of the equipment and visual inspection which includes sound attenuation equipment. Any devices identified as broken or absent by the operator the piece of equipment is then reported to maintenance staff who will further inspect and access the extend of the repairs necessary and action accordingly.

2.2.2 FIXED PLANT

Fixed plant at Rixs Creek North includes the CHPP and rail loading infrastructure. Fixed infrastructure that generates noise is listed in Table 2-2.

Table 2-2 Rixs Creek North Noise Generating Permanent Infrastructure

Item	Location
CHPP	Open cut mining infrastructure area
ROM bin	Open cut mining infrastructure area
Rail loadout	Rail loop and associated infrastructure
Evaporator fans	West pit
Workshop	Open cut mining infrastructure area

Fixed plant at Rixs Creek South includes the CHPP and rail loading infrastructure. Rixs Creek South product coal is currently trucked to the Rixs Creek North rail loop, where coal is stockpiled. Loadout of product coal is via a reclaim system, stockpile dozer, conveyors and coal bin. Fixed infrastructure that generates noise is listed in Table 2.3

RCM made the following commitments regarding fixed infrastructure in the EIS:

- A 6 metre high acoustic barrier will be constructed adjacent the ROM bin;
- An earth barrier is included on the east side of the ROM pad (already constructed);
- The south and east facades of the CPP (wash plant building) will be attenuated (sheeted).

•

Table 2-3 Rixs Creek South Noise Generating Permanent Infrastructure

Item	Location
CHPP	CHPP infrastructure area near administration buildings
Breaker	CHPP infrastructure area near administration buildings
ROM bin	CHPP infrastructure area near administration buildings
Rail loadout	Rixs Creek NorthRail loop and associated infrastructure
Workshop	CHPP infrastructure area near administration buildings

3. Roles and Responsibilities

The roles and responsibilities of staff at the Complex in respect of this NMP are presented in Table 3-4.

Table 3-4 Roles and Responsibilities

Role	Responsibilities
<p>Manager of Mining Engineering/Mine Manager</p>	<ul style="list-style-type: none"> • Ensure adequate resources are available to enable implementation of this NMP; and • Provide the requisite personnel and equipment to enable this NMP to be implemented effectively.
<p>Senior Environmental Officer</p>	<ul style="list-style-type: none"> • Authorise the NMP and future amendments; • Ensure inductions and training relevant to the NMP is implemented; • Review and ensure implementation of the NMP; • Act as the interface for environmental matters between government authorities, private industry, contractors, community groups and the wider community; • Inform the relevant Operations Manager and Manager of Mining Engineering of unexpected or serious environmental impact issues; • Promptly notify the relevant regulatory agencies of any incidences or non-compliances; • Assess the implementation of this NMP; and • Ensure training relevant to the NMP is implemented.
<p>Shift Supervisors</p>	<ul style="list-style-type: none"> • Maintain accountability for the overall environmental performance of the Mine, including the procedures and outcomes of this NMP; • Manage mining plant locations and activities to keep off-site operational noise levels compliant; • Direct the shut-down of operations for ongoing noise non-compliance if unable to regain compliance (following consultation with responsible mining personnel); • Respond to any unplanned events that may potentially result in, or cause, negative environmental impacts; • In the event of a noise complaint, direct Noise Monitoring/Compliance personnel to the vicinity of complainant; • Ensure reportable incidents are investigated and reported to the Environmental Officers. Provide shift changes via Pulse 'comments' section as well as shift examiner's report for oncoming shift supervisor; • Ensure response to alarms and complaints is undertaken in accordance with the NMP; and

Role	Responsibilities
	<ul style="list-style-type: none"> • Check that persons conducting response to alarms and complaints are appropriately trained, understand their obligations and the specific requirements of this NMP.
Environmental Officers	<ul style="list-style-type: none"> • Maintain a high level of understanding of the NMP; • Ensure the NMP is implemented in daily operations of the site; • Review this NMP if any significant changes to mine plans or operations occur; • Support the Senior Environment Officer to act as the interface for environmental matters between government authorities, private industry, contractors, community groups and the wider community (where appropriate); • Ensure reportable incidents are reported to relevant authorities; • Maintain an environmental monitoring program to quantify the Mine's mining operations effect on the local acoustic environment; • Ensure required monitoring to the standard and frequency outlined in this NMP and as per requirements of the EPL and Project Approval is conducted; • Develop an annual environmental report (Annual Review) detailing the results of key performance indicators developed for each monitoring location; • Respond to any unplanned events that may potentially result in, or cause, negative environmental impacts; • Ensure monitoring and testing is undertaken in accordance with the NMP; • Check that persons conducting the monitoring and testing are appropriately trained, understand their obligations and the specific requirements of this NMP; • Review and assess monitoring and testing results; • Promptly notify the Senior Environment Officer of any identified environmental issue; • Carry out all required notifications; • Commission specialist input as required under this NMP; and • As required, seek the assistance of a consultant to undertake specialised monitoring, interpretation and reporting functions.
Monitoring Personnel	<ul style="list-style-type: none"> • Maintain a high level of understanding of the NMP; • Review results of daily predictive model to determine areas of potential noise enhancement; • Plan daily off-site noise monitoring locations and time frames for attended management monitoring;

Role	Responsibilities
	<ul style="list-style-type: none"> • Undertake routine daily attended noise monitoring at locations identified as having potential for noise enhancement based on the daily predictive model; • Report attended noise levels to the Shift Supervisor (OCE) and complete the noise level log; • Plan noise minimisation actions in-conjunction with the Shift Supervisor; • Undertake re-monitoring at monitoring locations if noise issues are identified; • Monitor at location of any complaints received by the Shift Supervisor and/or Rix's Creek Mine Hotline; • Report changes made to operation for oncoming shift personnel to review; and • Assist Shift Supervisor in reporting of any complaints.
All personnel	<ul style="list-style-type: none"> • Adhere to the requirements of this NMP; and • Report any events that may potentially result in, or cause, negative environmental impacts immediately to your Supervisor.

4. Monitoring

Noise levels at strategic locations around the Mine are to be measured by attended monitoring at regular intervals. Attended monitoring is the preferred methodology for determining compliance with prescribed limits; it allows an accurate determination of the contribution by the Mine, if any, to measured noise levels.

Attended monitoring will be used for both management of noise from the Mine on a daily basis (in lieu of unattended monitoring), and, for compliance monitoring purposes. Attended management monitoring is deemed to fulfil the requirements of the Rix's North Project Approval requirements for real-time monitoring.

Unattended monitoring will be used to supplement the attended monitoring to control Mine noise in the Camberwell village area. This unattended monitoring will utilise the current Glencore - Mt Owen Sentinex Unit noise monitor in the village with parameters set to access noise from the direction of RCN.

4.1 Attended Noise Management Monitoring

4.1.1 INTRODUCTION

Operational noise management of the Mine to ensure off-site mining operational noise impacts do not exceed approved noise limit levels at surrounding receptors will be based on a program of attended monitoring. The program will include a number of tools including:-

- Predictive noise model forecasting based on weather forecast prediction for the Rix's Creek Mine. Further detail is included in Section 6.1.1;
- Daily operational planning. Further detail is included in Section 6.1.2; and
- Attended off-site noise monitoring utilising internal resources.

4.1.2 PROCEDURE

Attended off-site noise monitoring will be performed in response to complaints, and daily through the evening and night periods, by suitably trained personnel. The monitoring procedure will include:

- Utilise the predictive noise model to plan off-site noise monitoring locations and time frames for attended monitoring during the upcoming shift;
- Undertake attended noise monitoring at noise monitoring locations identified as having potential risk of noise non-compliance;
- Assess measured Mine only level against noise compliance criteria as per Section 4.1.6;
- Determine the appropriate response in accordance with the Trigger Action Response Plan (TARP) outlined in Table 4-5; and
- Document monitoring results on the noise monitoring log and any responses enacted in the Mine's environmental management system.

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Reactive response procedures are outlined in Section 6.2.2.

4.1.3 FREQUENCY

Attended monitoring should be performed once at each monitoring location identified in the daily monitoring plan as early as practical in the shift.

If noise levels are below trigger levels, the next monitoring survey should be commenced within 4 hours of commencement of the previous survey. If the predictive noise model indicates a change in enhancement conditions may occur during the interim, the next survey should commence as soon as practical after completion of the previous survey.

If noise trigger levels outlined in the TARP are reached, monitoring shall be continued until such time as the Mine has reduced noise to acceptable levels.

Data shall be collected in 5 minute periods if the Mine LAeq is more than 2 dB below the compliance limit. If the Mine LAeq is within 2 dB of, or exceeds the compliance limit, the measurement shall be extended to 15 minutes.

If the Mine is inaudible for more than 2 minutes, the noise monitoring log should be completed, but no measurement is required.

4.1.4 LOCATIONS

Attended monitoring will generally be performed at the locations indicated in Table 5-6. When the predictive model indicates enhancement at other locations, the monitoring program will be customised to provide targeted monitoring in high risk areas.

4.1.5 DATA TO BE COLLECTED

The Mine only LAeq result recorded. Low pass filtering will be used to remove extraneous noise such as insects when applicable. Other extraneous noise may be paused from the data set or excluded by other means.

Attention will be paid to the cumulative mining noise level. If the total cumulative mining noise level exceeds the cumulative noise criterion in the relevant Project Approval, and Rix's Creek Mine is not the primary cause of measured levels, contributing mines will be notified. If Rix's Creek Mine is the primary contributor, reactive response procedures outlined in Section 6.2.2 will be implemented.

4.1.6 COMPLIANCE CRITERIA

Table 5-7 sets out noise compliance criteria for regular attended monitoring locations. Criteria for other locations, used for complaint investigation or assessment of other areas of predicted noise enhancement will be sourced from the relevant Project Approval.

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Table 4-5 Trigger Action Response Plan

TRIGGER	ACTION	RESPONSE
Noise complaint received by Shift Supervisor.	Shift Supervisor to record complaint on the Rix's Creek complaint/incident form and contact noise monitoring personnel to measure noise levels near the complainant's residence.	<ul style="list-style-type: none"> If noise levels are not attributed to Rix's Creek mine and below compliance levels operations to continue as normal. If noise levels exceed compliance levels shift supervisor to amend operations in conjunction with feedback from noise monitoring / compliance personnel.
	Noise monitoring/compliance personnel to review predictive noise model and meteorological conditions for any potential for the Mine to exceed compliance limits.	<ul style="list-style-type: none"> Arrange additional attended noise monitoring if required.
Measured Mine only LAeq more than 2 dB below compliance levels.	No further action required. Document results. Move on to next monitoring location.	<ul style="list-style-type: none"> No response required.
Measured Mine only LAeq within 2 dB of compliance levels.	Noise monitoring/compliance personnel to contact shift supervisor and document results.	<ul style="list-style-type: none"> Shift supervisor to review operation and prepare for modification of operations in accordance with Section 6.2.2. Noise monitoring / compliance personnel to re-monitor at the same location within 75 minutes and review meteorological conditions.
Exceedance of noise compliance levels in relevant Project Approval	Noise monitoring/compliance personnel to contact shift supervisor and document site results.	<ul style="list-style-type: none"> Shift supervisor to review operation and modify operations in accordance with Section 6.2.2. Shift supervisor to document changes. Noise monitoring / compliance personnel to re-monitor at site and review meteorological conditions. If levels still exceed compliance levels shift supervisor to review operation and make further changes.
	Noise monitoring/compliance personnel to review predictive noise model and meteorological conditions for any potential for the Mine to further exceed compliance limits.	<ul style="list-style-type: none"> Noise monitoring / compliance personnel to re-monitor at site and review meteorological conditions. Noise monitoring / compliance personnel to conduct further monitoring at sites likely to exceed noise levels

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		aligned with predictive noise model and meteorological conditions.
	Results of noise monitoring and changes to operation compiled into attended noise summary.	<ul style="list-style-type: none"> Review by oncoming shift personnel including Mine Manager and Environmental Officer.

4.2 Unattended Monitoring

4.2.1 INTRODUCTION

Continuous unattended noise monitoring is required as a management tool. Results from the real time monitoring system should not be used to determine compliance but should be used as a guide to achieve compliance. Compliance is achieved when RCN generated noise does not exceed Project Approval compliance limits. Any modifications to the site operations as a result of real time noise monitoring should be documented.

The RCN will operate real-time monitors as shown in **Error! Reference source not found..**

4.2.2 LOCATIONS

One real-time monitors will be used to monitor and manage noise emissions. This will be located in the Camberwell Village.

4.2.3 EQUIPMENT AND MEASUREMENT METHODOLOGY

Mining noise can be estimated from low pass L_{A90} levels using a suitable low pass cut-off frequency. .

Directional monitoring will be undertaken using equipment capable of (as a minimum):

- Simultaneous measurement and reporting of low pass noise from all directions;
- An angular resolution suitable to determine levels from the RCN and, separately, other mines or noise sources located in different directions; and
- Streaming audio.

4.2.4 DATA STORAGE AND DISPLAY

Any unattended data will be collected and stored on site for a minimum period of four years to allow data trend analysis as required.

The following data parameters, as returned from each unattended monitoring site, will be trended in real time and display available in the operation dispatch area as a management tool:

- Omnidirectional low pass L_{A90}
- RCN directional low pass L_{Aeq} ;
- Wind speed;
- Wind direction;
- Stability class determined as per Appendix E of the INP;
- The relevant impact criterion; and

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- ❑ The relevant cumulative criterion.

A highlight will appear on the data trend display for any period where a noise parameter value exceeds the relevant criterion.

4.2.5 ALARM METHODOLOGY

A noise alarm will be triggered when the:

- ❑ Average wind speed is less than 5 metres per second;
- ❑ Time is between 20:00 and 07:00 hours; and
- ❑ RCN direction low pass LAeq is within 2 dB of (or exceeds) the relevant impact criterion, or, the omni-directional low pass LAeq is within 2 dB of (or exceeds) the relevant cumulative criterion across three (3) consecutive five (5) minute periods.

Implementation of management and control measures will be the responsibility of the OCE and would, where possible, involve relocation or shutdown of equipment suspected of being responsible for elevated offsite noise levels. Past experience, with reference to the observed effectiveness of actions taken, will be drawn upon when determining potential operational changes. A reassessment of noise levels will be required within 30 minutes of each relocation/shutdown to determine effectiveness of that action.

4.2.6 SUMMARY

Unattended monitoring is to be used as a noise management tool and not for compliance purposes.

Data returned will be used, in conjunction with meteorological data, to trigger noise alarms when mining noise is approaching predetermined values. The response actions are designed to avoid potential non-compliances.

Responsibility: Environmental Advisor

Timing: Monitoring will be continuous. Response to alarms will be as needed.

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5. Attended Noise Compliance Monitoring

5.1.1 INTRODUCTION

Attended monitoring is required to assess compliance with regulatory limits. Note: As described in this document it does not address the 25% of privately owned land aspect of Schedule 3, Condition 2 of the Rixs Creek North Cut Project Approval. As recommended in the 2011 Independent Environmental Audit, the requirement to assess affectation of 25% of privately owned land should be removed as a requirement (for all criteria); it is not practical to determine and has no relevance to resident amenity.

Attended monitoring at all receptor locations will be at night only commencing from 9pm, with results compared to all criteria (day, evening and night). Atmospheric conditions and noise propagation are usually the same on the evening/night and night/day time boundaries. Note also that receptors near to, or exposed to, the New England Highway have a completely different noise environment in the day due to traffic such that mining noise is unlikely to be a problem. This is consistent with the Independent Review Of Cumulative Noise Impacts -Camberwell Village (WMPL, May 2010), which states:

The LAeq levels near the New England Highway are predominately due to road traffic and associated heavy vehicles, rather than mining or other industrial noise, and is unlikely to decrease in the future.

5.1.2 FREQUENCY

Attended compliance monitoring is to be undertaken one night per calendar month.

5.1.3 LOCATIONS

Compliance cannot be determined at each individual resident so on the monitoring night monitoring is targeted to locations where operational noise is likely to be the highest. These monitoring locations are selected by the following procedure.

Residences surrounding the Mine have been grouped generally according to the locality and local acoustic environment. These groupings are referenced in the relevant EAs as Noise Assessment Groups (NAG). Monitoring locations, including the receptor reference numbers from the relevant EAs and the NAG each represents, are listed in Table 5-6.

Compliance monitoring is to be conducted at locations indicated as being in the zone of meteorological enhancement by the predictive noise model. The procedure for determining which locations to monitor is as follows:

1. The acoustic consultant undertaking the monitoring will access the predictive model website for the site for the upcoming night shift. The model results will indicate graphically the predicted zone of meteorological enhancement;
2. A monitoring plan will be developed by the consultant for the upcoming night period. Locations are to include:
 - a. If a clear zone of meteorological enhancement is indicated, one location in the opposite direction to the zone of predicted enhancement, and, all locations located within the predicted zone of enhancement; and

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- b. If relatively neutral conditions are predicted with no clear zone of meteorological enhancement, the eight locations nearest the mine will be monitored. NM01, NM03 and NM10 would be excluded, as non-compliance at those locations in the absence of meteorological enhancement is unlikely due to distance from the Mine.

- 3. A minimum of six locations are to be monitored per night.

Once monitoring commences, the consultant will apply best judgment to either proceed with the original monitoring plan, or a modified plan if monitoring results justify a change.

The procedure for monitoring when a clear zone of meteorological enhancement is predicted is:

1. The first monitoring location will be the potentially most affected location in the opposite direction to the zone of predicted enhancement to confirm noise emission in that direction is well below compliance criteria;
2. If the Mine L_{Aeq} is more than 2 dB below the relevant criterion at the first location ($L_{Aeq} < \text{criterion} - 2 \text{ dB}$), the consultant will proceed with the original plan and move to the locations within the predicted zone of enhancement;
3. If the Mine L_{Aeq} is within 2 dB of the relevant criterion ($L_{Aeq} \geq \text{criterion} - 2 \text{ dB}$), the consultant will monitor at the next most potentially affected location in the same general direction from the Mine. This procedure will be repeated until the Mine L_{Aeq} is more than 2 dB below the relevant criterion. Result acceptance procedures in Section 5.1.7 will be applied;
4. The consultant will then proceed with the original plan; and
5. If fatigue management rules result in insufficient time to monitor all locations, the consultant will apply best judgement to determine which locations will provide the best indication of compliance with the time available.

The procedure for monitoring when no clear zone of meteorological enhancement is predicted is:

1. The first monitoring location will be the potentially most affected location based on forecast and prevailing meteorological conditions;
2. If compliance is demonstrated, the consultant will proceed with the original plan;
3. If non-compliance is measured at any location, result acceptance procedures in Section 5.1.7 will be applied. Any locations in the same general direction from the Mine that were omitted in the original plan will be included; and
4. If fatigue management rules result in insufficient time to monitor all locations, the consultant will apply best judgement to determine which locations will provide the best indication of compliance with the time available.

The consultant shall maintain a fatigue management policy, which will be provided to the Mine and/or regulators on request.

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Table 5-6 Attended Monitoring Locations

NMP ID	EA Ref. (ICO/RCM) ¹	Owner or Area	NAG ²
NM01	132/171	Bowman	6 (ICO) / M (RCM)
NM02	91/NA	Olofsson	4 (ICO)
NM03	47/NA	Cherry	B, C, F, 1, 6 and 12 (ICO)
NM04	19/12	Andrews	11 and A (ICO) / A (RCM)
NM05	11/8	Ferraro	10 and 11 (ICO) / A (RCM)
NM06	145/19	Murray	9 (ICO) / B and C (RCM)
NM07	NA/61	Gardiner Circuit	8 (ICO) / D and E (RCM)
NM08	NA/152	Belmadar Way	NA / J, G and F (RCM)
NM09	NA/121	Llanrian Drive	NA / H (RCM)
NM10	NA/135	Long Point	NA / K and I (RCM)

Notes: 1. NA indicates location was not included in the EA for that project; and

2. Indicates the NAG reference the location represents from the relevant EAs.

Figure 5-1 illustrates attended monitoring locations.

5.1.4 METHODS

Attended monitoring is to be conducted in accordance with the 'Industrial Noise Policy' (INP) guidelines and Australian Standard AS 1055 'Acoustics, Description and Measurement of Environmental Noise'. The duration of each measurement is to be 15 minutes.

As indicated in L3.3, L3.4 & L3.5 of EPL 3391:

L3.3 Noise from the premises is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise level limits in this licence unless otherwise stated.

Where it can be demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternative means of determining compliance. See Chapter 11 of the NSW Industrial Noise Policy.

The modification factors presented in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.

L3.4 Noise from the premises is to be measured at 1 m from the dwelling facade to determine compliance with the LA1(1minute) noise limits in this licence.

L3.5 The noise emission limits identified in this licence apply under all meteorological conditions of:
a) Wind speeds up to 3m/s at 10 metres above the ground level; or

b) Temperature inversion conditions of up to 30C/100m and wind speed up to 2m/s at 10 metres above the ground.

In most cases, monitoring near the residence is impractical due to barking dogs or issues with obtaining access. In all cases, measurements are to be undertaken at a suitable and representative location.

Some measurement results may be inconclusive and reported as “Inaudible” (IA) or “Not Measurable” (NM). When site noise is noted as IA then there was no site noise at the monitoring location. However, if site noise is noted as NM, this means some noise was audible but could not be quantified. This means that noise from the site was either very low, or, being masked by other noise that was relatively loud. In the former case (very low site levels) it is not considered necessary to attempt to accurately quantify site NM noise as it would be significantly less than any criterion and most unlikely to cause annoyance (and in many cases, to be even noticed).

If site noise were NM due to masking then suitable methods must be employed as per the Industrial Noise Policy (e.g. measure closer and back calculate) to determine a value for assessment of compliance.

As indicated in the notes below Table 2 of the Rixs Creek North Project Approval:

Noise generated by the projects is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy.

The procedures and exemptions will include the assessment of modifying factors from Section 4 of the INP, where applicable. Years of monitoring have indicated that noise levels from mining operations, particularly those levels measured at significant distances from the source are relatively continuous. Given this, noise levels at the monitoring locations are unlikely to be intermittent or impulsive. However, tonality and low frequency are to be assessed by analysis of the measured LAeq and/or LCEq spectrum.

5.1.5 METEOROLOGICAL MONITORING

One on-site Automatic Weather Station (AWS) is currently located within each of the Rixs Creek South and Rixs Creek North mining lease areas. Each complies with AS2923-1987 Ambient Air – Guide for measurement of horizontal wind for air quality applications and the INP. These AWS provide representative weather data for the Mine including wind speed and direction, sigma theta, solar radiation, humidity, rainfall and temperature. Weather data will be used to determine the validity of noise monitoring results in accordance with the INP. Wind speed and rain data will be used for this purpose. Extreme temperature inversions will be considered G-class inversions, as determined by use of sigma theta and wind speed to categorise inversion strength, in accordance with Appendix E of the INP.

For the purpose of determining valid meteorological conditions for which noise criteria apply:

- The Rixs Creek South AWS will be used for assessment of Rixs Creek South; and
- The Rixs Creek North AWS will be used for assessment of Rix’s Creek North.

5.1.6 DATA TO BE COLLECTED

Data shall be collected in 15 minute periods and the Mine only LAeq result recorded. Low pass filtering will be used to remove extraneous noise such as insects when applicable. Other extraneous noise may be paused from the data set or excluded by other means. Statistical data must be one-third octave.

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Assessment of impact is to include consideration of mining activity and atmospheric conditions during each measurement. Wind speed and/or estimated temperature inversion conditions may result in regulatory criteria not being applicable in accordance with the INP.

The Mine only L_{Ceq} result should be collected simultaneously. Low pass filtering will be used to remove extraneous high spectrum noise when required

A low frequency noise penalty of 5 dB is to be added to the Mine only L_{Aeq} result when noise from the mine causes:

- The Mine only C weighted reading to exceed L_{Ceq} 65 dB during the day or evening periods; or
- The Mine only C weighted reading to exceed L_{Ceq} 60 dB during the night period.

The following information must be recorded during attended noise monitoring:

- Time and date;
- Location;
- Name of person carrying out the monitoring;
- Serial number of equipment used;
- Noted sources and noise levels, direction and frequency from source of interest;
- Duration of monitoring;
- Measured noise levels including L_{Aeq} , L_{Amax} , L_{Amin} , L_{A1} , L_{A10} , L_{A50} and L_{A90} , and
- Weather conditions including temperature, relative humidity, wind speed average, wind speed maximum, wind direction and estimated cloud cover.

5.1.7 RESULT ACCEPTANCE

A 15 minute measurement shall be taken and assessed against the applicable criterion. If the Mine only L_{Aeq} result is below the criterion, then the consultant will record it, note the site has passed and move on to the next monitoring location.

If the Mine only L_{Aeq} result exceeds the criterion, is attributable to the Mine, and taken in valid meteorological conditions, then the following steps are to be followed:

1. Consultant will record the reading, advise the Mine of the criterion exceedance and proceed to Step 2. The Mine will implement remedial action as required.
2. Within 75 minutes after the first measurement (and no earlier than 10pm) a second 15 minute measurement is to be made. If this second result exceeds the criterion then proceed to Step 3, otherwise proceed to Step 4.
3. If the result is attributable to the Mine and taken in valid meteorological conditions then proceed to Step 5.
4. The consultant will record the result, note the site has passed, schedule an additional monitoring test to be undertaken at the location within 1 week, and move on to the next monitoring location.
5. The consultant will record the result, note the site has failed and is deemed a '*noise affected night*' at that location. An additional monitoring test should be scheduled to be undertaken at the same location within 1 week, and move on to the next monitoring location.

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If the Mine only L_{Aeq} result exceeds the criterion, is attributable to the Mine, and taken in invalid meteorological conditions, the consultant will record it, advise the Mine a measurement has exceeded the criterion, and move on to the next monitoring location.

As detailed in Section 6.2.3 of this NMP, the OCE is to be advised of any potential noise exceedance detected during attended monitoring. The flow chart in Figure 6-5 details the attended monitoring exceedance procedure.

5.1.8 COMPLIANCE CRITERIA

Table 5-7 sets out night period noise compliance criteria. Rixs Creek North criteria are sourced from the Project Approval. Rixs Creek South $L_{Aeq,15\text{minute}}$ intrusive noise criteria are based on proposed criteria nominated in the EIS. $L_{A1,1\text{minute}}$ criteria are based on sleep disturbance criteria for the relevant NAG derived in the EIS.

$L_{Aeq,15\text{minute}}$ criteria are applicable for the day (07:00 to 18:00), evening (18:00 to 22:00) and night (22:00 to 07:00) periods. $L_{A1,1\text{minute}}$ criteria are applicable for the night period only.

Table 5-7 Compliance Criteria

NMP ID	EA Ref. (ICO/RCM) ¹	Rix's Creek North		Rixs Creek South	
		$L_{Aeq,15\text{minute}}$ dB	$L_{A1,1\text{minute}}$ dB	$L_{Aeq,15\text{minute}}$ dB	$L_{A1,1\text{minute}}$ dB
NM01	132/171	38	48	40	48
NM02	91/NA	40	47	40	47 ¹
NM03	47/NA	39	45	NA	NA
NM04	19/12	37	49	42	48
NM05	11/8	41	47	42	48
NM06	145/19	36	48	42	47
NM07	NA/61	NA	NA	40	45
NM08	NA/152	NA	NA	40	47
NM09	NA/121	NA	NA	40	47
NM10	NA/135	NA	NA	40	47

Notes: 1. Criterion set as for Rixs Creek North in the absence of data in the EIS; and

2. NA indicates criteria not applicable at that location, as it was not included in the relevant EA, EIS or Project Approval.

5.1.9 REPORTING

Attended monitoring reports should include a comparison to criteria detailed in the relevant project approval. All attended measurement result analysis should consider criteria applicability (for impact,

mitigation, cumulative and acquisition criteria) with regard to wind speed and vertical temperature gradient.

All results that exceed criteria, including instances where the second measurement indicates compliance with criteria, shall be reported to DP&E the following day along with actions taken to reduce the noise.

All monitoring that results in a night being deemed a '*noise affected night*' in accordance with Section 5.1.7 shall be reported to DP&E and the affected community as per the notification requirements.

5.1.10 EXCEEDANCE PROCEDURE

.Procedures to be followed in the event of a measured noise exceedance are outlined in Section 6.2.3

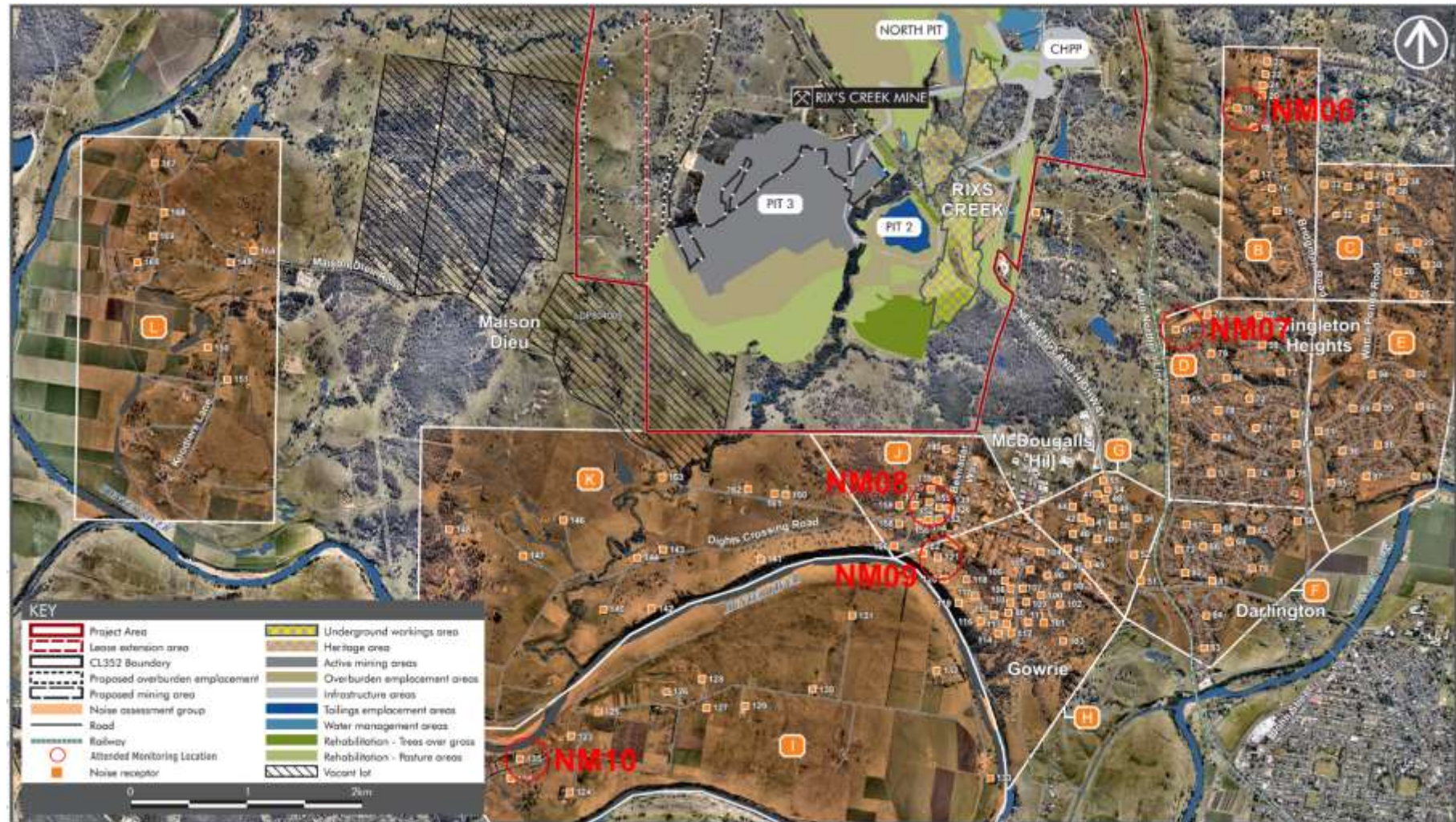
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Figure 5-1 Attended Monitoring Locations Relative to Rix's Creek South, North of Mine



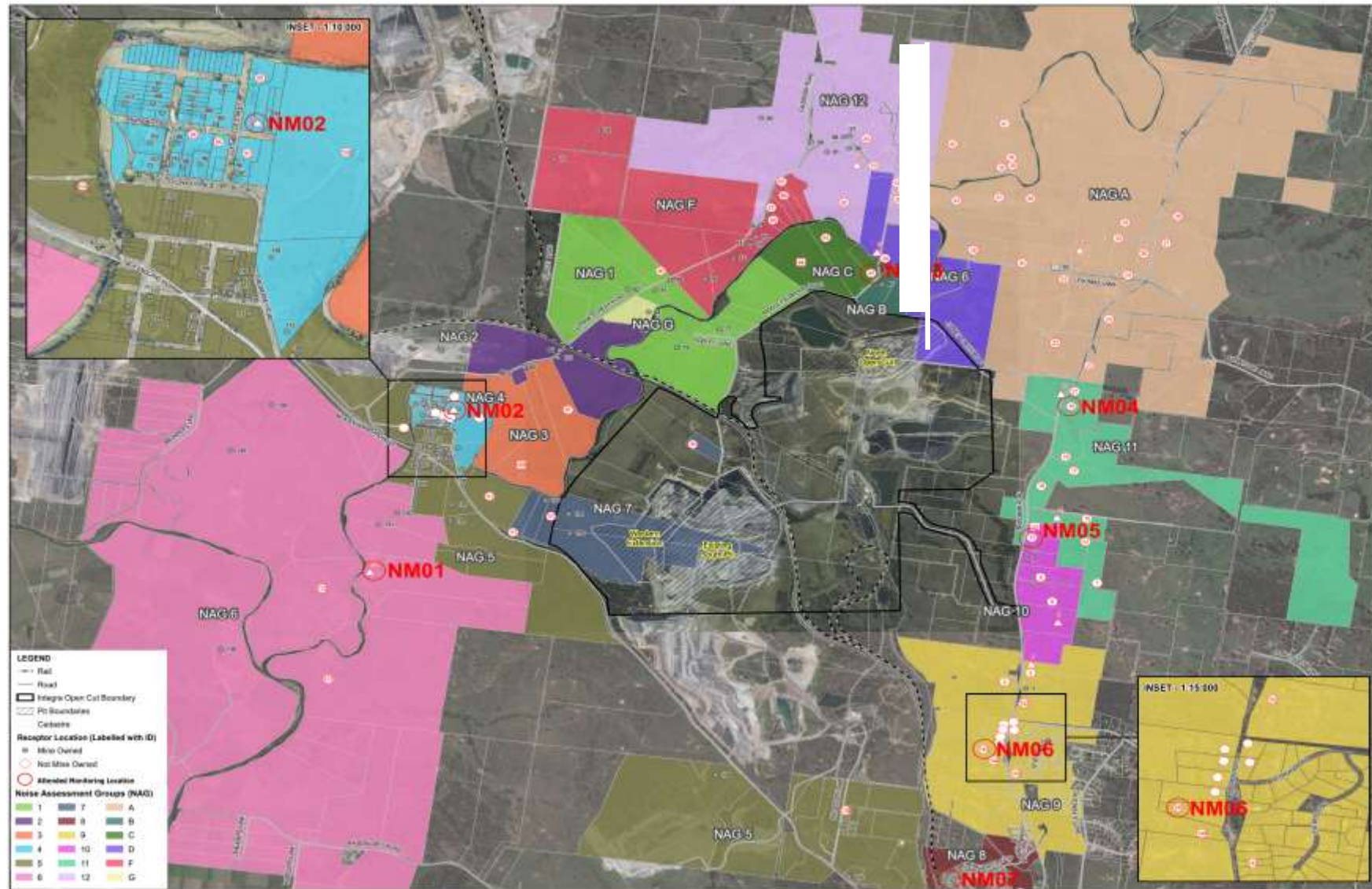
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Figure 5-2 Attended Monitoring Locations Relative to Rix's Creek South, South of Mine



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Figure 5-3 Attended Monitoring Locations Relative to Rix's Creek North



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6. Noise Management Measures

Measures to manage Mine noise emissions have been divided into those that aim to prevent incidents in the first place, i.e. preventative measures, and those that aim to minimise environmental impact in the event of a noise exceedance occurring. The latter are referred to as corrective measures.

6.1 Preventative Measures

The preventative measures which follow (Table 5-1) are required by the Rixs Creek NorthProject Approval. This table outlines the actions required, who is responsible for implementing them and when they are to be implemented. Explanatory notes are provided in Sections 6.1.1 to 6.1.6.

6.1.1 PREDICTIVE NOISE MODEL

A predictive noise model specific to the Mine will be maintained to proactively manage noise emission from the Mine through identification of areas of potential noise enhancement resulting from forecast meteorological conditions and proposed operations. Meteorological forecast data from the Hunter Valley Meteorological Sounding Group Joint Venture (HVMSGJV) will be used to develop half hourly predictions of noise enhancement conditions, for each twenty four hours of Mine production. The model will be based on the daily proposed mine working configuration, including specific operating locations of all acoustically significant plant items. Outputs from the model will provide sufficient detail regarding zones of noise enhancement that a strategic daily noise monitoring program can be developed, and daily operational planning to minimise potential for off-site noise impact can be undertaken. The degree of risk of noise compliance exceedance will be provided.

Responsibility: Mine Manager and Environmental Officer

Timing: Ongoing.

Validation of the model and of the effectiveness of that aspect of site noise control is to be conducted using attended monitoring data. As such, the annual validation will be an ongoing process that is reported annually.

Responsibility: Environmental Officer

Timing: Ongoing.

6.1.2 DAILY OPERATIONAL PLANNING

Daily operational planning will be used to minimise the likelihood of exceedance of compliance noise limits. Daily planning will include:

- Utilising the predictive noise model to plan daily operation (6 am to 6 am) and identify likelihood of noise non-compliance;
- Using results of the noise model to identify equipment operating locations posing risk. In the case of high risk, the proposed operating configuration will be modified ahead of time to reduce the risk to low or moderate. If initial risk is low or moderate, performance will be monitored by attended monitoring personnel, and operations will be modified if required;

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- Development of a daily plan for prioritising machine shut down sequence if noise enhancement is indicated and allocation of alternative (shielded) production areas within the daily mine plan;
- Develop a plan prioritising modifications to the operation such as decreasing the speed of haul trucks, aligning haul routes to maximise the available topographical shielding provided by the pit shell, restricting dozers to first gear, relocating or shutting down non-attenuated equipment, and operating rubber tyred equipment near surface in place of tracked equipment; and
- Communicating the daily operating plan to Shift Supervisors and other relevant personnel.

Responsibility: Mine Manager and Environmental Officer

Timing: Daily.

6.1.3 SOUND POWER CONTROL

Results of site operational noise modelling, undertaken as part of the Environmental Assessments are typically the basis of criteria specified in Project Approvals and EPL. A key input to that modelling is sound power of plant to be operated on site.

To ensure the highest likelihood of compliance with regulatory limits, it is important that plant sound power is regularly checked and, any non-compliant item is modified and/or repaired.

All mobile plant types that are significant noise generators have sound power limits specified in the document *Rix's Creek Mine Mobile Plant Sound Power Specification*. Listed plant types require:

- A sound power test on delivery and before acceptance for use on site (for both purchased and hire equipment); and
- A sound power test at least once every three years after entering service.

Equipment sound power levels are to be determined utilising testing undertaken in accordance with standards specified in the sound power specification or other appropriate standards, as applicable.

The environmental officers are to arrange testing as required to ensure the above requirements are met.

Responsibility: Environmental Officer

Timing: Ongoing.

It is also a requirement that “*the rail spur is only accessed by locomotives that are approved to operate on the NSW rail network*”. This requires proof from the train operators, in the form of a compliance report or similar document, for all locomotives sent to the loop. It should be acknowledged that RCM might not be in a position to obtain this if the train operator is not prepared to supply. As such, while every endeavour will be made to have the train operator comply, this condition is considered somewhat impractical and compliance cannot be guaranteed by RCM in the absence of train operator support.

Responsibility: Environmental Officer

Timing: Annually.

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Table 6-8 Preventative Measures

Program/Procedure Name	Measure	Responsibility	Reference
Predictive Noise Modelling and Daily Operational Planning	Review daily predictive modelling program outputs and refine the daily proposed mine working configuration, including specific operating locations of all acoustically significant plant items	Mine Manager and Environmental Officer	6.1.1 and 6.1.2
Attended Management Monitoring Program	Conduct attended noise monitoring to ensure off-site mining operational noise impacts do not exceed approved noise limit levels at surrounding receptors.	Senior Environmental Officer	4.1
Sound Power Screening Program	Control site noise emissions by initial and regular checks on mobile plant and rectification where needed.	Environmental Officer	6.1.3
Attended monitoring data review	Review attended monitoring data to identify activities and/or meteorological conditions that result in higher noise levels at receptor locations. Use review to refine noise mitigation measures and operating procedures.	Environmental Officer	6.1.4
Tree Clearing and Soil Stripping	Undertaken during day time operations only, where practical.	Shift Supervisor	6.1.5
Evening & Night Time Operational Restriction	Restrict mining operations, where practical, to areas that will minimise noise emissions beyond the Project boundary.	Shift Supervisor	6.1.6

6.1.4 REVIEW DATA FOR TRENDS

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

- ❑ Validation of actions undertaken;
- ❑ Providing/refining an empirical guide to operational controls required during a range of meteorological conditions; and
- ❑ Calibration of site noise models.

Data on spatial location of mobile plant, review of previous response triggers/exceedances and weather conditions can be utilised for developing an operational awareness of the effectiveness, in the context of noise management, of the shut-down of specific noise producing plant items.

The outcome of these data analyses should be communicated to Technical Services and Production and to any external contractors that may provide modelling services to site.

Responsibility: Environmental Officer

Timing: Quarterly.

6.1.5 TREE CLEARING AND SOIL STRIPPING

In order prevent operational noise from either tree clearing or soil stripping, this activity will only be undertaken during the day-time period, where practicable.

6.1.6 EVENING AND NIGHT TIME OPERATIONAL RESTRICTION

Wherever practicable, evening and night-time mining operations will be restricted to areas that support a minimisation of mine contributed noise at locations beyond the Mine boundary.

6.2 Corrective Measures

The following sections outline corrective measures to be implemented in response to noise issues. They are presented in Table 6-9, outlining the actions required, who is responsible for implementing them and when they are to be implemented. Explanatory notes are provided in Sections 6.2.1 to 6.2.1 6.2.4.

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Table 6-9 Corrective Measures

Timing/Trigger	Measure	Responsibility	Reference
Community complaint received	Determine mining noise levels and alter operations as required, inform Environmental Officer.	Shift Supervisor	6.2.1
Community complaint received	Undertake follow-up with complainant.	Senior Environmental Officer	6.2.1
Attended management monitoring exceedance measured	Monitoring personnel liaise with Shift Supervisor and operations are altered as required, Senior Environmental Officer informed.	Shift Supervisor	6.2.2
Attended compliance monitoring exceedance measured	Consultant liaises with Shift Supervisor and operations are altered as required, Senior Environmental Officer informed. Senior Environmental Officer to advise DP&E (if not subject to acquisition upon request or private agreement) and EPA (unless subject to private agreement).	Consultant/ Senior Environmental Officer	6.2.3
Noisy plant identified	Maintenance personnel, in consultation with the original equipment manufacturer (OEM) and/or noise consultant if required, undertake remedial action on plant	Maintenance	6.2.4

6.2.1 COMMUNITY COMPLAINT RECEIVED

In the event that a community complaint is received regarding current operations, the Shift Supervisor will record complaint on the Rix's Creek complaint/incident form, and instigate attended monitoring in accordance with Section 4.1. If noise levels are found to be greater than allowable, the Shift Supervisor is to alter operations until compliance is achieved in accordance with Section 6.2.2.

Shift supervisor will record complaint on the Rix's Creek complaint / incident form and contact Noise monitoring / compliance personnel to review noise near complainant's residence

All actions (and operational details - before and after changes) are to be logged and reported to the Environment Department.

Responsibility: Production

Timing: Each event.

In the event of a community complaint about previous operations, 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 most recent attended management monitoring.

Using the above data an assessment is to be made as to the validity of the noise complaint.

Responsibility: Senior Environmental Officer

Timing: Within 24 hours of the complaint, where practical.

As follow up to all community complaints, contact is to be made (or attempted) within 24 hours of the investigation to provide feedback to the complainant.

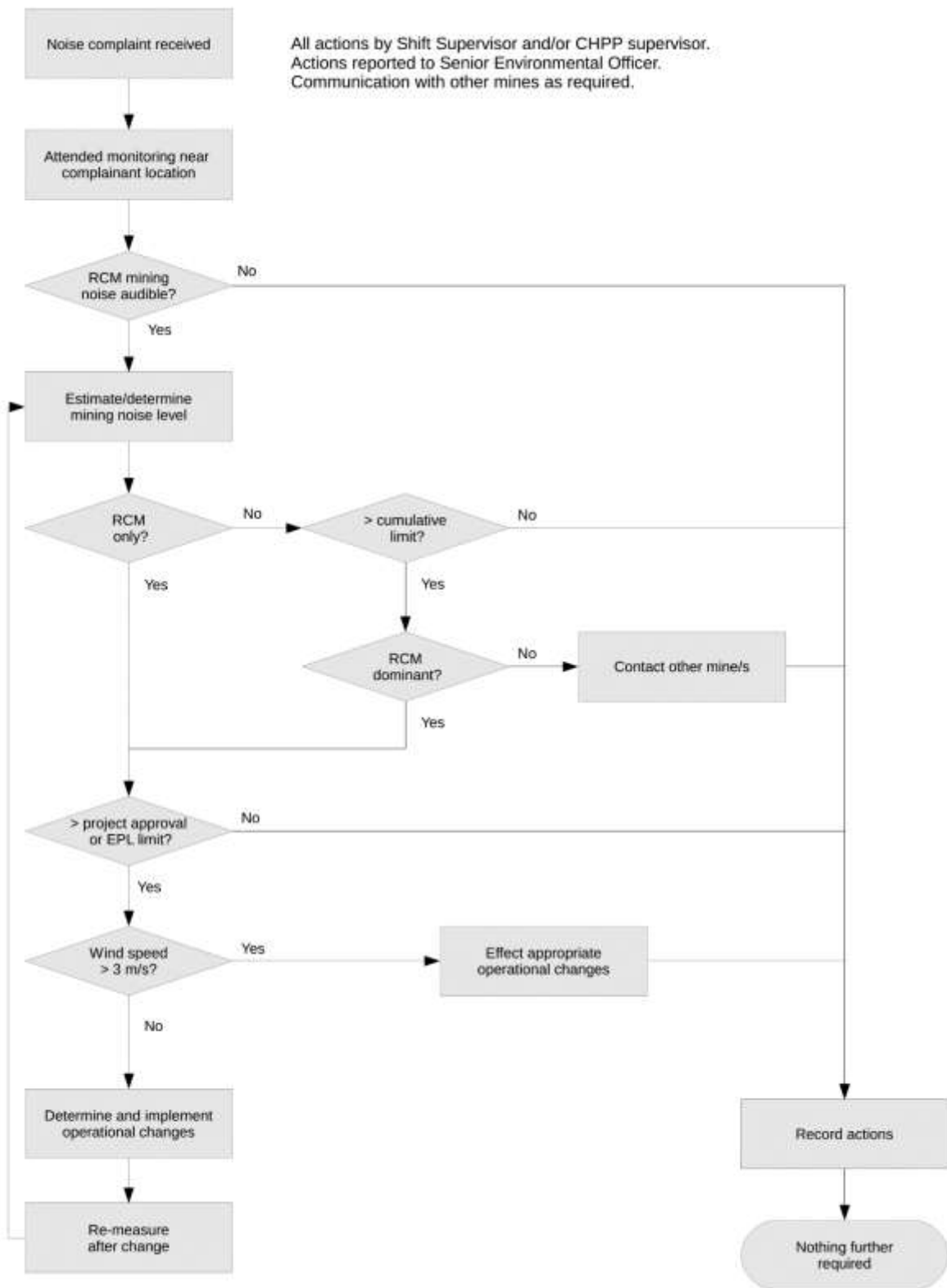
Responsibility: Senior Environmental Officer.

Timing: Within 24 hours of the investigation.

Further detail is included in Section 7.

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Figure 6-4 Community Complaint Response



6.2.2 ATTENDED MANAGEMENT MONITORING TRIGGER LEVEL MEASURED

Table 4-5 outlines a Trigger Action Response Plan (TARP), and includes actions and responses to be undertaken in response to noise complaints and noise levels measured during attended management monitoring that exceed trigger levels.

Table 6-10 outlines noise trigger response procedures. All actions (and operational details - before and after changes) are to be logged and reported to the Environment Department.

Responsibility: Production and Environment Department

Timing: Each event

Conditions 10 e) of Schedule 3 of the Rix's Creek North Project Approval requires 'a protocol that has been prepared in consultation with the owners of nearby mines (including the Ashton, Rix's Creek and Mt Owen mines) to minimise the cumulative noise impacts of these mines and the Integra mine complex'. Noise data sharing is technically possible, however, the commitment to facilitate this by other mines has not yet been achieved. A cumulative protocol will be implemented if and when possible. In the interim, if higher mine noise detected at monitoring locations is considered to be a consequence of the activities at another mine which can be identified, then Rix's Creek is to contact that site and inform them. This notification is to be reported to the Senior Environmental Officer.

Responsibility: Monitoring Personnel and Shift Supervisor

Timing: Each event

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Table 6-10 Noise Trigger Response Procedure

TRIGGER	RESPONSE
<p>Measured Mine only LAeq more than 2 dB below compliance levels.</p>	<ul style="list-style-type: none"> • Risk of non-compliance is low. • Attended monitoring will continue in accordance with the daily monitoring plan with no modification of operations required.
<p>Measured Mine only LAeq within 2 dB of compliance levels.</p>	<ul style="list-style-type: none"> • Check predictive noise model. • If neutral or no enhancement predicted re-monitor at an interval proportional to the risk. • If enhancement is predicted, re-monitor and commence noise minimisation plans. These can include some or all of the following, depending on the noise characteristics observed: <ul style="list-style-type: none"> ○ Dozers to be locked into first gear. ○ Dozers removed from exposed areas. ○ Rubber tyred dozers to be used in exposed areas. ○ Haul trucks to be speed limited. ○ Coal stockpile dozer to work on the western side of the stockpile (sheltered by the coal on the eastern side). Stockpile dozer to be locked in 1st gear when reversing to minimise track-slap. ○ Tracked equipment such as excavators, drills and dozers will not be 'walked' for long periods. • If re-monitoring results below trigger level continue current modified operations. • If re-monitoring noise levels have not decreased to below trigger level, implement additional noise reduction measures including alternative shielded dumps and production area, relocating equipment lower in the pit and/or shutting down equipment. Continue attended monitoring.
<p>Exceedance of noise compliance levels in relevant Project Approval</p>	<ul style="list-style-type: none"> • Shut-down the most exposed operation as per daily mine plan. Re-monitor noise levels. • If re-monitoring results are below compliance level and no enhancement predicted, then planned re-commencement of production operations can begin. This should include utilising shielded dump locations and should be coordinated in conjunction with attended off-site monitoring. • If re-monitoring results are below compliance level but enhancement indicated, transfer to alternative dump and/or production unit and plan re-commencement in conjunction with attended monitoring. Re-monitor. • If re-monitoring results remain above compliance levels, shut-down the next production unit from the daily mine plan noise priority list. Re-monitor. • If re-monitoring results still remain above compliance levels continue repeat previous step. • Once compliance is achieved, use the predictive noise model and weather station data to plan the appropriate time frame for staged re-commencement of production operations. This must utilise attended monitoring to ensure compliance with approved noise level limits.

6.2.3 ATTENDED COMPLIANCE MONITORING EXCEEDANCE MEASURED

Any exceedance of a noise criterion is to be acted upon immediately it is measured. The acoustic consultant undertaking attended monitoring is to contact the Mine to advice of the problem and discuss possible changes to operations that should lead to compliance. A remeasure is required to evaluate the effectiveness of any change implemented as outlined in Section 5.1.7, if the measurement was made in valid meteorological conditions. The Senior Environmental Officer and/or the Environmental Officer should also be advised of the exceedance.

Responsibility: Noise Monitoring Consultant

Timing: Each event

The Department of Planning & Environment (Singleton Compliance Branch) and/or the Environment Protection Authority is to be informed of any noise criterion exceedance.

Responsibility: Senior Environmental Officer or Environmental Officer

Timing: Each event

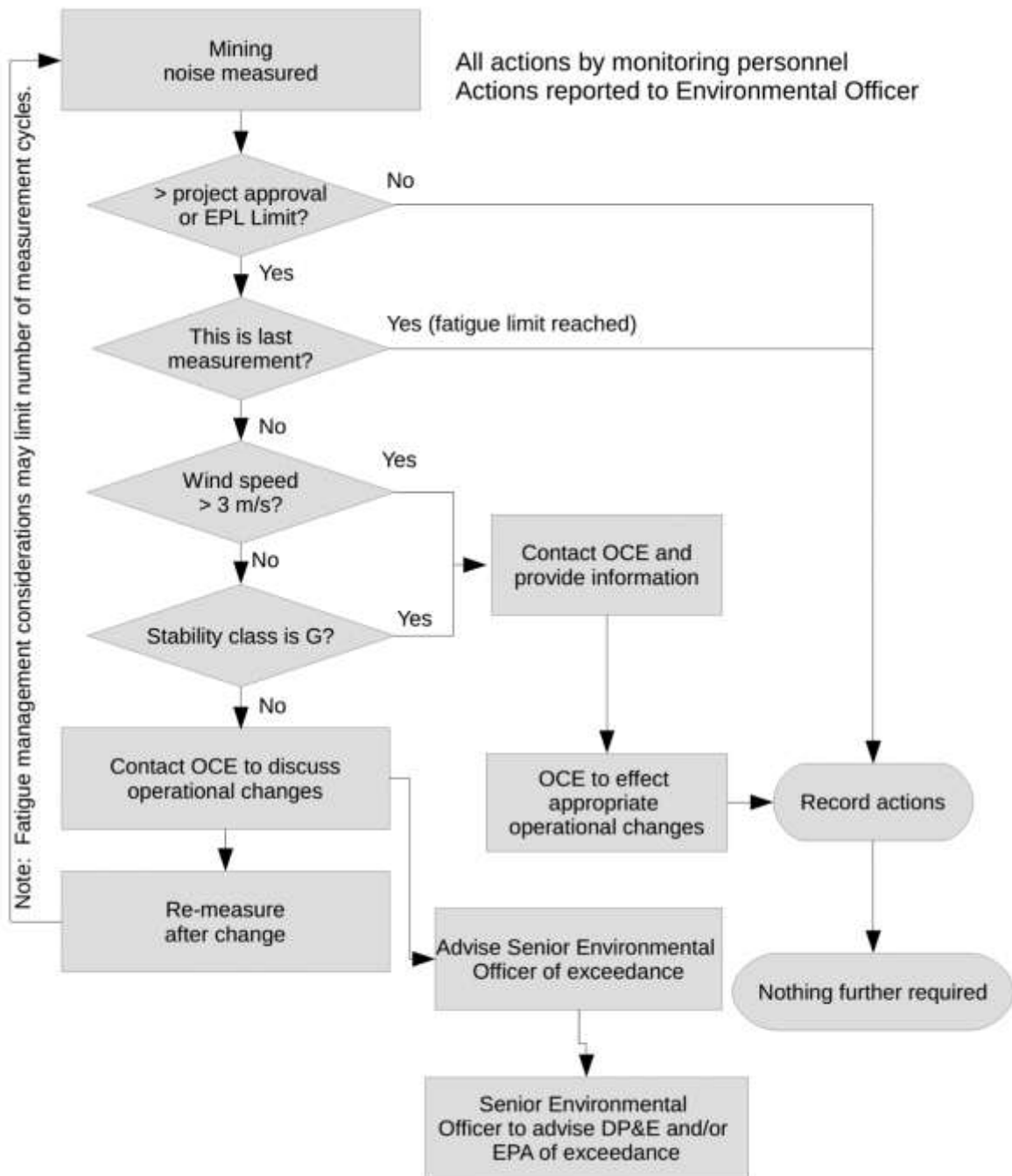
This Noise Management Plan is to be issued to any consultant conducting attended noise monitoring for the site so they understand all relevant procedures.

Responsibility: Environmental Officer

Timing: On commencement of contract and every time this document is updated.

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Figure 6-5 Attended Monitoring Exceedance Procedure



6.2.4 NOISY PLANT IDENTIFIED

Remediation of any plant items found to operate with sound powers more than 3 dB higher than specified in the Rix's Creek Mine Sound Power Specification will be undertaken. These items will need testing to ensure compliance with limits before being re-accepted for use on site.

Responsibility: Maintenance

Timing: As required

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7. Complaints Handling

Any complaint received relating to any noise issues will be managed in accordance with the Environmental Management Strategy. As a minimum, records of the complaint will include:

- Date and time the complaint was logged;
- Personal details provided by the complainant;
- Nature of the complaint;
- Action taken regarding the complaint, or if no action was taken, the reason why; and
- Follow up contact with the complainant.

It should be noted that response to complaints can include an Independent Review, as described in Conditions 3 to 5, Schedule 4 of the Rix's Creek North Project Approval (subject to DP&E direction) if requested by an owner of private land.

The outcomes of independent monitoring may be that:

- No further action is required of the Rix's Creek Mine,
- Noise mitigation measures are required at the residence; or
- The property should be acquired.

In accordance with Condition 6, Schedule 3 of the Rix's Creek North Project Approval, noise mitigation measures will be implemented at any residence listed in Tables 1 and 6, Schedule 3 of the Project Approval, if requested by an owner in writing to the Rix's Creek Mine. The cost of this may be borne entirely by the Rix's Creek Mine, or cumulatively, as described in Condition 7, Schedule 3 of the Project Approval.

Responsibility: Senior Environmental Officer

Timing: Each event

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8. Reporting and Review

8.1 Reporting

Attended noise monitoring results and interpretations will be reported internally monthly, and, externally annually in the Annual Report (AR) as required by the DP&E Integrated Mining Policy. This report will:

- Discuss general compliance with relevant consent and licence conditions;
- Provide a summary of actions taken in response to identified non-compliances with consent and licence conditions;
- Provide a summary of complaints and actions undertaken in response;
- Provide results of noise level trend analysis;
- Summarise actions taken to control mobile plant sound power;
- Summarise the impact and management of cumulative mining noise, including actions taken;
- Provide the results of analysis of the effectiveness or otherwise of proactive noise management;
- Provide details of trains that accessed the loop and if these complied with relevant conditions (where practical); and
- Identify opportunities for noise management system improvements.

A copy of the AR will be forwarded to relevant stakeholders including, but not limited to DP&E, EPA, NSW Office of Water, Singleton Council and community representatives of the Community Consultative Committee. The AR is also placed on the Rix's Creek Mine website.

Responsibility: Senior Environmental Officer

Timing: As above

A brief report on any noise exceedance measured during attended compliance monitoring (in valid meteorological conditions) will be provided to DP&E the following day. The report will indicate the nature of the exceedance, including measured levels and characteristics of Mine noise, as well as measures implemented to reduce noise.

Responsibility: Environmental Officer

Timing: Each event

A detailed report on any noise exceedance that results in a night being deemed a 'noise affected night' in accordance with Section 5.1.7 will be provided to the Director-General and any relevant agencies within seven days of occurrence.

Responsibility: Environmental Officer

Timing: Each event

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8.2 Plan Reviews

The review of this document will be in line with the Environmental Management Strategy for the Rix's Creek Mine. That is, reviews will be conducted every three years, after Independent Environmental Audits and as required by relevant Project Approval requirements. The purpose of the review is to ensure that the NMP remains suitable, adequate and effective.

The monitoring data will be reviewed as it is collected and at strategic milestones in the mine life, including Annual Review periods. The NMP will be modified as required to reflect significant changes to the mine plans or monitoring results as well as in response to stakeholder comments, where warranted. Any significant modifications will be made only after consultation with the DP&E.

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9. References

- **Integra Coal Complex MOD 2 Project Approval** (Department of Planning, February 2013)
- **Integra Mine Complex Environment Protection Licence EPL3390** (Office of Environment & Heritage, 2013)
- **Rix's Creek Mine Development Consent DA N90/00356** (Minister for Urban Affairs and Planning October 1995)
- **Integra Coal Operations North Pit EA** (R.W.Corkery & Co Pty Ltd, 2007)
- **Integra Coal Operations Western Extension EA** (URS, 2009)
- **NSW Industrial Noise Policy** (EPA, 2000)
- **Australian Standard 1055** (Standards Australia, 1997)
- **Mobile Plant Sound Power Specification** (Rix's Creek Mine)

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10. Glossary

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

LA10 - The noise level which is exceeded for 10 per cent of the time, which is approximately the average of the maximum noise levels.

LA90 - 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.

LAeq - The average noise energy during a measurement period.

Lpk - The unweighted peak noise level at any instant.

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

Sound power level (L_w) - 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.

Sound exposure level (SEL) - The A-weighted noise energy during a measurement period normalised to one second.

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

ABL - The 10th percentile background noise level for a single period (day, evening or night) of a 24 hour monitoring period.

RBL - The background noise level for a period (day, evening or night) determined from ABL data.

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Appendix A

Approval Conditions and EA Commitments – Where They Are Addressed in the NMP

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Table A1 Approval Conditions and EA Commitments – Where They Are Addressed in the NMP

Rixs Creek North Approval Condition	NMP Reference
Schedule 3	
<p>Noise Criteria</p> <p>2. Except for the noise-affected land referred to in Table 1, the Proponent shall ensure that the noise generated by the projects does not exceed the criteria in Table 2 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.</p>	Chapters 4 and 5.
<p>Noise Acquisition Criteria</p> <p>3. If noise generated by the project exceeds the criteria in Table 3 at any residence on privately-owned land or on more than 25 percent of any privately-owned land, then upon receiving a written request for acquisition from the landowner, the Proponent shall acquire the land in accordance with the procedures in Conditions 6 – 7 of Schedule 4.</p>	Chapter 4, 5 and 6.
<p>Cumulative Noise Criteria</p> <p>4. Except for the noise-affected land referred to in Table 1, the Proponent shall implement all reasonable and feasible measures to ensure that the noise generated by the projects combined with the noise generated by other mines in the area does not exceed the criteria in Table 4 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.</p>	Sections 4.1.5, 6.2.1 and 6.2.2
<p>Cumulative Noise Acquisition Criteria</p> <p>5. If the noise generated by the projects combined with the noise generated by other mines in the area exceeds the criteria in Table 5 at any residence on privately-owned land or on more than 25 percent of any privately-owned land, then upon receiving a written request for acquisition from the landowner, the Proponent shall acquire the land on an equitable basis as possible with the relevant mines in accordance with the procedures in Conditions 6 – 7 of Schedule 4.</p>	Sections 6.2.1 and 6.2.2 and Chapter 7
<p>Additional Noise Mitigation Measures</p> <p>6. The proponent shall implement additional noise mitigation measures at the residence (as detailed in Schedule 3, Condition 6 of the project approval) in consultation with the landowner.</p>	Chapter 7

Rixs Creek North Approval Condition	NMP Reference
<p>Cumulative Noise Mitigation Measures</p> <p>7. If the cumulative noise generated by the projects combined with the noise generated by other mines in the area exceeds the criteria at any residence on the land referred to in Table 8, then upon receiving a written request for acquisition from the owner, the Proponent shall implement additional noise mitigation measures at the residence in consultation with the landowner. The proponent shall share the costs associated with implementing these measures on as equitable basis as possible with the relevant mines.</p>	Chapter 7
<p>Rail Noise</p> <p>8. The Proponent shall seek to ensure that its rail spur is only accessed by locomotives that are approved to operate on the NSW rail network.</p>	Section 6.1.3
<p>Operating Conditions</p> <p>9. The Proponent shall:</p> <ul style="list-style-type: none"> (a) implement best practice noise management, including all reasonable and feasible noise mitigation measures to minimise the operational, low frequency, and rail noise generated by the projects; (b) regularly assess the real-time noise monitoring and meteorological forecasting data and relocate, modify, and/or site operations on site to ensure compliance with the relevant conditions of this approval; (c) maintain or improve the effectiveness of any attenuated plant on site; (d) ensure that noise attenuated plant is deployed preferentially in locations relevant to sensitive receivers; (e) minimise the noise impacts of the Integra mine complex during meteorological conditions when the noise limits in this approval do not apply; and (f) co-ordinate the noise management on site with the noise management at nearby mines (including the Ashton, Rix's Creek and Mt Owen mines) to minimise the cumulative noise impacts of these mines and Integra mine complex. 	<p>Chapter 6</p> <p>Chapter 2</p>

Rixs Creek North Approval Condition	NMP Reference
<p>Noise Management Plan</p> <p>10. The proponent shall prepare and implement a Noise Management Plan for the projects. This plan must:</p> <ul style="list-style-type: none"> (a) be prepared in consultation with OEHL, and submitted to the Director-General for approval by the end of May 2012; (b) describe the measures that would be implemented to ensure: <ul style="list-style-type: none"> • best management practice in being employed; • the noise impacts of the Integra mine complex are minimised during meteorological conditions when the noise limits in this approval do not apply; • compliance with the relevant conditions of this approval; (c) describe the proposed management system in detail; (d) include a monitoring program that: <ul style="list-style-type: none"> • uses a combination of real-time and supplementary attended monitoring measured to evaluate the performance of the Integra mine complex; • adequately supports the proactive and reactive noise management system on site; • includes a protocol for determining exceedances of the relevant conditions in this approval; • evaluates and reports on the effectiveness of the noise management system on site; • provides for the annual validation of the noise model for the Integra mine complex; and (e) include a protocol that has been prepared in consultation with the owners of nearby mines (including the Ashton, Rix's Creek and Mt Owen mines) to minimise the cumulative noise impacts of these mines and Integra mine complex. 	<p>This document</p>

Rixs Creek North Approval Condition	NMP Reference
Schedule 4	
<p>Notification of Landowners</p> <p>2. Within 2 weeks of obtaining monitoring results showing:</p> <p>(a) an exceedance of the relevant criteria in Schedule 3, the Proponent shall notify the affected landowner and/or tenants in writing of the exceedance, and provide regular monitoring results to each of these parties until the projects are complying with the relevant criteria again;</p> <p>(b) an exceedance of the relevant criteria in Conditions 6(c) or 7 of Schedule 3, the Proponent shall notify the applicable owner in writing that they are entitled to ask for additional noise mitigation to be installed at their residence;</p> <p>(c) an exceedance of the relevant criteria in Conditions 22, 23 of Schedule 3, the Proponent shall send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land); and:</p> <p>(d) an exceedance of the relevant criteria in Condition 24(c) of Schedule 3, the Proponent shall notify the applicable owner of any residences on the land that they are entitled to ask for additional air quality mitigation measures to be installed at their residence.</p>	<p>Chapter 3</p> <p>c) and d) are not relevant</p>
<p>Independent Review</p> <p>3. If an owner of privately-owned land considers the projects to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Director-General in writing for an independent review of the impact of the projects on his/her land.</p> <p>If the Director-General is satisfied that an independent review is warranted, then within 2 months of the Director-General's decision the Proponent shall:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to:</p> <ul style="list-style-type: none"> - consult with the landowner to determine his/her concerns; - conduct monitoring to determine whether the projects are complying with the relevant criteria in Schedule 3; and - if the projects are not complying with these criteria then: <ul style="list-style-type: none"> - determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine towards the impact on the land; - identify the measures that could be implemented to ensure compliance with the relevant criteria; and <p>(b) give the Director-General and landowner a copy of the independent review.</p>	<p>Chapter 7</p>

Rixs Creek North Approval Condition	NMP Reference
<p>4. If the independent review determines that the projects are complying with the relevant criteria in Schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.</p> <p>If the independent review determines that the projects are not complying with the relevant criteria in Schedule 3, and that the projects are primarily responsible for this non-compliance, then the Proponent shall:</p> <p>(a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent person, and conduct further monitoring until there is compliance with the relevant criteria; or</p> <p>(b) secure a written agreement with the landowner to allow the exceedances of the relevant criteria, to the satisfaction of the Director-General.</p> <p>If the independent review determines that the projects are not complying with the relevant acquisition criteria in Schedule 3, and that the projects are primarily responsible for this non-compliance, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner's land in accordance with the procedures in Conditions 6-7 below.</p> <p>5. If the independent review determines that the relevant criteria in Schedule 3 are being exceeded, but that more than one mine is responsible for this exceedance, then together with the relevant mine/s the Proponent shall:</p> <p>(a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent person, and conduct further monitoring until there is compliance with the relevant criteria; or</p> <p>(b) secure a written agreement with the landowner to allow exceedances of the relevant criteria, to the satisfaction of the Director-General.</p> <p>If the independent review determines that relevant acquisition criteria in Schedule 3 are being exceeded, but that more than one mine is responsible for the exceedance, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner's land on as equitable a basis as possible with the relevant mine/s in accordance with the procedures in Conditions 6-7 below.</p>	Chapter 7
Rixs Creek North Approval Condition	NMP Reference
Schedule 5	
<p>Management Plan Requirements</p> <p>2. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines. And include:</p> <p>(a) detailed baseline data;</p> <p>(b) a description of:</p>	<p>This document.</p> <p>a) is not relevant</p>

<ul style="list-style-type: none"> • the relevant statutory requirements (including any relevant approval, licence or lease condition); • any relevant limits or performance measures/criteria; and • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the projects or any management measures; <p>(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</p> <p>(d) a program to monitor and report on the:</p> <ul style="list-style-type: none"> • impacts and environmental performance of the projects; and • effectiveness of any management measures (see (c) above); <p>(e) a contingency plan to manage any unpredicted impacts and their consequences;</p> <p>(f) a program to investigate and implement ways to improve the environmental performance of the projects over time;</p> <p>(g) a protocol for managing and reporting any:</p> <ul style="list-style-type: none"> • incidents; • complaints; • non-compliances with the conditions of this approval and statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and <p>(h) a protocol for periodic review of the plan.</p> <p><i>Note: The Director-General may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</i></p>	
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Rixs Creek North Approval Condition	NMP Reference
<p>Revision of Strategies, Plans & Programs</p> <p>4. Within 3 months of the submission of an annual review, incident report, audit report or any modification of the conditions of this approval, the Proponent shall review, and if necessary revise, the strategies, plans and programs requires under this approval.</p> <p><i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the projects.</i></p>	Section 8.2
<p>Incident Reporting</p> <p>6. The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the projects as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide to the Director-General and any relevant agencies with a detailed report on the incident.</p>	Section 8.1
Rixs Creek North EA Commitment	NMP Reference
G1. Use noise mitigated mobile equipment to achieve the predicted noise emission levels at the identified receptors.	Section 6.1.3
G2. Restrict evening and night-time mining operations, where practicable, to areas that minimise emission levels outside of the Project boundary.	Section 6.1.6
G3. Undertake development activities such as tree clearing and soil stripping during day time operations only, where practicable.	Section 6.1.5
G4. Refine on-site noise mitigation measures and operating procedures, i.e. based upon monitoring results.	Section 6.1.2 and 6.1.4
G5. Initiate regular discussions with potentially affected residents to proactively identify noise-related issues of concern.	Chapter 3 and community consultation program ie. CCC
G6. Consider acoustic mitigation at residences where exceedances of the project specific criteria are substantiated by monitoring.	Chapter 7
G7. Consider negotiated agreements with landowners where exceedances of the project specific criteria are substantiated by monitoring.	Chapter 7

Rixs Creek South EA Commitment	NMP Reference
Various levels will be provided for overburden emplacement to allow shielded emplacement to occur deeper in the pit during adverse meteorological conditions.	Section 2.2.1 and 6.1.2
Haul route alignments within the pit will maximise the available topographical shielding provided by the pit shell.	Section 2.2.1 and 6.1.2
For the maximum production rate scenario (2023), alternate overburden emplacement areas will be developed, to the north and south of the pit to allow overburden emplacement upwind of receptors.	Section 2.2.1
All blast hole drills will be attenuated.	Section 6.1.3
The proportion of attenuated mobile equipment will be in accordance with the RCM fleet replacement forecast summary.	Section 6.1.3 and EIS
Dozers will be restricted to 1st gear operation during adverse meteorological conditions.	Section 2.2.1 and 6.1.2
A 4.5 metre high earth bund will be constructed to reduce noise emission to the south of the coal haul route.	Section 2.2.1 and 6.1.2
A 6 metre high acoustic barrier will be constructed adjacent the ROM bin.	Section 2.2.2
An earth barrier is retained to the east side of the ROM pad.	Section 2.2.2
The south and east facades of the CPP will be attenuated (sheeted).	Section 2.2.2
Separate day and night operating configurations will be developed (scaled down or modified operations for the night period).	Section 2.2.1 and 6.1.2
A predictive noise model for the mine will be updated daily. Meteorological forecasts for the RCM site will be used to develop predictions of noise enhancement conditions.	Section 6.1.1
Noise model predictions will be used at daily production meetings to plan evening and night time operations.	Section 6.1.2
Modifications to operating configurations will be planned to minimise potential off-site noise impacts if elevated noise levels are predicted.	Section 6.1.2
Competent and trained site personnel will undertake attended noise monitoring during the night period, with priority given to receptor areas for which elevated noise predictions were provided (if any).	Section 4.1
If noise levels exceeding a trigger level criterion are measured, operations at the site will be modified to reduce noise emission. Modifications include plant being relocated within the pit to operate in areas that provide a high degree of topographical	Section 4.1 and 6.2

shielding, and/or, equipment is progressively shut down, starting with plant operating in the most exposed areas.	
Follow up attended monitoring will be undertaken to determine the effectiveness of modifications implemented.	Section 4.1 and 6.2
Measurements and actions are documented.	Section 4.1

Appendix B

Consent Noise Conditions

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SCHEDULE 3 ENVIRONMENTAL PERFORMANCE CONDITIONS

ACQUISITION UPON REQUEST

- Upon receiving a written request for acquisition from the owner of the land listed in Table 1, the Proponent shall acquire the land in accordance with the procedures in Conditions 6-7 of Schedule 4.

Table 1: Land subject to acquisition upon request

Noise	Air Quality	Subsidence
9 – W & N Pendered	-	-
11 – F Ferraro	-	-
10 – E & B Kleinman	-	-
13 – P & K Russell	-	-
64 – W & A Gardner	-	-
-	47 – B & R Cherry	47 B & R Cherry
80 – G Donnellan	-	-
87 – B & R Richards	87 – B & R Richards	-
106 – B & R Richards	-	-
110 – G J Hall	110 – G J Hall	-
111 – T Burgess	-	-
112 – S & C Ernst	-	-
153 – R & D Hall	153 – R & D Hall	-
351 – Andrews	-	-
352 – Andrews	-	-

Note: To identify the locations referred to in Table 1, see the figures in Appendix 5.

Once, in the opinion of the Director-General, the open cut mining operations have been substantially completed on site this condition shall be replaced with Condition 1 of Appendix 6.

NOISE

Noise Criteria

- Except for the noise-affected land referred to in Table 1, the Proponent shall ensure that the noise generated by the projects does not exceed the criteria in Table 2 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.

Table 2: Noise criteria dB(A)

Location		Day	Evening	Night	
		$L_{Aeq}(15min)$	$L_{Aeq}(15min)$	$L_{Aeq}(15min)$	$L_{A\%}(1min)$
NAG 1	All privately-owned land	38	38	36	46
NAG 2	All privately-owned land	39	39	37	47
NAG 3	All privately-owned land	40	40	39	49
NAG 4	99, 100	39	39	39	47
	88, 91, 95	40	40	40	47
	105, 161	41	41	41	47
	All other privately-owned land	42	42	37	47
NAG 5	104	35	35	35	52
	139	36	36	36	52
	103	37	37	37	52
	121	40	40	40	52
	118, 154	43	43	43	52
	Deleted	45	45	45	52

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	Deleted	47	47	47	52
	All other privately-owned land	50	46	42	52
NAG 6	137	35	35	35	48
	133	37	37	37	48
	132	38	38	38	48
	All other privately-owned land	41	41	38	48
NAG 7	All privately-owned land	45	42	39	49
NAG 8	142	35	35	35	45
	All other privately-owned land	42	42	35	45
NAG 9	146, 148, 149	35	35	35	48
	143, 144, 145, 147, 150, 151, 152	36	36	36	48
	2	37	37	37	48
	3, 4	39	39	39	48
	All other privately-owned land	40	40	38	48
NAG 10	5	40	40	40	47
	6, 11	41	41	41	47
	8	42	42	42	47
	All other privately-owned land	39	39	37	47
NAG 11	18	35	35	35	49
	20, 21	37	37	36	49
	19	37	37	37	49
	17	38	38	38	49
	7	39	39	39	49
	12, 15	40	40	40	49
	14, 16	42	42	42	49
	All other privately-owned land	41	41	39	49
NAG 12	52, 55	35	35	35	45
	51, 56	37	37	37	45
	53, 57	38	38	38	45
	50, 54	39	39	39	45
	62	40	40	40	45
	All other privately-owned land	38	38	35	45
NAG A	24, 25, 26, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41	35	35	35	46
	31	36	36	35	46
	42, 43	36	36	36	46
	32	37	37	35	46
	22, 23	37	37	37	46
	34	39	39	36	46
	35	39	39	35	46
	All other privately-owned land	39	39	36	46
NAG B	All privately-owned land	37	37	35	45
NAG C	47	39	39	39	45
	63	40	40	40	45
	All other privately-owned land	37	37	35	45
NAG D	44, 48	36	36	36	48
	49	39	39	39	48
	All other privately-owned land	40	40	38	48
NAG F	65, 66	39	39	39	50
	67	40	40	40	50
	68	42	42	42	50
	All other privately-owned land	40	40	40	50

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NAG G	All privately-owned land	41	41	39	50
	All other privately-owned land	35	35	35	45

Notes:

- To identify the locations referred to in Table 2, see the figures in Appendix 5; and
- Noise generated by the projects is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy.

However, these criteria do not apply if the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.

Once, in the opinion of the Director-General, the open cut mining operations have been substantially completed on site this condition shall be replaced with Condition 2 of Appendix 6.

Noise Acquisition Criteria

- If noise generated by the projects exceeds the criteria in Table 3 at any residence on privately-owned land or on more than 25 percent of any privately-owned land, then upon receiving a written request for acquisition from the landowner, the Proponent shall acquire the land in accordance with the procedures in Conditions 6-7 of Schedule 4.

Table 3: Noise Acquisition Criteria dB(A)

Location	Day	Evening	Night
	$L_{Aeq}(15min)$	$L_{Aeq}(15min)$	$L_{Aeq}(15min)$
All privately-owned land in NAG 1	44	44	42
All privately-owned land in NAG 2	45	45	43
All privately-owned land in NAG 3	46	46	45
All privately-owned land in NAG 4	48	48	43
All privately-owned land in NAG 5	56	52	48
All privately-owned land in NAG 6	47	47	44
All privately-owned land in NAG 7	51	48	45
All privately-owned land in NAG 8	48	48	41
All privately-owned land in NAG 9	46	46	44
All privately-owned land in NAG 10	45	45	43
All privately-owned land in NAG 11	47	47	45
All privately-owned land in NAG 12	44	44	41
All privately-owned land in NAG A	45	45	42
All privately-owned land in NAG B	43	43	41
All privately-owned land in NAG C	43	43	41
All privately-owned land in NAG D	46	46	44
All privately-owned land in NAG F	46	46	46
All privately-owned land in NAG G	47	47	45
All other privately-owned land	41	41	41

Notes:

- To identify the locations referred to in Table 3, see the figures in Appendix 5;
- Noise generated by the projects is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy; and
- For this condition to apply, the exceedances of the criteria must be systemic.

Cumulative Noise Criteria

- Except for the noise-affected land referred to in Table 1, the Proponent shall implement all reasonable and feasible measures to ensure that the noise generated by the projects combined with the noise generated by other mines in the area does not exceed the criteria in Table 4 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.

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Table 4: Cumulative Noise Criteria dB(A) L_{Aeq} (period)

Location	Day	Evening	Night
NAGs 4, 5, 8 and 9	55	45	40
All other privately-owned land	50	45	40

Notes:

- To identify the locations referred to in Table 4, see the figures in Appendix 5; and
- Cumulative noise is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.

Cumulative Noise Acquisition Criteria

- If the noise generated by the projects combined with the noise generated by other mines in the area exceeds the criteria in Table 5 at any residence on privately-owned land or on more than 25 percent of privately-owned land, then upon receiving a written request for acquisition from the landowner, the Proponent shall acquire the land on as equitable basis as possible with the relevant mines in accordance with the procedures in Conditions 6-7 of Schedule 4.

Table 5: Cumulative Noise Acquisition Criteria dB(A) L_{Aeq} (period)

Location	Day	Evening	Night
NAGs 4, 5, 8 and 9	60	50	45
All other privately-owned land	55	50	45

Notes:

- To identify the locations referred to in Table 5, see the applicable figures in Appendix 5;
- Cumulative noise is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy; and
- For these conditions to apply, the exceedances of the criteria must be systemic.

Additional Noise Mitigation Measures

- Upon receiving a written request from the owner of any residence:
 - on the land listed in Table 1; or
 - on land listed in Table 6; or
 - on privately-owned land where subsequent noise monitoring shows the noise generated by the projects is greater than or equal to the criteria in Table 7,
 the Proponent shall implement additional noise mitigation measures (such as double-glazing, insulation, and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible.

If within 3 months of receiving this request from the owner, the Proponent and the owner 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 Director-General for resolution.

Once, in the opinion of the Director-General, the open cut mining operations have been substantially completed on site Table 6 in this condition shall be replaced with the Table in Condition 3 of Appendix 6.

Table 6: Land where additional noise mitigation measures are available on request

5 – D P Cox	6 – W G Cox
8 – DK Geelan	
14 – M Hoggan	16 – A Lambkin
20 – Mr Garvie	31 – C Craven
32 – M Langdon	48 – G Cheetham
47 – B & R Cherry	50 – D & M Bridge
53 – K & J Badior	54 – G Holmes
62 – D Moran	63 – J & M Moore
91 – T & D Olofsson	95 – J & T Clarke
105 – J & G McInerney	161 – V Lopes
Deleted	Deleted

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Note: To identify the locations referred to in Table 6, see the figures in Appendix 5.

Table 7: Additional noise mitigation criteria dB(A)

Location	Day	Evening	Night
	$L_{Aeq}(15min)$	$L_{Aeq}(15min)$	$L_{Aeq}(15min)$
All privately-owned land in NAG 1	41	41	39
All privately-owned land in NAG 2	42	42	40
All privately-owned land in NAG 3	43	43	42
All privately-owned land in NAG 4	45	45	40
All privately-owned land in NAG 5	53	49	45
All privately-owned land in NAG 6	44	44	41
All privately-owned land in NAG 7	48	45	42
All privately-owned land in NAG 8	45	45	38
All privately-owned land in NAG 9	43	43	41
All privately-owned land in NAG 10	42	42	40
All privately-owned land in NAG 11	44	44	42
All privately-owned land in NAG 12	41	41	38
All privately-owned land in NAG A	42	42	39
All privately-owned land in NAG B	40	40	38
All privately-owned land in NAG C	40	40	38
All privately-owned land in NAG D	43	43	41
All privately-owned land in NAG F	43	43	43
All privately-owned land in NAG G	44	44	42
All other privately-owned land	38	38	38

Notes:

- To identify the locations referred to in Table 7, see the figures in Appendix 5;
- Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy; and
- For these conditions to apply, the exceedances of the criteria must be systemic.

- If the cumulative noise generated by the projects combined with the noise generated by other mines in the area exceeds the criteria at any residence on the land referred to in Table 8, then upon receiving a written request from the owner, the Proponent shall implement additional noise mitigation measures (such as double-glazing, insulation, and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible. The Proponent shall share the costs associated with implementing these measures on an equitable basis as possible with the relevant mines.

If within 3 months of receiving this request from the owner, the Proponent and the owner 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 Director-General for resolution.

Table 8: Cumulative Noise Mitigation Criteria dB(A) L_{Aeq} (period)

Location	Day	Evening	Night
NAGs 4, 5, 8 and 9	57	47	42
All other privately owned land	52	47	42

Notes:

- To identify the locations referred to in Table 8, see the figures in Appendix 5;
- Cumulative noise is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy; and
- For these conditions to apply, the exceedances of the criteria must be systemic.

Rail Noise

- The Proponent shall seek to ensure that its rail spur is only accessed by locomotives that are approved to operate on the NSW rail network in accordance with noise limits L6.1 to L6.4 in RailCorp's EPL (No.

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12208) and ARTC's EPL (No. 3142) or a Pollution Control Approval issued under the former *Pollution Control Act 1970*.

Operating Conditions

9. The Proponent shall:
- (a) implement best practice noise management, including all reasonable and feasible noise mitigation measures to minimise the operational, low frequency, and rail noise generated by the projects;
 - (b) regularly assess the real-time noise monitoring and meteorological forecasting data and relocate, modify, and/or stop operations on site to ensure compliance with the relevant conditions of this approval;
 - (c) maintain or improve the effectiveness of noise suppression equipment on plant at all times and ensure defective plant is not used operationally until fully repaired;
 - (d) ensure that noise attenuated plant is deployed preferentially in locations relevant to sensitive receivers;
 - (e) minimise the noise impacts of the Integra mine complex during meteorological conditions when the noise limits in this approval do not apply; and
 - (f) co-ordinate the noise management on site with the noise management at nearby mines (including the Ashton, Rix's Creek and Mt Owen mines) to minimise the cumulative noise impacts of these mines and the Integra mine complex to the satisfaction of the Director-General.

Noise Management Plan

10. The Proponent shall prepare and implement a Noise Management Plan for the projects to the satisfaction of the Director-General. This plan must:
- (a) be prepared in consultation with OEH, and submitted to the Director-General for approval by the end of May 2012;
 - (b) describe the measures that would be implemented to ensure:
 - best management practice is being employed;
 - the noise impacts of the Integra mine complex 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 management system in detail;
 - (d) include a monitoring program that:
 - uses a combination of real-time and supplementary attended monitoring measures to evaluate the performance of the Integra mine complex;
 - adequately supports the proactive and reactive noise management system on site;
 - includes a protocol for determining exceedances of the relevant conditions in this approval;
 - evaluates and reports on the effectiveness of the noise management system on site;
 - provides for the annual validation of the noise model for the Integra mine complex; and
 - (e) include a protocol that has been prepared in consultation with the owners of nearby mines (including the Ashton, Rix's Creek and Mt Owen mines) to minimise the cumulative noise impacts of these mines and the Integra mine complex.

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SCHEDULE 4 ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. By the end of December 2010, the Proponent shall:
 - (a) notify in writing the owners of:
 - the land listed in Table 1 of Schedule 3 that they have the right to require the Proponent to acquire their land at certain stages during the projects;
 - any residence on the land listed in Table 1 (noise-affected) or Table 6 of Schedule 3 that they are entitled to ask for additional noise mitigation to be installed at their residence at certain stages during the projects;
 - any residence on the land listed in Table 1 (air quality-affected) or Table 16 of Schedule 3 that they are entitled to ask for additional air quality mitigation measures to be installed at their residence at certain stages of the projects; and
 - any privately-owned land within 2 kilometres of any approved open cut mining pit on site that they are entitled to ask for an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous property inspection report updated; and
 - (b) send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the owners and/or existing tenants of any land (including mine-owned land) where the predictions in the open cut or underground project EAs identify that the dust emissions from the projects are likely to be greater than the relevant air quality criteria in Schedule 3 at some stage during the projects.
2. Within 2 weeks of obtaining monitoring results showing:
 - (a) an exceedance of the relevant criteria in Schedule 3, the Proponent shall notify the affected landowner and/or tenants in writing of the exceedance, and provide regular monitoring results to each of these parties until the projects are complying with the relevant criteria again;
 - (b) an exceedance of the relevant criteria in Conditions 6(c) or 7 of Schedule 3, the Proponent shall notify the applicable owner in writing that they are entitled to ask for additional noise mitigation to be installed at their residence;
 - (c) an exceedance of the relevant criteria in Conditions 22, 23 of Schedule 3, the Proponent shall send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land); and
 - (d) an exceedance of the relevant criteria in Condition 24(c) of Schedule 3, the Proponent shall notify the applicable owner of any residences on the land that they are entitled to ask for additional air quality mitigation measures to be installed at their residence.

INDEPENDENT REVIEW

3. If an owner of privately-owned land considers the projects to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Director-General in writing for an independent review of the impact of the projects on his/her land.

If the Director-General is satisfied that an independent review is warranted, then within 2 months of the Director-General's decision the Proponent shall:
 - (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to:
 - consult with the landowner to determine his/her concerns;
 - conduct monitoring to determine whether the projects are complying with the relevant criteria in Schedule 3; and
 - if the projects are not complying with these criteria then:
 - determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine towards the impact on the land;
 - identify the measures that could be implemented to ensure compliance with the relevant criteria; and
 - (b) give the Director-General and landowner a copy of the independent review.
4. If the independent review determines that the projects are complying with the relevant criteria in Schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.

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If the independent review determines that the projects are not complying with the relevant criteria in Schedule 3, and that the projects are primarily responsible for this non-compliance, then the Proponent shall:

- (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent person, and conduct further monitoring until there is compliance with the relevant criteria; or
- (b) secure a written agreement with the landowner to allow the exceedances of the relevant criteria, to the satisfaction of the Director-General.

If the independent review determines that the projects are not complying with the relevant acquisition criteria in Schedule 3, and that the projects are primarily responsible for this non-compliance, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner's land in accordance with the procedures in Conditions 6-7 below.

5. If the independent review determines that the relevant criteria in Schedule 3 are being exceeded, but that more than one mine is responsible for this exceedance, then together with the relevant mine/s the Proponent shall:

- (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent person, and conduct further monitoring until there is compliance with the relevant criteria; or
- (b) secure a written agreement with the landowner to allow exceedances of the relevant criteria, to the satisfaction of the Director-General.

If the independent review determines that relevant acquisition criteria in Schedule 3 are being exceeded, but that more than one mine is responsible for the exceedance, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner's land on as equitable a basis as possible with the relevant mine/s in accordance with the procedures in Conditions 6-7 below.

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**SCHEDULE 5
ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING**

ENVIRONMENTAL MANAGEMENT

approval.

Management Plan Requirements

2. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
 - (a) detailed baseline data;
 - (b) a description of:
 - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
 - any relevant limits or performance measures/criteria; and
 - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the projects or any management measures;
 - (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
 - (d) a program to monitor and report on the:
 - impacts and environmental performance of the projects; and
 - effectiveness of any management measures (see (c) above);
 - (e) a contingency plan to manage any unpredicted impacts and their consequences;
 - (f) a program to investigate and implement ways to improve the environmental performance of the projects over time;
 - (g) a protocol for managing and reporting any:
 - incidents;
 - complaints;
 - non-compliances with the conditions of this approval and statutory requirements; and
 - exceedances of the impact assessment criteria and/or performance criteria; and
 - (h) a protocol for periodic review of the plan.

Note: The Director-General may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.

Revision of Strategies, Plans & Programs

4. Within 3 months of:
 - (a) the submission of an annual review under Condition 3 above;
 - (b) the submission of an incident report under Condition 6 below;
 - (c) the submission of an audit report under Condition 8 below, or
 - (d) any modification of the conditions of this approval (unless the conditions require otherwise),
 the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the projects.

REPORTING

Incident Reporting

6. The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the projects as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.

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Appendix C

Licence Noise Conditions

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L3 Noise limits

L3.1 Noise from the premises must not exceed the limits specified in the table below:

Location	Day - LAeq(15 minute)	Evening - LAeq(15 minute)	Night - LAeq(15 minute)	Night - LA1(1 minute)
NAG 1 - All privately owned land	38	38	36	46
NAG 2 - All privately owned land	39	39	37	47
NAG 3 - All privately owned land	40	40	39	49
NAG 4 - 99, 100	39	39	39	47
NAG 4 - 88, 91, 95	40	40	40	47
NAG 4 - 105, 161	41	41	41	47
NAG 4 - All other privately owned land	42	42	37	47
NAG 5 - 104	35	35	35	52
NAG 5 - 139	36	36	36	52
NAG 5 - 103	37	37	37	52
NAG 5 - 121	40	40	40	52
NAG 5 - 118, 154	43	43	43	52
NAG 5 - All other privately owned land	50	46	42	52
NAG 6 - 137	35	35	35	48
NAG 6 - 133	37	37	37	48

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NAG 6 - 132	38	38	38	48
NAG 6 - All other privately owned land	41	41	38	48
NAG 7 - All privately owned land	45	42	39	49
NAG 8 - 142	35	35	35	45
NAG 8 - All other privately owned land	42	42	35	45
NAG 9 - 146, 148, 149	35	35	35	48
NAG 9 - 143, 144, 145, 147, 150, 151, 152	36	36	36	48
NAG 9 - 2	37	37	37	48
NAG 9 - 3, 4	39	39	39	48
NAG 9 - All other privately owned land	40	40	38	48
NAG 10 - 5	40	40	40	47
NAG 10 - 6, 11	41	41	41	47
NAG 10 - 8	42	42	42	47
NAG 10 - All privately owned land	39	39	37	47
NAG 11 - 18	35	35	35	49
NAG 11 - 20, 21	37	3	36	49
NAG 11 - 19	37	37	37	49
NAG 11 - 17	38	38	38	49
NAG 11 - 7	39	39	39	49
NAG 11 - 12, 15	40	40	40	49
NAG 11 - 14, 16	42	42	42	49
NAG 11 - All other privately owned land	41	41	39	49
NAG 12 - 52, 55	35	35	35	45
NAG 12 - 51, 56	37	37	37	45
NAG 12 - 53, 57	38	38	38	45
NAG 12 - 50, 54	39	39	39	45
NAG 12 - 52	40	40	40	45

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NAG 12 - All other privately owned land	38	38	35	45
NAG A - 24, 25, 26, 27, 28, 29, 30, 36, 37, 38, 39, 40, 41	35	35	35	46
NAG A - 31	38	36	35	46
NAG A - 42, 43	36	36	36	46
NAG A - 32	37	37	35	46
NAG A - 22, 23	37	37	37	46
NAG A - 34	39	39	36	46
NAG A - 35	39	39	35	46
NAG A - All other privately owned land	39	39	36	46
NAG B - All other privately owned land	37	37	35	45
NAG C - 47	39	39	39	45
NAG C - 63	40	40	40	45
NAG C - All other privately owned land	37	37	35	45
NAG D - 44, 48	36	36	36	48
NAG D - 49	39	39	39	48
NAG D - All other privately owned land	40	40	38	48
NAG F - 65, 66	39	39	39	50
NAG F - 67	40	40	40	50
NAG F - 68	42	42	42	50
NAG F - All other privately owned land	40	40	40	50
NAG G - All privately owned land	41	41	39	50
All other privately owned land	35	35	35	45

Note: The acronym NAG refers to "Noise Assessment Group". All NAG and receiver locations are referenced in Appendix C2 of "Environmental Assessment, Integra Open Cut Project, Volume 2" dated 2008, prepared by URS Australia Pty Ltd.

L3.2 For the purpose of the noise limits table above:

a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays;

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- b) Evening is defined as the period from 6pm to 10pm; and
- c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.

L3.3 Noise from the premises is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise level limits in this licence unless otherwise stated.

Where it can be demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternative means of determining compliance. See Chapter 11 of the NSW Industrial Noise Policy.

The modification factors presented in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.

L3.4 Noise from the premises is to be measured at 1m from the dwelling façade to determine compliance with the LA1(1minute) noise limits in this licence.

L3.5 The noise emission limits identified in this licence apply under all meteorological conditions of:

- a) Wind speeds up to 3m/s at 10 metres above the ground level; or
- b) Temperature inversion conditions of up to 3oC/100m and wind speed up to 2m/s at 10 metres above the ground.

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