Appendix F

Noise and Blasting Impact Assessment

Boggabri Coal Mine

Boggabri Coal Mine
Modification 8
Noise and Blasting Impact Assessment

Prepared for

Hansen Bailey Pty Ltd

Global Acoustics

Noise and Vibration Analysis and Solutions

Global Acoustics Pty Ltd
PO Box 3115 | Thornton NSW 2322
Telephone +61 2 4966 4333
Email global@globalacoustics.com.au
ABN 94 094 985 734

Boggabri Coal Mine

Modification 8
Noise and Blasting Impact Assessment

Reference: 19166_R01.docx
Report date: 5 May 2021

Prepared for

Hansen Bailey Pty Ltd
PO Box 473
Singleton NSW 2330

Prepared by

Global Acoustics Pty Ltd
PO Box 3115
Thornton NSW 2322

Prepared:	Robert Kirwan Consultant	QA Review:	Jeremy Welbourne Consultant

Global Acoustics Pty Ltd ~ Environmental noise modelling and impact assessment ~ Sound power testing ~ Noise control advice ~ Noise and vibration monitoring ~ OHS noise monitoring and advice ~ Expert evidence in Land and Environment and Compensation Courts ~ Architectural acoustics ~ Blasting assessments and monitoring ~ Noise management plans (NMP) ~ Sound level meter and noise logger sales and hire

Contents

Appendices

1 INTRODUCTION

Global Acoustics Pty Ltd has been commissioned by Hansen Bailey Pty Ltd to undertake a Noise and Blasting Impact Assessment (NBIA) on behalf of Boggabri Coal Pty Limited (BCOPL) for Boggabri Coal Mine (BCM), which is located approximately 15km north-east of Boggabri in the Gunnedah Basin, New South Wales (NSW).

BCOPL intends to seek a Modification to State Significant Development (SSD) Approval 09_0182 under Section 4.55 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) to increase the depth of approved mining operations and to facilitate the construction of a fauna movement crossing across the existing haul road at the BCM (MOD 8).

A conceptual layout of MOD 8 is shown on Figure 1 and generally comprises the following:

- Increasing the approved maximum depth of mining down to the Templemore Coal Seam to recover an additional 61.6 Million tonnes (Mt) of Run of Mine (ROM) coal within the currently approved Mine Disturbance Boundary. It is expected that the additional ROM coal will be suitable for producing a lower ash, higher energy thermal, semi-soft coking and pulverised coal injection (PCI) quality products for sale to the export market. This will result in the extension of the mine life by six (6) years; and
- Construction of a specifically designed fauna movement crossing over the existing haul road between the overburden emplacement area (OEA) and the western side of the regional biodiversity corridor. The establishment of the fauna movement crossing is proposed to improve the movement of fauna from the Leard State Forest through the Southern Rehabilitation Area (SRA).

The proposed mining will remain within the currently approved Mine Disturbance Boundary. However, a minor increase in disturbance footprint (less than 3.31 hectares) will be required to facilitate the construction of landforms associated with the fauna movement crossing.

This NBIA has been prepared by Global Acoustics Pty Ltd, and is to form part of a Modification Report being prepared by Hansen Bailey Pty Ltd (Hansen Bailey) for the Modification.

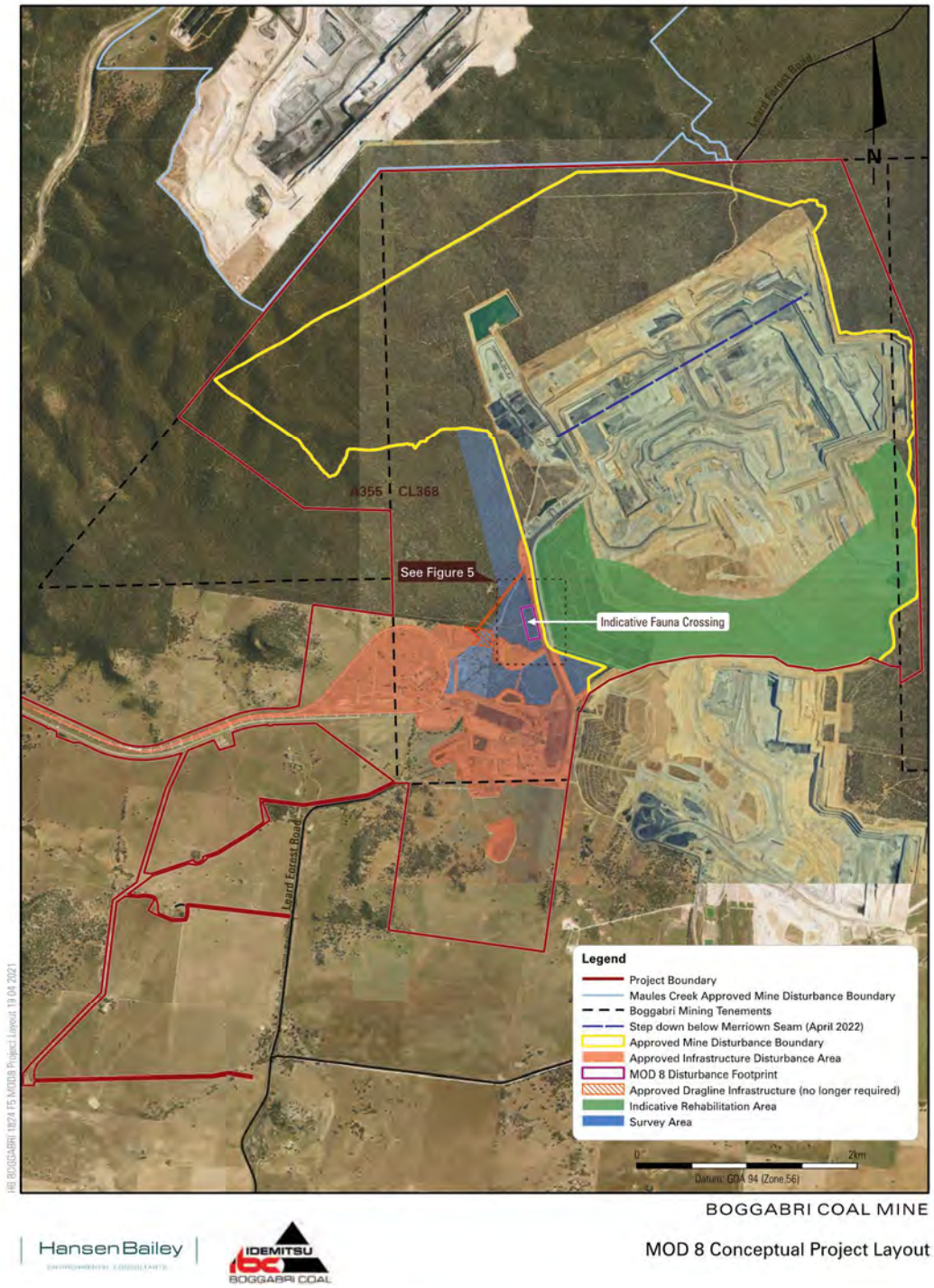


Figure 1: Modification 8 Project Layout

1.1 Terminology & Abbreviations

Some definitions of acoustic terminology that may be used in this document are as follows:

- L_A, the A-weighted root mean squared (RMS) noise level at any instant;
- L_{A1}, the noise level which is exceeded for 1 per cent of the time;
- $L_{A1,1minute}$, corresponds to the highest noise level generated for 0.6 second during one minute. In practical terms, this represents the maximum measured level, and is often used to assess sleep disturbance;
- L_{A10}, the noise level which is exceeded for 10 per cent of the time, which is approximately the average of the maximum noise levels;
- L_{A90}, the level exceeded for 90 per cent of the time, which is approximately the average of the minimum noise levels. The L_{A90} level is often referred to as the "background" noise level and is commonly used to determine noise criteria for assessment purposes;
- L_{Aeq}, the average noise energy during a measurement period;
- dB(A), noise level measurement units are decibels (dB). The "A" weighting scale is used to describe human response to noise;
- dB(C), noise level measurement units are decibels (dB). The "C" weighting scale is used as a measure of human response to high noise levels. It includes more of the low frequency range of sounds. It is often used to assess low frequency noise impact;
- sound power level (L_W denotes linear, L_{WA} denotes A-weighted), 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 (Lp), 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.

Definitions of acronyms that may be used in this document are as follows:

- BCM, Boggabri Coal Mine;
- CHPP, Coal Handling and Preparation Plant, which consists of the open cut infrastructure area;
- CPP, Coal Processing Plant, sometimes referred to as the washery building. Located within the CHPP;
- DPIE, Department of Planning, Industry and Environment;
- ENM, Environmental Noise Model;
- EPA, Environment Protection Authority;
- ICNG, Interim Construction Noise Guideline;
- INP, Industrial Noise Policy;
- NBIA, Noise and Blasting Impact Assessment;
- NMP, Noise Management Plan;
- NPfI, Noise Policy for Industry;
- RING, Rail Infrastructure Noise Guideline;
- RNP, Road Noise Policy;
- ROM, Run of Mine;
- MOP, Mining Operations Plan; and
- VLAMP, Voluntary Land Acquisition and Mitigation Policy.

2 NOISE IMPACT ASSESSMENT OVERVIEW

2.1 Policy and Guidelines

Technical policy and guidelines relevant to assessment of industrial and transport noise in NSW include:

- Industrial Noise Policy (INP) (EPA, 2000), now superseded;
- Noise Policy for Industry (NPfI) (EPA, 2017);
- Interim Construction Noise Guideline (ICNG) (DECCW[1], 2009);
- Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments (VLAMP) (NSW Government, 2018);
- Road Noise Policy (RNP) (DECCW, 2011);
- Rail Infrastructure Noise Guideline (RING) (EPA, 2013); and
- Australian and New Zealand Environment and Conservation Council guideline Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration (ANZECC) (EPA, 1990).

2.2 Assessment Approach

MOD 8 will remain within the currently approved Mine Disturbance Boundary, with the exception of a minor increase in disturbance footprint (less than 3.31 hectares) to facilitate the construction of landforms associated with the fauna movement crossing.

The primary objective of this NBIA is to evaluate whether BCM (including the changes sought by MOD 8) can continue to operate in accordance with approved noise and blasting criteria prescribed in SSD 09_0182. Consideration is given to whether BCM can maintain compliance with approved noise criteria while operating a largely un-attenuated mining fleet.

The last major NBIA undertaken for BCM was the Continuation of Boggabri Coal Mine Acoustic Impact Assessment (Bridges Acoustics, 2010) (the 2010 NBIA).

This NBIA has been prepared using generally the same assessment approach as the 2010 NBIA, which was assessed in accordance with the INP. The INP and NPfI are considered relatively equivalent as they apply to this assessment. Primary differences between the INP and NPfI, as applicable to this assessment, pertain to setting of assessment noise levels and consideration of residual noise impacts.

[1] Now the Environment Protection Authority.

However, these differences are not relevant to this assessment as approved noise and blasting criteria prescribed in SSD 09_0182 are being used for assessment of impact.

2.3 Operational Noise

Two operational stages of mining were modelled representing the progression of mining operations associated with MOD 8. Each stage modelled represents realistic worst case operating conditions for that period of operations for BCM (including the changes sought by MOD 8). The stages nominally relate to years 2024 and 2029. Mine planning for these years indicates peaks in operational fleet and activities in locations which are most exposed to neighbouring private residential receptors.

Operational intrusive noise, cumulative noise, modifying factor adjustments, and potential sleep disturbance impact associated with each mining stage is assessed. Section 5.1.1 provides further detail regarding operating scenarios.

An assessment area was defined that encompasses all known private residential receptors that may be noise impacted by MOD8.

Figure 2 and Figure 3 present conceptual mine plans for the two stages assessed.

2.4 Historical Compliance

Results from monthly compliance attended noise monitoring undertaken by Global Acoustics since March 2016 have continually shown BCM operate in compliance with noise criteria specified within SSD 09 _0182. Measured BCM noise levels are regularly inaudible or not measurable due to very low site only levels. Additionally, modifying factors including low frequency noise have not historically been applicable for BCM.

Global Acoustics has completed a number of assessments for BCM in recent years, including evaluation of historical real-time monitoring data, review of complaints history, sound power testing, and, modelling assessments to determine potential change to the predicted zone of impact due to operating un-attenuated mining equipment.

In last 5 years, 4 noise complaints have been received at BCM. The following is a summary of each complaint and the action taken by BCM:

- 2015 – A general complaint about night disturbance, specifically increased noise and vibration experienced between 10.30pm and midnight. Further investigation indicated BCM was unlikely to be the source;
- 2016 – Two complaints relating to water pump noise at night. BCM changed the operation of the pump to daylight hours only; and
- 2020 – A complaint in relation to droning and buzzing noise. BCM held a meeting with the complainant and reached an agreement that additional attended monitoring will be organised at property boundary.

Evaluation of historical real-time monitoring data indicated that the likelihood of exceedance of the SSD 09 _0182 criterion of $L_{Aeq,15minute}$ 35 dB (for private residences not subject to mitigation rights) would have been low during the years 2017, 2018 and 2019, with a trend toward decreasing noise levels to the east of the site noted over this period. Whilst no direct evaluation of compliance can be made with unattended real-time data, that assessment provides a good indication that compliance is typically achieved, and BCM noise levels rarely exceed $L_{Aeq,15minute}$ 35 dB at private residential locations around the mine.

Previous modelling assessments for BCM have indicated the predicted zone of impact for the current operation is typically less than predicted for the 2010 NBIA, despite the site operating equipment with higher sound powers than modelled for the 2010 NBIA.

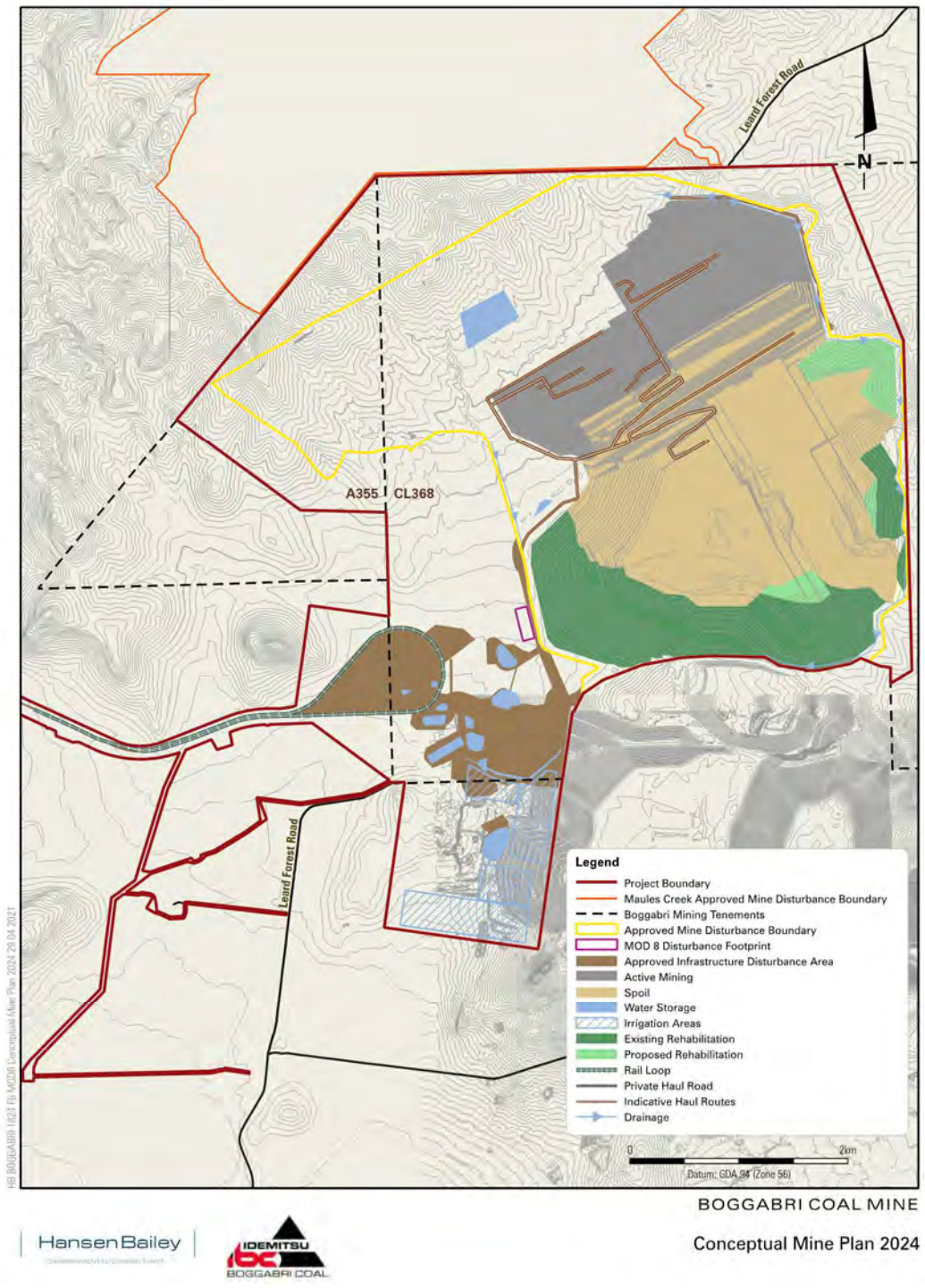


Figure 2 - 2024 Conceptual Stage Plan

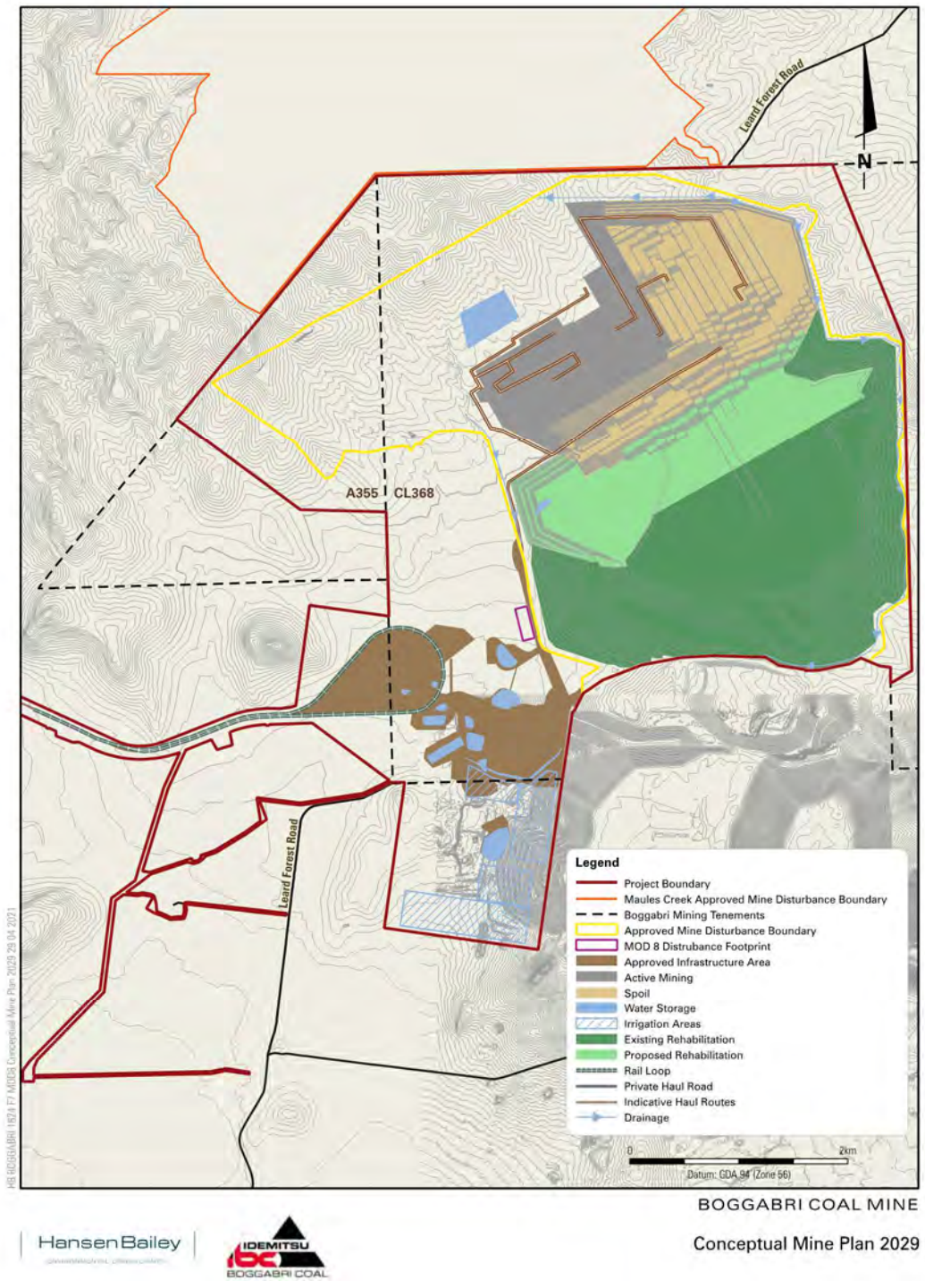


Figure 3 - 2029 Conceptual Stage Plan

2.5 Construction Noise

The only construction task for MOD 8 is the construction of a fauna movement crossing over the existing haul road to encourage the movement of fauna from the Leard State Forest to the SRA at BCM.

A typical worst-case construction scenario was developed and was assessed in accordance with the ICNG. A construction noise impact assessment is provided in Section 5.7 of this report.

2.6 Road Traffic and Rail Noise

The proposed mine plan changes for MOD 8 are scheduled to necessitate additional mining fleet and an associated increase in employees. This is expected to result in additional mine related traffic on the regional road network through additional deliveries of consumables and further employees travelling to and from the site.

Road traffic noise levels were predicted using CadnaA Traffic Noise Model (TNM) software. Typical worst-case scenarios of daily and peak hourly traffic volumes were assessed in accordance with the Road Noise Policy (RNP). A road traffic noise impact assessment for MOD 8 is provided in Section 5.9 of this report.

There is no change to rail volumes associated with MOD8; therefore, no change in rail noise impact relative to the Approved Development should occur.

2.7 Noise Modelling Methodology

Noise levels were predicted using RTA Technology's Environmental Noise Model (ENM), a computer based environmental noise model, to determine the acoustic impact of operational activities. ENM is approved by the DPIE and EPA as suitable for prediction of industrial noise involving large propagation distances and is currently the industry standard for NBIA of this nature. The model takes into account geometric spreading, atmospheric absorption, and, barrier and ground attenuation.

In accordance with Section 2.2 of the NPfI, all model predictions in this NBIA are rounded to the nearest integer.

2.8 Land Ownership and Receptors

All known private residential receptors that may be noise impacted by MOD 8 were assessed. Figure 4 illustrates land ownership and receptor locations. Details of assessed receptors are included in Appendix D.

2.9 Noise Contours

Noise contours were produced for assessment areas containing private residences to provide a visual representation of the model results. It should be noted that noise contours are based on interpolation of results determined for individual points, and as such are indicative, and are included for presentation purposes only.

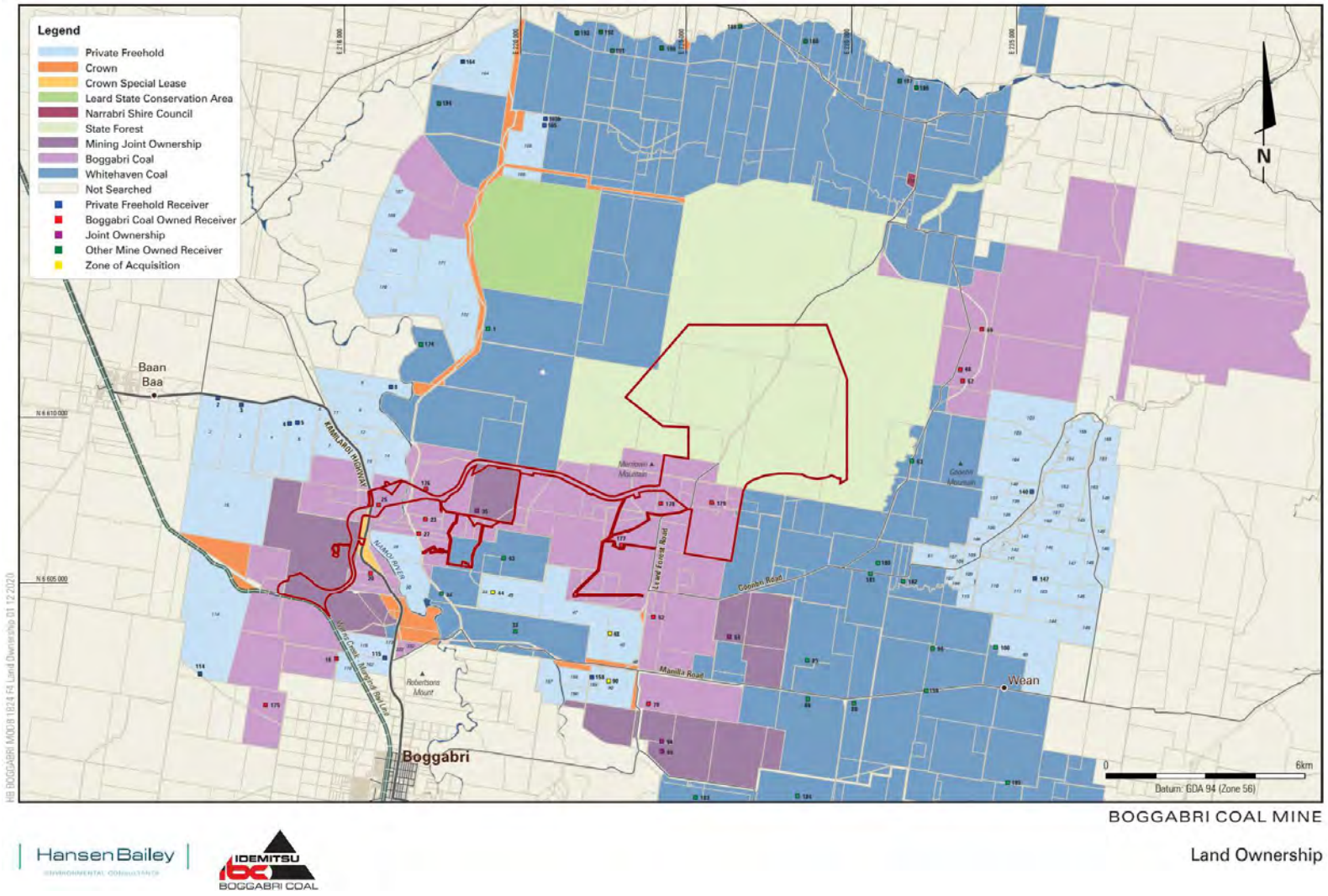


Figure 4 - Land Ownership

3 NOISE CRITERIA

BCM is committed to managing noise emissions from its operations to maintain compliance with the approved noise criteria. Therefore, noise criteria set out in SSD 09_0182 (as modified) have been adopted for assessment of noise impact in this NBIA.

3.1 Approved Noise Criteria (SSD 09_0182)

Schedule 3, Conditions 1 to 14 of SSD 09_0182 outline environmental performance conditions pertaining to noise. These are reproduced in the following sections.

3.1.1 Noise Mitigation Criteria and Acquisition Upon Request

Table 2 within Condition 4 of Schedule 3 of SSD 09_0182 lists private receptors entitled to mitigation or acquisition determined via an independent noise impact assessment at the request of the landowner. A number of these private receptors have since been acquired and are now mine owned. Receptor 44, 48 and 90 are the last remaining privately owned receptors with acquisition rights listed in Table 2 below.

Table 2: Maximum Predicted Noise Levels

Location Property/ID	Day ($L_{Aeq\ (15\ min)}$)	Evening ($L_{Aeq\ (15\ min)}$)	Night ($L_{Aeq\ (15\ min)}$)	Night ($L_{A1\ (1\ min)}$)
54	35	42	42	45
52	35	41	41	45
67, 68	35	40	40	45
23	35	38	38	51
27, 48	36	38	38	48
86	35	38	38	45
43, 44	35	37	37	45
32, 33, 79, 90	35	36	36	45

3.1.2 Intrusive Noise Criteria

Table 3 within Condition 5 of Schedule 3 of SSD 09_0182 lists noise criteria applicable for residences on privately owned land. This table is reproduced below.

Table 3: Noise impact assessment criteria dB(A) – maximum any stage of project life

Location Property/ID	Noise Impact Assessment Criteria			
	Day ($L_{Aeq\ (15\ min)}$)	Evening ($L_{Aeq\ (15\ min)}$)	Night ($L_{Aeq\ (15\ min)}$)	Night ($L_{A1\ (1\ min)}$)
All other privately-owned residences	35	35	35	45

3.1.3 Maximum Noise Event Criteria

Maximum noise event criteria, used to assess sleep disturbance impacts during the night period, are prescribed in Table 3 within Condition 5 of Schedule 3 of SSD 09_0182. That table is reproduced above.

3.1.4 Cumulative Noise Criteria

Table 4 within Condition 7 of Schedule 3 of SSD 09_0182 lists cumulative noise criteria applicable for residences on privately owned land. This table is reproduced below.

Table 4: Cumulative noise criteria dB(A) $L_{Aeq\ (period)}$

Location	Day ($L_{Aeq\ (period)}$)	Evening ($L_{Aeq\ (period)}$)	Night ($L_{Aeq\ (period)}$)
All privately-owned land	40	40	40

3.2 Voluntary Land Acquisition and Mitigation Policy

In September 2018, the NSW government published the Voluntary Land Acquisition and Mitigation Policy (the VLAMP) for State Significant Mining, Petroleum and Extractive Industry Developments (NSW Government, 2018). This document describes the NSW Government's policy for voluntary mitigation and land acquisition to address noise impacts from state significant mining, petroleum and extractive industry developments.

3.2.1 Mitigation and Acquisition Criteria

The VLAMP provides the following guidance on the applicability of noise mitigation and acquisition criteria:

A consent authority can apply voluntary mitigation and voluntary land acquisition rights to reduce:

- *operational noise impacts of a development on privately owned land; and*
- *rail noise impacts of a development on privately owned land near a non-network rail line (private rail line), that is on, or exclusively servicing an industrial site (see Appendix 3 of the RING);*

But not:

- *construction noise impacts, as these impacts are shorter term and can be controlled;*
- *noise impacts on the public road or rail network; or*
- *modifications of existing developments with legacy noise issues, where the modification would have beneficial or negligible noise impacts.*

3.2.2 Voluntary Mitigation Rights

The VLAMP states:

A consent authority should only apply voluntary mitigation rights where, even with the implementation of best practice management at the mine site:

- *the noise generated by the development would meet the requirements in Table 1 (see following page), such that the impacts would be characterised as marginal, moderate or significant, at any residence on privately owned land; or*
- *the development would increase the total industrial noise level at any residence on privately owned land by more than 1 dB(A) and noise levels at the residence are already above the recommended amenity noise levels in Table 2.2 of the Noise Policy for Industry; or*
- *the development includes a private rail line and the use of that private rail line would cause exceedances of the recommended acceptable levels in Table 6 of Appendix 3 of the RING by greater than or equal to 3 dB(A) at any residence on privately owned land.*

All noise levels must be calculated in accordance with the NPfI or RING (as applicable).

3.2.3 Voluntary Land Acquisition Rights

The VLAMP states:

A consent authority should only apply voluntary land acquisition rights where, even with the implementation of best practice management:

- *the noise generated by the development would be characterised as significant, according to Table 1 (see following page), at any residence on privately owned land; or*
- *the noise generated by the development would contribute to exceedances of the acceptable noise levels plus 5 dB in Table 2.2 of the NPfI on more than 25% of any privately-owned land where there is an existing dwelling or where a dwelling could be built under existing planning controls [2]; or*
- *the development includes a private rail line and the use of that private rail line would cause exceedances of the recommended maximum criteria in Table 6 of Appendix 3 of the RING at any residence on privately owned land.*

All noise levels must be calculated in accordance with the NPfI or RING (as applicable).

Table 1 of the VLAMP outlines a procedure for characterising noise impact and provides examples of potential receptor-based treatments that could be used to mitigate residual noise impact; this table is reproduced below.

[2] *Voluntary land acquisition rights should not be applied to address noise levels on vacant land other than to vacant land specifically meeting these criteria.*

Table 1 – Characterisation of noise impacts and potential treatments[16]

If the predicted noise level minus the project noise trigger level[17] is:	And the total cumulative industrial noise level is:	Characterisation of impacts:	Potential treatment:
All time periods 0-2dB(A)	Not applicable	Impacts are considered to be **negligible**	The exceedances would not be discernable by the average listener and therefore would not warrant receiver based treatments or controls
All time periods 3-5dB(A)	• ≤ recommended amenity noise level in Table 2.2 of the NPfI; or • > recommended amenity noise level in Table 2.2 of the NPfI, but the increase in total cumulative industrial noise level resulting from the development is ≤1dB	Impacts are considered to be **marginal**	Provide mechanical ventilation / comfort condition systems to enable windows to be closed without compromising internal air quality / amenity.
All time periods 3-5dB(A)	> recommended amenity noise level in Table 2.2 of the NPfI, and the increase in total cumulative industrial noise level resulting from the development is >1dB	Impacts are considered to be **moderate**	As for marginal impacts but also upgraded façade elements like windows, doors or roof insulation, to further increase the ability of the building façade to reduce noise levels.
Day and evening >5dB(A)	≤ recommended amenity noise levels in Table 2.2 of the NPfI	Impacts are considered to be **moderate**	As for marginal impacts but also upgraded façade elements like windows, doors or roof insulation, to further increase the ability of the building façade to reduce noise levels.
Day and evening >5dB(A)	> recommended amenity noise levels in Table 2.2 of the NPfI	Impacts are considered to be **significant**	Provide mitigation as for moderate impacts and see voluntary land acquisition provisions above.
Night >5dB(A)	Not applicable	Impacts are considered to be **significant**	Provide mitigation as for moderate impacts and see voluntary land acquisition provisions above.

Figure 5 - Table 1 of the VLAMP (NSW Government, 2018)

3.3 Construction Noise Criteria

Table 1 within Condition 2 of Schedule 3 of SSD 09_0182 lists construction noise criteria applicable for residences on privately-owned land. This table is reproduced below. Receptors 23 and 27 listed in Table 1 are now mine owned.

Table 1: Construction Noise impact assessment criteria – maximum any stage of project life

Location Property/ID	Construction Noise Impact Assessment Criteria Day dB(A) $L_{Aeq(15\ min)}$
27	50
23	45
All other privately-owned residences	40

It should be noted that the construction noise criteria in SSD 09_0182 specifically relates to the construction and/or upgrade of the Boggabri Rail Spur Line, Kamilaroi Highway Access Roads, and Daisymede Laydown Compound. It is however, considered appropriate for other construction activities given it was derived in accordance with ICNG criteria.

Construction noise impact is assessed in Section 5.7 of this report.

3.4 Corrections for Annoying Noise Characteristics (Modifying Factors)

Fact Sheet C of the NPfI outlines procedures for assessing modifying correction factors. These correction factors, also referred to as modifying factor penalties, are applied to predicted/measured noise levels at the receptor before comparison with relevant noise trigger levels/criteria, to account for the additional annoyance caused by these noise characteristics.

Open cut mines are not generally tonal or intermittent in nature as per the intent of the NPfI. Whilst individual noise sources, such as machine drives, alarms and hydraulic systems may exhibit tonal characteristics, these sources operate concurrently with the open cut mine, and the resulting combined sound power spectrum is not tonal in nature. BCM operates 24 hours per day, and therefore does not exhibit intermittent noise characteristics. No further assessment of these characteristics has been made.

Section 5.5 includes assessment of potential low frequency noise impact.

3.5 Road Traffic Noise Criteria

The RNP is applicable to road traffic noise generated by BCM and applies different noise limits dependent upon the development category and receptor type. Access to BCM is typically via the Kamilaroi Highway and BCM Access Road. The Kamilaroi Highway is designated an arterial road and the BCM Access Road is designated as a local road in accordance with Section 2.2 of the RNP.

Table 3.6 shows applicable residential noise level criteria for local and arterial roads affected by additional traffic generated by land use developments. These are external criteria for assessment against façade corrected noise levels.

Table 3.1: ROAD TRAFFIC NOISE CRITERIA

Development Type/Land Use	Day Criterion	Night Criterion
Local Roads		
Existing residences affected by additional traffic on existing local roads generated by land use developments	$L_{Aeq,1hour}$ 55 dB	$L_{Aeq,1hour}$ 50 dB
Arterial Roads		
Existing residences affected by additional traffic on existing freeways/arterials/ sub-arterial roads generated by land use developments	$L_{Aeq,15hour}$ 60 dB	$L_{Aeq,9hour}$ 55 dB

Notes:

1. *Day $L_{Aeq,15hour}$ from 7am to 10pm ~ Night $L_{Aeq,9hour}$ from 10pm to 7am.*

Section 2.4 of the RNP states that in addition to the assessment criteria outlined above, any increase in traffic noise level at a location due to a proposed project or traffic generating development must be considered. Residences experiencing increases in total traffic noise level above a relative increase criterion should also be considered for mitigation. Table 3.2 shows relative increase criteria for residential land uses.

Table 3.2: RELATIVE INCREASE CRITERIA FOR RESIDENTIAL LAND USES

Development Type/Land Use	Total traffic noise level increase - dB(A)	
	Day 7am to 10pm	Night 10pm to 7am
New road corridor/redevelopment of existing road/land use development with the potential to generate additional traffic on existing road	Existing traffic $L_{Aeq,15hour}$ + 12 dB (external)	Existing traffic $L_{Aeq,9hour}$ +12 dB (external)

The 'existing' traffic noise level refers to the level from all road categories that would occur for the relevant 'no build' option. Where the existing road traffic $L_{Aeq,period}$ is found to be less than 30 dB, it is deemed to be 30 dB.

Section 3.4 of the RNP outlines procedures for applying the assessment and relative increase criteria. Essentially, once the study area is identified, assessment is undertaken to identify if any criterion, either assessment or relative increase, is exceeded. Where any exceedance is determined, feasible and reasonable mitigation measures should be identified and applied.

Where controlling criteria are not achievable, and justification can be provided that reasonable and feasible mitigation measures have been applied, the RNP states:

> *...for existing residences and other sensitive land uses affected by additional traffic on existing roads generated by land use developments, any increase in the total traffic noise level should be limited to 2 dB above that of the corresponding 'no build option'.*

An assessment of road traffic noise is included in Section 5.9 of this report.

4 NOISE MODEL PARAMETERS

4.1 Meteorology

Under various wind and temperature gradient conditions, noise may be increased or decreased compared with still-isothermal conditions – that is, no wind or temperature gradient. Atmospheric conditions that most affect noise propagation are temperature and wind velocity gradients. They can both enhance or reduce noise propagation from source to receiver due to refraction of sound propagating through the atmosphere, brought about by a change in sound speed with height.

Noise levels are increased when the wind blows from source to receiver or under temperature inversion conditions (both of which are sometimes referred to as 'noise enhancing weather conditions'), and decreased when the wind blows from receiver to the source or under temperature lapse conditions.

Global Acoustics has recently analysed weather data from nine weather stations in the area surrounding BCM as part of another project completed for BCOPL. This analysis indicated that noise enhancing meteorological conditions locally within the area surrounding BCM differ from those previously used in the 2010 NBIA. Three new automatic weather stations (AWS) installed during June 2019 were found to provide a better representation of regional weather conditions surrounding BCM than the previously used AWS located near the mine infrastructure area. It was recommended that the new AWSs be used to determine model meteorological conditions in future NBIAs. A fourth AWS, also installed during June 2019 and located on the Goonbri property, was found to not represent regional weather conditions, and has therefore been excluded from the evaluation. Data from the Callandar, Velyama and RL395 AWS were processed to determine noise enhancing meteorological conditions in accordance with the NPfI. The locations of these AWS are shown in Figure 6.

Table 4.1 lists noise enhancing meteorological conditions included in this assessment. Neutral atmospheric conditions were also assessed.

Table 4.1 MODELLED METEOROLOGICAL CONDITIONS

Temperature C	Humidity %	Wind Speed m/s	Wind Direction Degrees	VTG ^{O}/100m
		Day Period		
10	80	0	-	-0.5
10	80	3	157.5	-0.5
10	80	3	180	-0.5
10	80	3	202.5	-0.5
10	80	3	225	-0.5
		Evening Period		
10	80	3	67.5	-0.5
10	80	0	90	-0.5
10	80	3	112.5	-0.5

10	80	3	135	-0.5
Night Period				
5	80	0	-	4
5	80	3	67.5	-0.5
5	80	3	90	-0.5
5	80	3	112.5	-0.5
5	80	3	135	-0.5
5	80	3	180	-0.5

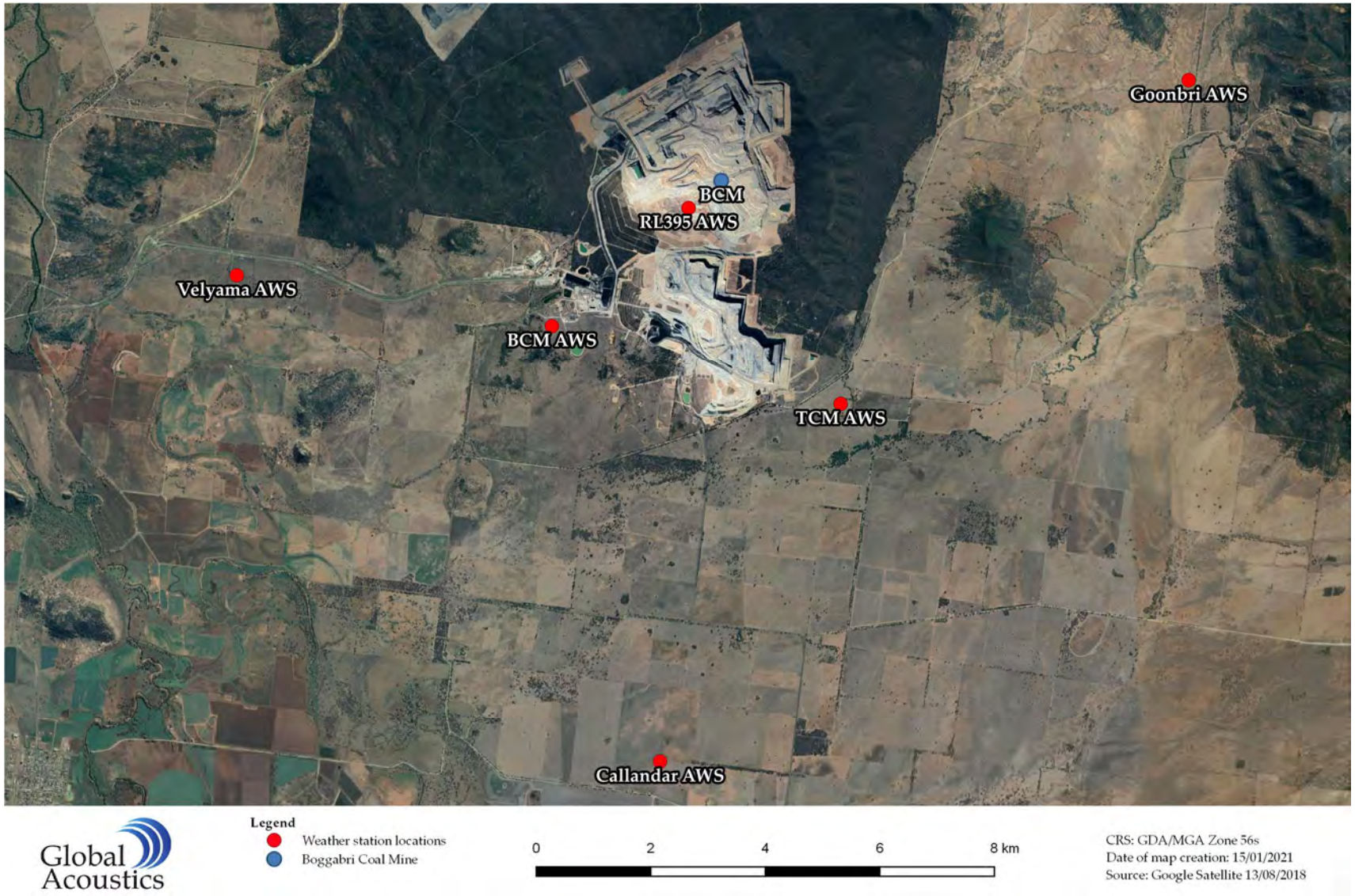


Figure 6: Weather station locations

4.2 Indicative Mining Fleet

Table 4.2 and Table 4.3 list indicative open cut mining and CHPP equipment types and quantities. Modelled plant locations and pit shell topography figures are included in Appendix B.

Table 4.2: OPEN CUT EQUIPMENT INCLUDED IN MODELS

Description	2024	2029
Komatsu 930E	40	31
Komatsu 730E	11	11
Komatsu HD1500	1	1
Hitachi EH3500	6	6
Komatsu HD785	5	5
Komatsu 730E	5	5
Caterpillar 16M	3	3
Caterpillar 24M	3	3
Komatsu 475A	10	11
Komatsu 375A	6	5
Caterpillar D11T	2	2
Komatsu WD900	1	1
ReichDrill C700D	3	3
ReichDrill C750D	3	3
Caterpillar 6030	1	1
Caterpillar 6060	1	2
Hitachi EX2600	1	2
Liebherr R9400	2	1
Liebherr R9800	3	2
Caterpillar 992K	2	2
KOM WA1200-6	1	1

Notes:

1. *Table shows representative typical equipment to allow for assessment; and*
2. *Modelled plant utilisation rates for 2024 and 2029 are approximately 87% and 85% respectively of total plant on site.*

Table 4.3: CHPP ITEMS INCLUDED IN MODELS (both stages)

Description
CPP (wash plant)
Locomotive x 3 idling during loading
Train travelling on rail spur
CV804 A-drive
CV804 B&C-drives
CV804 to BN804 transfer (top)
Train wagon loading (release from bin into wagon)
CV802 drive 280 kW
CV803 drive 280 kW
ROM dump hopper composite (with truck dump)
CV201 to CV202 + crusher
CV202 drive 132 kW
Product bin
Plant Feed Dump Hopper
CV701 drive 35 kW
Plant Feed Surge Bin
Plant Feed Sizing Station
Stacker 2 Drive 132 kW plus conveyor (50m)
Stacker 1 Drive 132 kW plus conveyor (50m)
Conveyor CV101
Conveyor CV102
Conveyor CV108
Conveyor CV201
Conveyor CV202
Conveyor CV701
Conveyor CV801
Conveyor CV802
Conveyor CV803
Conveyor CV804

Throughout the life of the mine, equipment types and quantities may be varied in response to changes in technology, and to address technical issues such as geotechnical and geological variables, coal marketing quality requirements etc., however appropriate noise controls and noise management strategies can be implemented to maintain compliance with approved criteria.

4.3 Equipment Sound Power

Sound powers for CHPP and open cut equipment used in modelling, provided in Table 4.4 are based on measured in-service levels of plant operating at the BCM, with the exception of the drill sound power, which was sourced from the Global Acoustics technical library for equivalent plant items.

Mining equipment and associated sound power levels shown in this NBIA are representative of a typical mining equipment fleet proposed for use at BCM. These sound powers represent current or anticipated fleet average levels. It is normal for plant items within an equipment category to vary, with some having sound power either higher or lower than the fleet average. It is important to note that sound power levels adopted for this NBIA are based on actual measured in-service levels of equipment currently operating at the BCM, or on anticipated levels for future equipment. They are generally higher than the sound power levels adopted for the 2010 NBIA, which were assumed theoretical values.

Haul truck sound powers were incorporated into strings created for each route. This method distributes the acoustic energy of vehicles along the length of each haul route. Routes comprise a string of segments of fixed length, each having a sound power determined by the following:

- Sound power for type of trucks on route. Trucks travelling down ramps greater than 5% grade were allocated a reduced sound power;
- Number of each truck type on route in a 15-minute period, based on loading unit load capacity;
- Speed of loaded truck on segment grade toward dump/ROM; and
- Speed of empty truck on segment grade from dump/ROM.

Truck speeds are relative to grade in direction of travel and were allocated in accordance with truck speed data collected from mine sites in the Hunter Valley. Speed determines the duration required to traverse each segment, an important variable when calculating L_{Aeq} for a specific time period. Graders and water carts were allocated sound powers in a similar manner. Haul truck and watercart sound powers shown in Table 4.4 are uphill loaded, full power levels.

Table 4.4: SOUND POWER DATA

	Representative Sound Power, $L_{eq,15minute}$	
Equipment Category	**Linear (dB)**	**A-weighted (dB(A))**
Komatsu 930E	130	121
Komatsu 730E	126	114
Komatsu HD1500	124	118
Hitachi EH3500	129	117
Caterpillar 773	123	116
Komatsu HD785	126	120
Komatsu 730E	125	114
Caterpillar 16M	114	107

	Representative Sound Power, $L_{eq,15minute}$	
Equipment Category	Linear (dB)	A-weighted (dB(A))
Caterpillar 24M	117	108
Komatsu 475A	122	117
Komatsu 375A	121	116
Caterpillar D11T	126	123
Komatsu WD900	126	117
Caterpillar 6290	127	117
Caterpillar 6030	129	123
Caterpillar 6060	131	122
Caterpillar 6060	129	121
Caterpillar 6060	133	121
Caterpillar 6060	131	125
Hitachi EX1900	125	115
Hitachi EX2600	127	123
Hitachi EX3600	126	119
Liebherr R9400 BH	123	115
Liebherr R9400	130	117
Liebherr R9800	126	117
Liebherr R9800	126	117
Caterpillar 988H	115	110
Caterpillar 992K	120	105
Caterpillar 992K	120	106
KOM WA1200-6	127	119
Komatsu WA600-6LC	123	110
CPP (wash plant)	134	113
Locomotive x 3 idling during loading	121	105
Train travelling on rail spur	125	114
CV804 A-drive	120	115
CV804 B&C-drives	120	114
CV804 to BN804 transfer (top)	103	95
Train wagon loading (release from bin into wagon)	118	116
CV802 drive 280 kW	99	94
CV803 drive 280 kW	98	94
ROM dump hopper composite (with truck dump)	124	114
CV201 to CV202 + crusher	126	114
CV202 drive 132 kW	101	95
Product bin	118	109

	Representative Sound Power, $L_{eq,15minute}$	
Equipment Category	Linear (dB)	A-weighted (dB(A))
Plant Feed Dump Hopper	128	111
CV701 drive 35 kW	101	95
Plant Feed Surge Bin	123	107
Plant Feed Sizing Station	123	115
Stacker 2 Drive 132 kW plus conveyor (50m)	107	103
Stacker 1 Drive 132 kW plus conveyor (50m)	107	103
Conveyor CV101 per metre	90	81
Conveyor CV102 per metre	88	78
Conveyor CV108 per metre	89	81
Conveyor CV201 per metre	92	81
Conveyor CV202 per metre	92	85
Conveyor CV701 per metre	89	78
Conveyor CV801 per metre	87	79
Conveyor CV802 per metre	90	87
Conveyor CV803 per metre	90	87
Conveyor CV804 per metre	96	93

Notes:

1. *Table shows representative typical sound powers to allow for assessment.*

5 NOISE IMPACT ASSESSMENT

5.1 Operational Noise Assessment

The following sections outline the BCM mining scenarios considered for MOD 8, and operational noise predictions.

5.1.1 Mining Scenarios

The two operational mining stages that were modelled represent the updated progression of mining operations for MOD 8. The stages nominally relate to years 2024 and 2029. Figures illustrating modelled equipment layouts are included in Appendix B.

The operating configurations assessed for each year are the same for the day, evening and night periods.

5.1.2 Operational Noise Predictions

Table 5.1 presents noise enhancing meteorological conditions predictions for each stage (2024 and 2029). Only privately owned receptors with a maximum prediction for any time period or stage of $L_{Aeq,15minute}$ 35 dB or more are presented in Table 5.1. Predictions for the complete receptor set, for both neutral atmospheric conditions and noise enhancing meteorological conditions are presented in Appendix A.

Intrusive noise criteria from SSD 09_0182 for each receptor are listed, and evaluation of impact is made against those criteria. For receptors that have acquisition on request status with BCM, evaluation of impact is made against maximum predicted noise levels detailed in Table 2 of SSD 09_0182. These are indicated by a symbol adjacent to the receptor. Predictions highlighted green exceed the intrusive noise criterion.

Table 5.1: OPERATIONAL NOISE PREDICTIONS – $L_{Aeq,15minute}$ dB

Receptor ID	Intrusive Noise Criteria			Year 2024			Year 2029		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
8	35	35	35	35	35	36	34	35	35
158	35	35	35	25	35	36	23	34	35
R64	35	35	35	33	34	35	32	33	34
44^	35^	37^	37^	26	36	37	26	35	36
48^	36^	38^	38^	27	37	39	26	37	38
90^	35^	36^	36^	24	35	36	23	34	35
165b#	35	35	35	34	34	35	32	32	33

Notes:

1. *Values highlighted green exceed the intrusive noise criterion;*
2. *^ indicates receptor entitled to acquisition on request with BCM, and is compared against the maximum predicted levels in Table 2 within Condition 4 of Schedule 3 of SSD 09_0182; and*
3. *# indicates receptor entitled to acquisition upon request for noise impacts with another mine.*

The modelling for Year 2024 has two predicted exceedances of intrusive noise criteria. These are as follows.

1. A minor 1 dB exceedance is predicted for Receptor 8 during the night period. Receptor 8, which is located to the west of BCM, was not assessed in the 2010 NBIA and therefore is not listed in SSD 09_0182. Criteria have been allocated based on "All other privately-owned land" criteria listed in SSD 09_0182. This predicted exceedance is primarily due to rail spur noise generated by a train travelling between the site and the main rail line. Operational predictions without the train travelling on the rail spur meet criteria listed in SSD 09_0182. It should be noted that rail operations on the spur are not expected to change, therefore noise impact at Receptor 8 is not expected to change as a result of MOD 8; and

2. A minor 1 dB exceedance is predicted for Receptor 158 during the night period. Receptor 158, which is located to the south of BCM, was not assessed in the 2010 NBIA (residence was constructed after the assessment) and therefore is not listed in SSD 09_0182. Criteria have been allocated based on "All other privately-owned land" criteria listed in SSD 09_0182.

A minor 1 dB exceedance is also predicted for Receptor 48 during the night period, however this property is already subject to acquisition upon request with BCM.

Exceedances of 0-2 dB are considered negligible in accordance with the VLAMP, as increased noise levels of this magnitude would not be discernible to the average listener and do not warrant receiver based treatments or controls.

There were no predicted exceedances of the intrusive noise criteria for the Year 2029 scenario.

It should be noted that there is no meaningful change to the zone of noise impact predicted for future operations, despite adoption of generally higher sound power levels than assumed for the 2010 NBIA. On this basis, it is considered reasonable that BCM should be able to operate a mining fleet with sound power levels consistent with those applied to this NBIA, which are based on un-attenuated equipment. It is recommended that Conditions 9 and 10 of SSD 09_0182 be removed or reworded to reflect this.

5.2 Indicative Noise Contours

Figure 7 and Figure 8 present indicative $L_{Aeq,15minute}$ noise contours for each of the modelled stages. Noise contours are the maximum envelope of the day, evening and night periods. A complete set of noise contour figures is included in Appendix C.

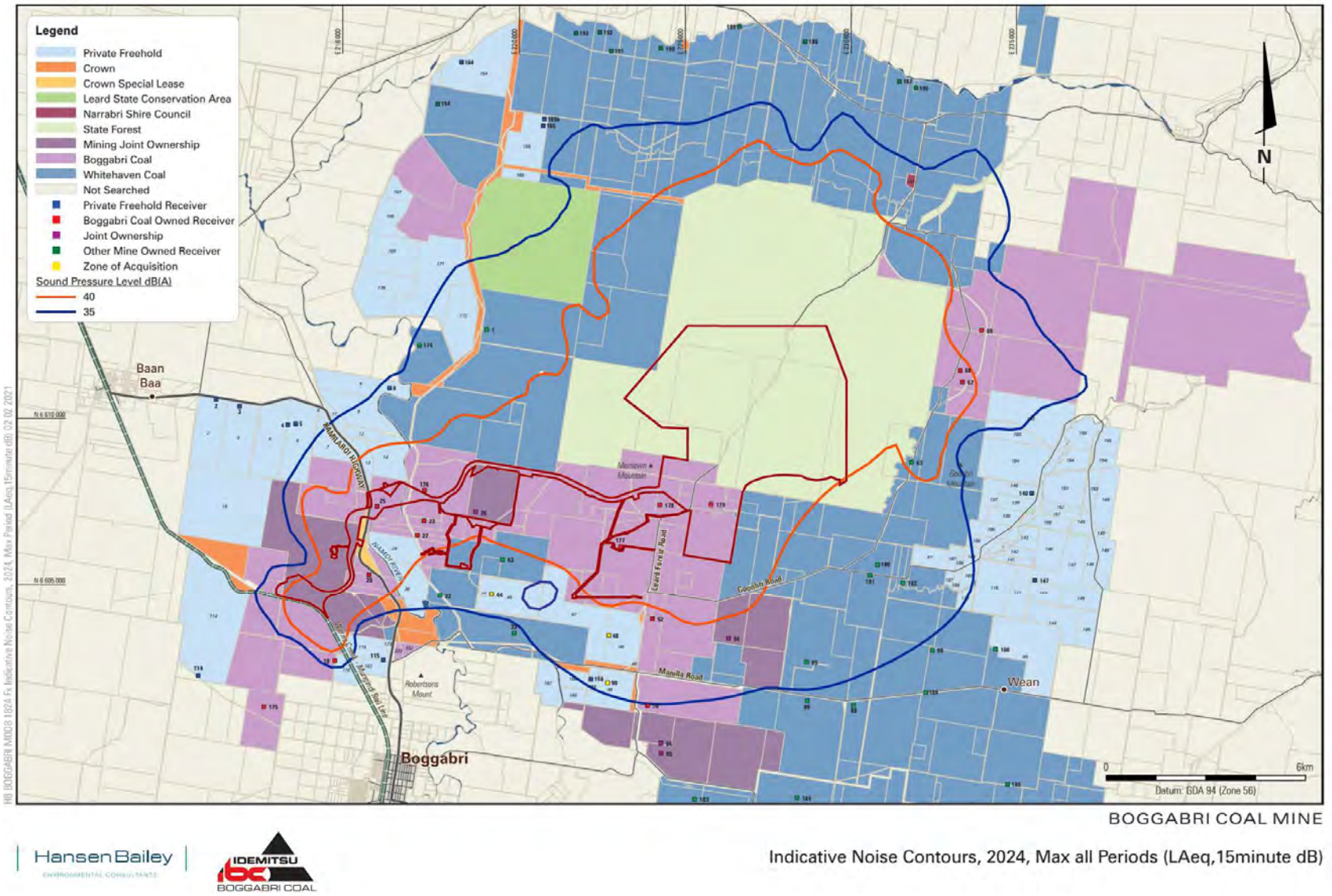


Figure 7 - Indicative Noise Contours Maximum Envelope of All Time Periods – 2024

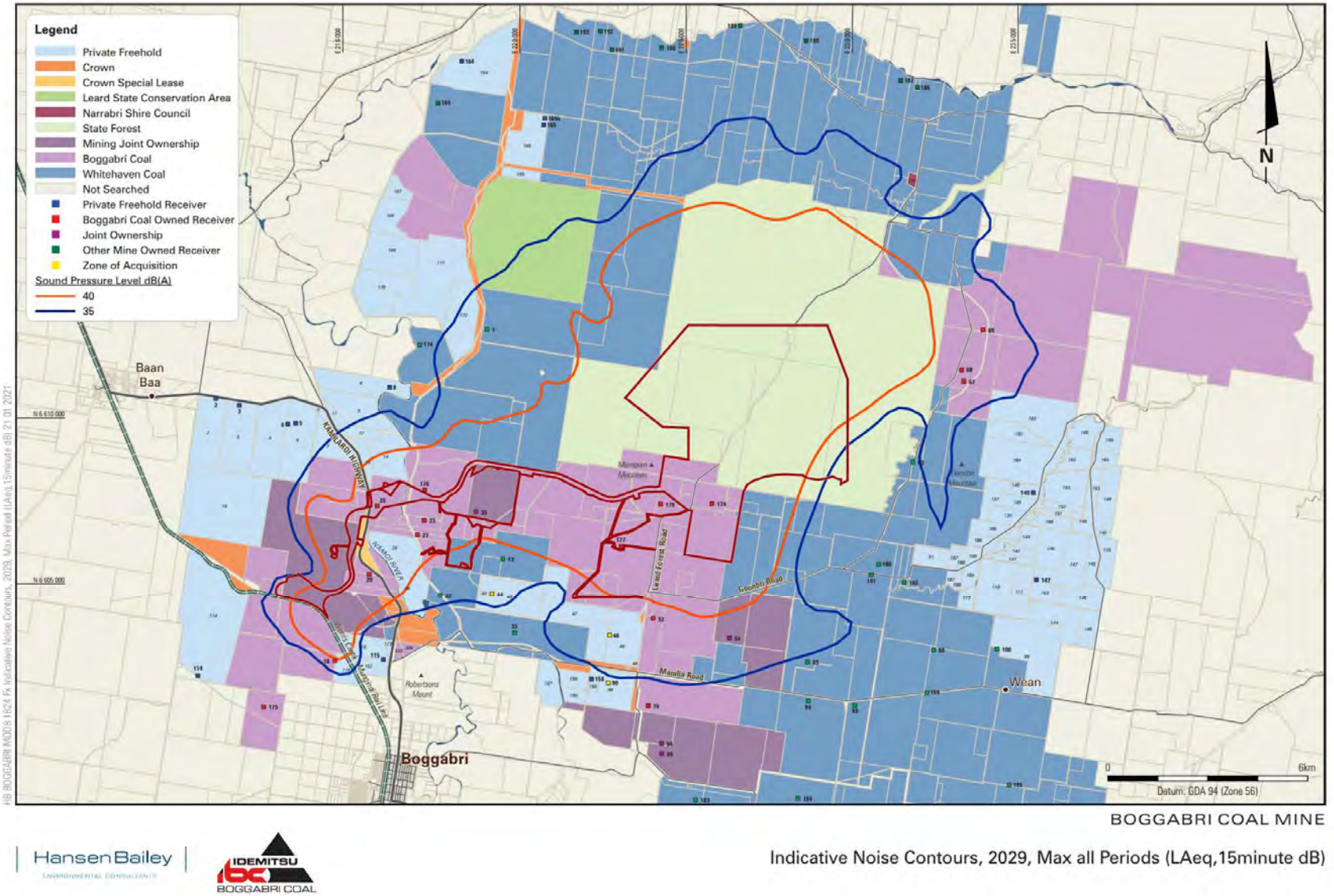


Figure 8 - Indicative Noise Contours Maximum Envelope of All Time Periods - 2029

5.3 Private Land Area Assessment

The VLAMP includes an assessment requirement for privately owned land (refer to Section 3.2.3 for more detail), stating that voluntary land acquisition rights may apply where, even with the implementation of best practice management, the noise generated by the development would contribute to exceedances of the acceptable noise amenity levels plus 5 dB in Table 2.2 of the NPfI on more than 25% of any privately-owned land. This requirement is to be assessed where there is an existing dwelling or where a dwelling could be built under existing planning controls. Acceptable noise amenity levels plus 5 dB for the day, evening and night periods for receptors in a rural land environment are $L_{Aeq,period}$ 55, 50 and 45 dB respectively. This corresponds to an $L_{Aeq,15minute}$ of 58, 53 and 48 dB respectively to allow for assessment against $L_{Aeq,15minute}$ predictions.

Noise contours were generated over contiguous private lot areas, from which the maximum envelope of predicted noise emission was determined. This was used to evaluate the maximum extent of noise impact for each time period and allow evaluation of impact over private land areas. Properties already subject to acquisition on request in accordance with SSD 09_0182 were excluded.

The outcome of this assessment was that no private landholdings have more than 25% of the land area predicted to exceed VLAMP criteria in any time period, for either of the two stages assessed. Therefore, no additional properties would be entitled to voluntary land acquisition rights due to predicted impact over the land area.

5.4 Maximum Noise Level Assessment

Potential sleep disturbance impact was assessed by predicting levels from plant items known to generate noise levels that at times stand out above the general mining continuum. Shovel and excavator bucket noise, first pass loads into empty truck trays, rear dump truck exhaust and dozer track noise are recognised as sources which can generate high, short term noise levels that may cause sleep disturbance.

The following sources were modelled to assess sleep disturbance:

- Impact noise generated by excavator buckets impacting truck bodies or hard ground material, or rocks impacting the bottom of empty haul truck trays was modelled at each dig location. A sound power of L_{max}/L_{Amax} 131/125 dB was modelled for each impact event;
- Dozer track slap was modelled at each dozer operating location. A sound power of L_{max}/L_{Amax} 129/125 dB representing dozer operation in 2nd gear reverse was modelled; and
- Haul truck exhaust surges were modelled by assessing a maximum sound power event of L_{max}/L_{Amax} 135/124 dB at each overburden emplacement area, and, at exposed sections along haul routes. This sound power is an addition of 5 dB to the full rated power, uphill loaded sound power spectrum in engine and exhaust frequencies (31.5 to 500 Hz).

Assessment of sleep disturbance involved modelling each of these sources, and then combining the

highest prediction with results for the remainder of operational plant to obtain an estimate of possible short-term maximum noise emissions.

Sleep disturbance model predictions are less than the relevant $L_{A1,1minute}$ criteria prescribed in SSD 09_0182 for all receptors. As such, there is no sleep disturbance impact predicted.

5.5 Low Frequency Noise Assessment

To evaluate low frequency noise modifying factor adjustment applicability, each stage plan was modelled in ENM using one-third octave sound power inputs in order to obtain one-third octave model predictions. Predicted one-third octave L_{Aeq} spectra for each of the prevailing meteorological conditions were evaluated directly against NPfI low frequency noise thresholds.

All results were below NPfI thresholds for privately owned receptors, meaning low frequency noise modifying factor adjustment applicability is not predicted.

As detailed in Section 2.4 BCM has no history of modifying factors being applicable since Global Acoustics commenced compliance noise monitoring in March 2016.

5.6 Cumulative Noise Assessment

Other industrial noise sources around BCM with potential to cause cumulative noise impact to receptors within the assessment area include:

- Maules Creek Coal Project (MCCP); and
- Tarrawonga Coal Mine (TCM).

Predictions from the MCCP Acoustics Impact Assessment (Bridges Acoustics, 2011) and the TCM Modification 7 Noise Assessment (Wilkinson Murray, 2019) were combined with predictions within this report for privately owned receptors to assess cumulative noise impact. All results were below cumulative noise criteria prescribed in SSD 09_0182, indicating cumulative noise impact is not predicted.

5.7 Construction Noise Assessment

Construction noise associated with the construction of the fauna movement crossing was quantitatively assessed. A construction scenario was developed that represents a typical worst-case configuration of equipment and usage.

Table 5.2 lists the equipment types, sound power, quantities and acoustic utilisation rates for each task. Note that these parameters are representative of equipment typically used for such a task, however, alternative or additional equipment may be utilised depending on final construction design. The model conservatively assumes that all equipment listed operates concurrently. Acoustic utilisation rates are applied to account for traffic interactions, dwell times, and temporary idling of machines.

Table 5.2: CONSTRUCTION SCENARIO DETAILS

Equipment Type	Equipment Quantity	Acoustic Usage %	Sound Power $L_{Aeq,15minute}$ dB
Dozer	1	70	107
Articulated truck	4	70	114
Grader	1	70	107
Water cart	1	70	100
Bobcat	1	70	103
Excavator – 30t	1	100	104
Compactor – small	1	70	108
Compactor - large	1	70	113
Roller - large	1	70	110
Crane	1	70	109

To account for noise that may be generated concurrently by the mining operations, model predictions for the construction scenario were logarithmically added to the predicted 2024 noise levels to obtain a cumulative noise level including both operational and construction noise.

Construction activities associated with the fauna movement crossing are not predicted to increase noise over and above the noise generated by the open cut mining operation. Compliance is predicted with construction noise criteria prescribed in SSD 09_0182 and detailed in Section 3.3 of this report.

5.8 Fauna Crossing Noise Assessment

Assessment of any change in noise emission due to potential increased height to the haul road incorporating the fauna movement crossing was undertaken by modelling a 15 m change in haul road height for a section of approximately 200 m between the mining area and the MIA. Haul route strings along this path were modelled with and without the change in landform change to assess if there would be any noise impact due to mining equipment passing over fauna movement crossing.

Predicted noise levels due to the addition of the fauna movement crossing showed a negligible increase in predicted noise levels.

Further modifying the landform height to construct the fauna movement crossing over the haul road should not change site noise emissions relative to the case where the height is not modified. That is, any predicted noise issues would likely result with or without the modified fauna movement crossing height increase.

5.9 Road Traffic Noise Assessment

Cardno Pty Ltd has undertaken a traffic and transport assessment (TTA) for MOD 8. Traffic volumes and distribution on the road network used for assessment of noise impact is based on data provided in the TTA.

The road traffic noise assessment in the 2010 NBIA considered 500 operational employees, however the current Social Impact Management Plan (SIMP) which has been submitted to the DPIE for approval (October 2020), identifies in June 2020 a workforce of approximately 750 personnel (including employees and contract workers) supported the BCM. The proposed MOD 8 workforce will be an average of 620 full time employees (FTE) from 2022 to 2039, with a peak number of 770 FTE in the Year 2025. Whilst this assessment has conservatively considered the traffic related impacts resulting from an increase in employment by 270 FTE, the actual impacts to traffic conditions will be negligible given the proposed minor increase to employees currently on site (i.e. only 20 FTE additional to those currently onsite).

Compared to the 2010 NBIA traffic volumes, an additional 404 daily trips are forecast to be generated by operational staff, with an additional 27 movements per day for consumables and deliveries, and an estimated construction workforce associated with the fauna crossings generating some 38 trips during the day.

Access to BCM is from the Kamilaroi Highway via the former Haul Road that runs between the mine site and the former rail load-out facility. Access is also possible via Leard Forest Road for vehicles travelling from the east, although this route is least desirable and all access is advertised to be from Kamilaroi Highway. The Kamilaroi Highway is characterised by high traffic flow volumes during the morning and afternoon peak periods, largely due to mining related traffic to and from other mines in the area and the main population centres. The Access Road is a local road servicing MCCP, BCM and mine-owned residences.

The nearest private receptor to the Access Road is Receptor 8, which is located approximately 2.8 km from the nearest section of the road. All other receptors in the vicinity of the Access Road are mine-owned. Road traffic noise levels from the Access Road are predicted to be below RNP criteria at the nearest privately owned receptors, and any change in road traffic noise levels along the Access Road resulting from traffic increases due to MOD 8 would not be measurable or perceptible.

Relative increases in $L_{Aeq,24hour}$ and peak traffic $L_{Aeq,1hour}$ noise levels due to MOD 8 on the Kamilaroi Highway were assessed and predicted to be less than 2 dB. As noted in the RNP, an increase of up to 2 dB represents a minor impact that is considered barely perceptible to the average person. The change in road traffic noise levels along the Kamilaroi Highway resulting from traffic increases due to MOD 8 would not be measurable or perceptible.

6 BLASTING ASSESSMENT

Blasting at BCM is undertaken in accordance with the approved BCM Blast Management Plan (BMP). The BMP details management and mitigation measures associated with blasting, and describes procedures for evaluating and monitoring blast impacts.

BCM has contemporary blast design and management procedures in place that are consistent with industry best practice. Detailed design is undertaken for all blasts to ensure compliance with relevant project approval criteria.

No change is proposed to current blast practices at BCM as a result of MOD 8. Blasting will remain within the currently approved Mine Disturbance Boundary, the only change being a requirement to blast deeper strata than previously considered.

Blasting has been undertaken successfully in the previously approved mining areas in the past, and any reoccurring blasting in these areas should result in similar outcomes. Mining deeper strata than previously undertaken should not cause any meaningful change to blast impacts.

In the last 5 years, 7 blasting complaints have been received at BCM. The following is a summary of each complaint and the action taken by BCM:

- 2015 – A complaint was received in relation to blast fumes. BCM provided a response to the EPA as nil fumes were produced by the blast in question. No further action was required;
- 2016 – 2 complaints were received in relation to blast events. Blast events were compliant and the results were provided to the complainant;
- 2017 – 2 complaints about a blast event that occurred March 2017. BCM provided the EPA with requested information and events were compliant. A 3rd complaint was received about blast events that occurred March and September 2017. BCM provided the EPA with requested information; and
- 2018 – A complaint about a blast event that occurred May 2018. BCM provided the EPA with requested information.

Continued implementation of design, management and monitoring protocols outlined in the BMP should ensure ongoing compliance with approved blasting criteria.

7 NOISE MANAGEMENT

Procedures for management and monitoring noise are outlined in the Boggabri Noise Management Plan (NMP). Proactive noise mitigation measures are detailed in Table 5.2 of the NMP, with the intent to minimise operational, low frequency and rail noise. BCM operates a real-time noise monitoring and management system on site that, in the event of elevated noise levels, triggers an investigation and action based risk response matrix, which guides the implementation of reactive noise mitigation measures.

The NMP will be updated to reflect any changes to the relevant conditions resulting from this application, and will include updated management measures if required to ensure all commitments are implemented, and monitoring is undertaken as required to maintain compliance with approved noise criteria. Throughout the life of the mine, alternative noise controls and management strategies may be implemented to ensure ongoing compliance with approved noise criteria.

8 CONCLUSION

This NBIA has considered potential noise and blasting impacts associated with BCM Modification 8, including operational noise, construction noise, modifying factor adjustments, sleep disturbance, road traffic noise, rail noise and blasting. The assessment was appropriately completed in accordance with relevant NSW guidelines and policies, including the NPfI. Importantly, noise modelling for this NBIA adopted measured sound powers of the current mining fleet, as opposed to anticipated sound powers previously adopted in the 2010 NBIA.

Operational noise levels at two receptors are predicted to exceed intrusive noise criteria by 1 dB during the night period of 2024. Exceedances of 0-2 dB are considered negligible in accordance with the VLAMP, as increased noise levels of this magnitude would not be discernible to the average listener and do not warrant receiver based treatments or controls.

No exceedances are predicted for any other receptors for either of the two modelled stages. Key factors contributing to predicted ongoing noise compliance include a shift in mining operations further north and west, which is away from the primary private receptor areas, and, deeper mining which has the effect of providing increased topographical shielding for a significant proportion of the fleet.

No exceedances of relevant noise criteria at private receptors are predicted due to the construction of the fauna movement crossing, with the exception of the two receptors with minor 1 dB exceedances predicted. However, any predicted noise issues would likely result with or without the modified fauna movement crossing height increase.

Continued implementation of blast design, management and monitoring protocols outlined in the BCM BMP should ensure ongoing compliance with approved blasting criteria.

BCM has demonstrated ongoing compliance with approved noise and blasting criteria prescribed in SSD 09_0182 for the last 5 years. This noise and blasting impact assessment demonstrates that BCM should be able to continue to operate at the production rate assessed herein whilst maintaining compliance with approved noise and blasting criteria set out in SSD 09_0182, with the exception of the 1 dB exceedances detailed above that are considered negligible in accordance with the VLAMP.

There is no meaningful change to the zone of noise impact predicted for future operations, despite adoption of generally higher sound power levels than assumed for the 2010 NBIA. On this basis, it is considered reasonable that BCM should be able to operate a mining fleet with sound power levels consistent with those applied to this NBIA, which are based on un-attenuated equipment. It is recommended that Conditions 9 and 10 of SSD 09_0182 be removed or reworded to reflect this.

Global Acoustics Pty Ltd

9 REFERENCES

NSW Environment Protection Authority, 2000. *NSW Industrial Noise Policy*. Sydney: NSW Environment Protection Authority.

NSW Environment Protection Authority, 2017. *NSW Noise Policy for Industry*. Sydney: NSW Environment Protection Authority.

Department of Environment, Climate Change and Water, 2011. *NSW Road Noise Policy*. Sydney: NSW Environment Protection Authority.

Department of Environment and Climate Change, 2009. *Interim Construction Noise Guideline*. Sydney: NSW Environment Protection Authority.

NSW Environment Protection Authority, 2013. *Rail Infrastructure Noise Guideline*. Sydney: NSW Environment Protection Authority.

NSW Government, 2018. *Draft Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Developments.*

Bridges Acoustics, 2010. *Continuation of Boggabri Coal Mine Acoustic Impact Assessment.*

Wilkinson Murray, 2019. *Tarrawonga Coal Mine, Life of Mine Modification Noise Assessment.*

Bridges Acoustics, 2011. *Maules Creek Coal Project Acoustics Impact Assessment.*

Appendix

A OPERATIONAL NOISE RESULTS

Table A.1 presents operational noise predictions for all assessed receptors for each stage (2024 and 2029). Predictions are presented for both neutral atmospheric conditions and noise enhancing (prevailing) meteorological conditions.

Table A.1: OPERATIONAL NOISE PREDICTIONS- $L_{Aeq,15minute}$ dB

Receptor ID	Intrusive Noise Criteria			2024 Neutral Conditions			2024 Prevailing Conditions			2029 Neutral Conditions			2029 Prevailing Conditions		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
2	35	35	35	15	15	15	28	30	30	12	12	12	27	29	29
3	35	35	35	15	15	15	29	30	31	13	13	13	28	30	30
4	35	35	35	18	18	18	31	32	33	18	18	18	30	32	32
5	35	35	35	20	20	20	32	33	34	20	20	20	31	32	33
8	35	35	35	22	22	22	35	35	36	21	21	21	34	35	35
44^	35^	37^	37^	26	26	26	26	36	37	26	26	26	26	35	36
48^	36^	38^	38^	27	27	27	27	37	39	26	26	26	26	37	38
90^	35^	36^	36^	24	24	24	24	35	36	23	23	23	23	34	35
114	35	35	35	14	14	14	14	28	28	12	12	12	12	26	27
115	35	35	35	22	22	22	22	31	32	20	20	20	21	30	32
140	35	35	35	14	14	14	29	10	32	11	11	11	22	7	25
147	35	35	35	20	20	20	29	17	33	13	13	13	27	9	31
158	35	35	35	25	25	25	25	35	36	23	23	23	23	34	35
164	35	35	35	14	14	14	31	31	31	10	10	10	29	29	29
165	35	35	35	17	17	17	33	34	34	13	13	13	32	32	33
165b	35	35	35	17	17	17	34	34	35	13	13	13	32	32	33
1	NA	NA	NA	17	17	17	36	37	38	16	16	16	35	36	37
18	NA	NA	NA	32	32	32	32	34	37	32	32	32	32	34	37
20	NA	NA	NA	45	45	45	49	42	48	45	45	45	49	42	48
23	NA	NA	NA	34	34	34	39	40	41	34	34	34	39	39	41
27	NA	NA	NA	38	38	38	40	40	43	38	38	38	40	40	43

Receptor ID	Intrusive Noise Criteria			2024 Neutral Conditions			2024 Prevailing Conditions			2029 Neutral Conditions			2029 Prevailing Conditions		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
32	NA	NA	NA	29	29	29	31	35	36	29	29	29	31	34	36
33	NA	NA	NA	22	22	22	23	34	35	20	20	20	22	33	34
35	NA	NA	NA	64	64	64	64	64	64	64	64	64	64	64	64
43	NA	NA	NA	28	28	28	28	37	38	27	27	27	28	36	38
52	NA	NA	NA	24	24	24	24	35	36	23	23	23	23	34	35
54	NA	NA	NA	26	26	26	26	36	39	27	27	27	27	35	38
63	NA	NA	NA	24	24	24	36	21	41	20	20	20	32	16	35
67	NA	NA	NA	24	24	24	41	20	41	19	19	19	38	15	38
68	NA	NA	NA	24	24	24	41	20	41	19	19	19	39	15	38
69	NA	NA	NA	23	23	23	38	20	37	18	18	18	37	15	35
79	NA	NA	NA	24	24	24	24	34	35	23	23	23	23	33	34
85	NA	NA	NA	21	21	21	21	27	37	19	19	19	19	20	35
86	NA	NA	NA	20	20	20	20	28	35	18	18	18	18	21	33
88	NA	NA	NA	19	19	19	19	25	34	16	16	16	16	15	32
94	NA	NA	NA	23	23	23	23	33	33	20	20	20	20	30	32
98	NA	NA	NA	20	20	20	22	18	35	14	14	14	21	12	34
100	NA	NA	NA	19	19	19	22	16	33	13	13	13	21	10	32
159	NA	NA	NA	19	19	19	19	18	34	14	14	14	14	12	32
174	NA	NA	NA	17	17	17	34	35	36	16	16	16	34	34	35
175	NA	NA	NA	17	17	17	17	30	30	14	14	14	14	29	29
176	NA	NA	NA	52	52	52	54	54	54	52	52	52	54	54	54
177	NA	NA	NA	35	35	35	35	44	45	34	34	34	34	44	45

Receptor ID	Intrusive Noise Criteria			2024 Neutral Conditions			2024 Prevailing Conditions			2029 Neutral Conditions			2029 Prevailing Conditions		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
178	NA	NA	NA	44	44	44	44	52	53	44	44	44	44	52	52
179	NA	NA	NA	58	58	58	58	62	62	58	58	58	58	62	62
180	NA	NA	NA	22	22	22	25	21	37	18	18	18	24	16	34
181	NA	NA	NA	22	22	22	23	21	39	18	18	18	21	16	36
182	NA	NA	NA	22	22	22	25	20	37	17	17	17	23	15	35
183	NA	NA	NA	19	19	19	19	30	30	18	18	18	18	27	29
184	NA	NA	NA	18	18	18	18	28	30	15	15	15	15	25	28
185	NA	NA	NA	15	15	15	15	14	29	10	10	10	10	8	28
186	NA	NA	NA	18	18	18	33	28	34	14	14	14	31	22	31
187	NA	NA	NA	18	18	18	34	28	34	14	14	14	31	22	31
188	NA	NA	NA	16	16	16	33	31	33	12	12	12	29	26	30
189	NA	NA	NA	16	16	16	34	34	35	13	13	13	32	31	33
190	NA	NA	NA	17	17	17	33	32	33	13	13	13	28	27	29
191	NA	NA	NA	15	15	15	33	33	33	12	12	12	31	31	32
192	NA	NA	NA	15	15	15	32	32	33	12	12	12	31	30	31
193	NA	NA	NA	15	15	15	30	29	30	11	11	11	28	27	27
194	NA	NA	NA	13	13	13	30	30	31	10	10	10	29	29	29
GA0a	35	35	35	16	16	16	33	32	33	12	12	12	30	30	31
GA10	35	35	35	12	12	12	28	28	28	8	8	8	27	27	27
GA196	35	35	35	18	18	18	32	22	31	14	14	14	29	14	28
GA199	35	35	35	21	21	21	33	21	30	16	16	16	30	15	27
GA200a	35	35	35	12	12	12	29	29	29	9	9	9	27	27	27

Receptor ID	Intrusive Noise Criteria			2024 Neutral Conditions			2024 Prevailing Conditions			2029 Neutral Conditions			2029 Prevailing Conditions		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
GA200b	35	35	35	12	12	12	29	29	29	10	10	10	27	27	28
GA204	35	35	35	13	13	13	28	29	29	10	10	10	27	28	28
GA214	35	35	35	12	12	12	30	30	31	10	10	10	28	29	29
GA215	35	35	35	11	11	11	28	29	29	9	9	9	27	27	28
GA222	35	35	35	13	13	13	31	32	32	12	12	12	30	31	31
GA318	35	35	35	12	12	12	28	28	28	7	7	7	26	26	25
GA322	35	35	35	18	18	18	34	30	34	13	13	13	31	25	31
GA323	35	35	35	18	18	18	33	27	33	14	14	14	30	22	30
GA324	35	35	35	17	17	17	32	26	32	13	13	13	30	17	30
GA326	35	35	35	19	19	19	33	27	33	14	14	14	30	19	30
GA327	35	35	35	17	17	17	32	26	32	13	13	13	30	17	30
GA33a	35	35	35	14	14	14	30	31	31	9	9	9	28	28	29
GA33b	35	35	35	14	14	14	31	31	31	9	9	9	29	29	29
GA349	35	35	35	11	11	11	27	28	28	9	9	9	26	27	27
GA35	35	35	35	14	14	14	31	31	31	10	10	10	29	29	29
GA350	35	35	35	11	11	11	28	29	29	9	9	9	26	27	27
GA351	35	35	35	11	11	11	28	29	29	9	9	9	26	27	27
GA37	35	35	35	16	16	16	30	30	30	11	11	11	27	27	27
GA38	35	35	35	15	15	15	30	30	30	11	11	11	27	27	27
GA39	35	35	35	13	13	13	30	30	30	9	9	9	28	28	28
GA42	35	35	35	15	15	15	30	30	31	10	10	10	28	28	28
GA43	35	35	35	14	14	14	31	31	31	10	10	10	29	29	29

Receptor ID	Intrusive Noise Criteria			2024 Neutral Conditions			2024 Prevailing Conditions			2029 Neutral Conditions			2029 Prevailing Conditions		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
GA44	35	35	35	14	14	14	31	31	31	10	10	10	29	29	29
GA50	35	35	35	15	15	15	31	31	32	11	11	11	29	29	29
GA52a	35	35	35	17	17	17	31	31	31	12	12	12	29	29	29
GA52b	35	35	35	13	13	13	30	30	30	10	10	10	28	28	28
GA67	35	35	35	16	16	16	33	32	33	12	12	12	30	30	31
GA68	35	35	35	16	16	16	32	32	33	12	12	12	30	30	31
GA74	35	35	35	15	15	15	32	31	32	12	12	12	29	28	29
GA77	35	35	35	16	16	16	33	32	33	12	12	12	31	30	31
GA78	35	35	35	14	14	14	31	31	31	11	11	11	29	28	29
GA83	35	35	35	16	16	16	34	33	34	13	13	13	31	30	32
GA89a	35	35	35	16	16	16	33	32	33	13	13	13	30	29	31
GA89b	35	35	35	15	15	15	32	31	33	13	13	13	30	29	30
GA94	35	35	35	17	17	17	34	31	34	13	13	13	31	29	32
GA97a	35	35	35	12	12	12	28	29	29	9	9	9	26	27	27
GA97b	35	35	35	12	12	12	28	29	29	9	9	9	26	27	27
GA98	35	35	35	10	10	10	28	29	29	8	8	8	26	26	27
R1	35	35	35	11	11	11	21	29	29	10	10	10	20	28	28
R19	35	35	35	22	22	22	22	30	31	20	20	20	20	29	29
R2	35	35	35	16	16	16	16	28	28	13	13	13	14	27	27
R23	35	35	35	22	22	22	22	30	31	20	20	20	20	29	29
R37	35	35	35	14	14	14	17	12	27	8	8	8	16	5	26
R38	35	35	35	15	15	15	26	11	29	9	9	9	24	5	27

Receptor ID	Intrusive Noise Criteria			2024 Neutral Conditions			2024 Prevailing Conditions			2029 Neutral Conditions			2029 Prevailing Conditions		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
R39	35	35	35	15	15	15	29	10	30	10	10	10	26	5	28
R4	35	35	35	22	22	22	22	29	31	22	22	22	22	29	30
R40	35	35	35	17	17	17	24	11	24	12	12	12	20	8	20
R41	35	35	35	17	17	17	27	12	27	13	13	13	25	9	25
R49	35	35	35	16	16	16	34	33	34	13	13	13	31	30	32
R5	35	35	35	19	19	19	19	28	30	19	19	19	19	27	29
R56	35	35	35	14	14	14	29	29	29	11	11	11	27	27	27
R61	35	35	35	12	12	12	28	29	30	8	8	8	25	25	26
R62	35	35	35	12	12	12	29	29	29	10	10	10	26	27	28
R63	35	35	35	16	16	16	32	33	33	15	15	15	31	32	32
R64	35	35	35	17	17	17	33	34	35	16	16	16	32	33	34
R68	35	35	35	21	21	21	21	32	33	18	18	18	18	30	31
R7	35	35	35	14	14	14	14	25	26	12	12	12	12	24	25
R70	35	35	35	19	19	19	34	14	34	14	14	14	31	9	32
R8	35	35	35	20	20	20	20	30	31	19	19	19	19	30	30
R9	35	35	35	19	19	19	19	29	30	19	19	19	19	29	30

Notes:

1. *"NA" denotes criteria not applicable as property is owned by BCM or a neighbouring mine; and*
2. *^ indicates receptor entitled to acquisition on request with BCM, and is compared against the maximum predicted levels in Table 2 within Condition 4 of Schedule 3 of SSD 09_0182.*

APPENDIX

B MODELLED SOURCE LOCATIONS

The mining stage plans modelled included open cut mining equipment, CHPP infrastructure and rail spur operation from BCM to the Werris Creek to Mungindi rail line.

Figure 10 shows an overview of the modelled source locations. Figure 11 and Figure 11 show indicative pit shell topography, modelled source locations and haul road alignments for the 2024 and 2029 stage plans respectively.

Figure 12 shows the modelled CHPP source arrangement.

Indicative open cut equipment locations are shown using identification tags located at the modelled equipment positions. Table 9.1 relates identification tags to equipment type.

Table 9.1: OPEN CUT EQUIPMENT INCLUDED IN MODELS

Identification Tag	Description
475	Komatsu 475A
375	Komatsu 375A
D11	Caterpillar D11T
WD900	Komatsu WD900
DRILL	Caterpillar Drill
6030	Caterpillar 6030
6060	Caterpillar 6060
EX2600	Hitachi EX2600
9400	Liebherr R9400
9800	Liebherr R9800
992	Caterpillar 992K
WA1200	KOM WA1200-6

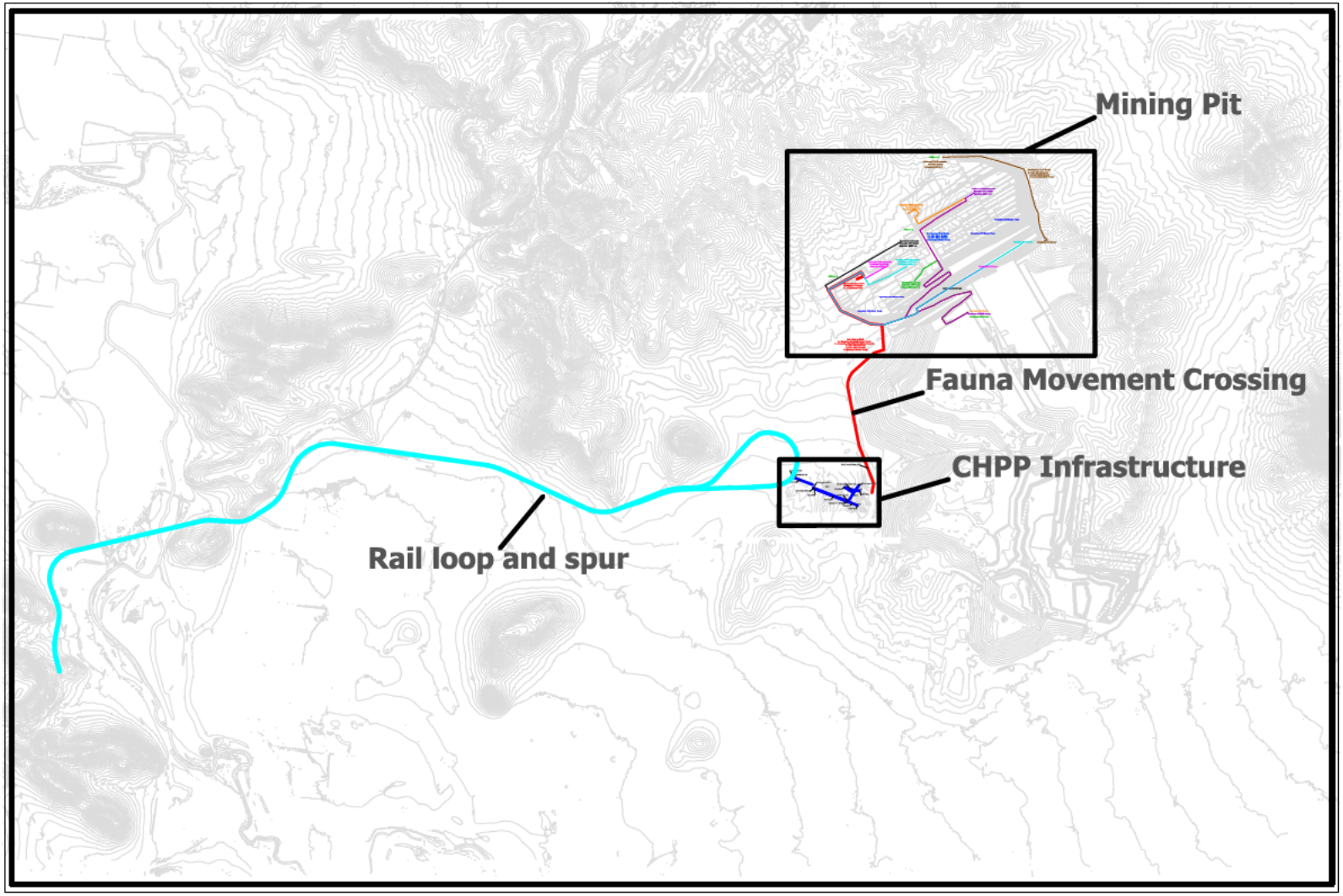


Figure 9 – Overview of Modelled Source Locations (2024 pit shell shown in this figure)

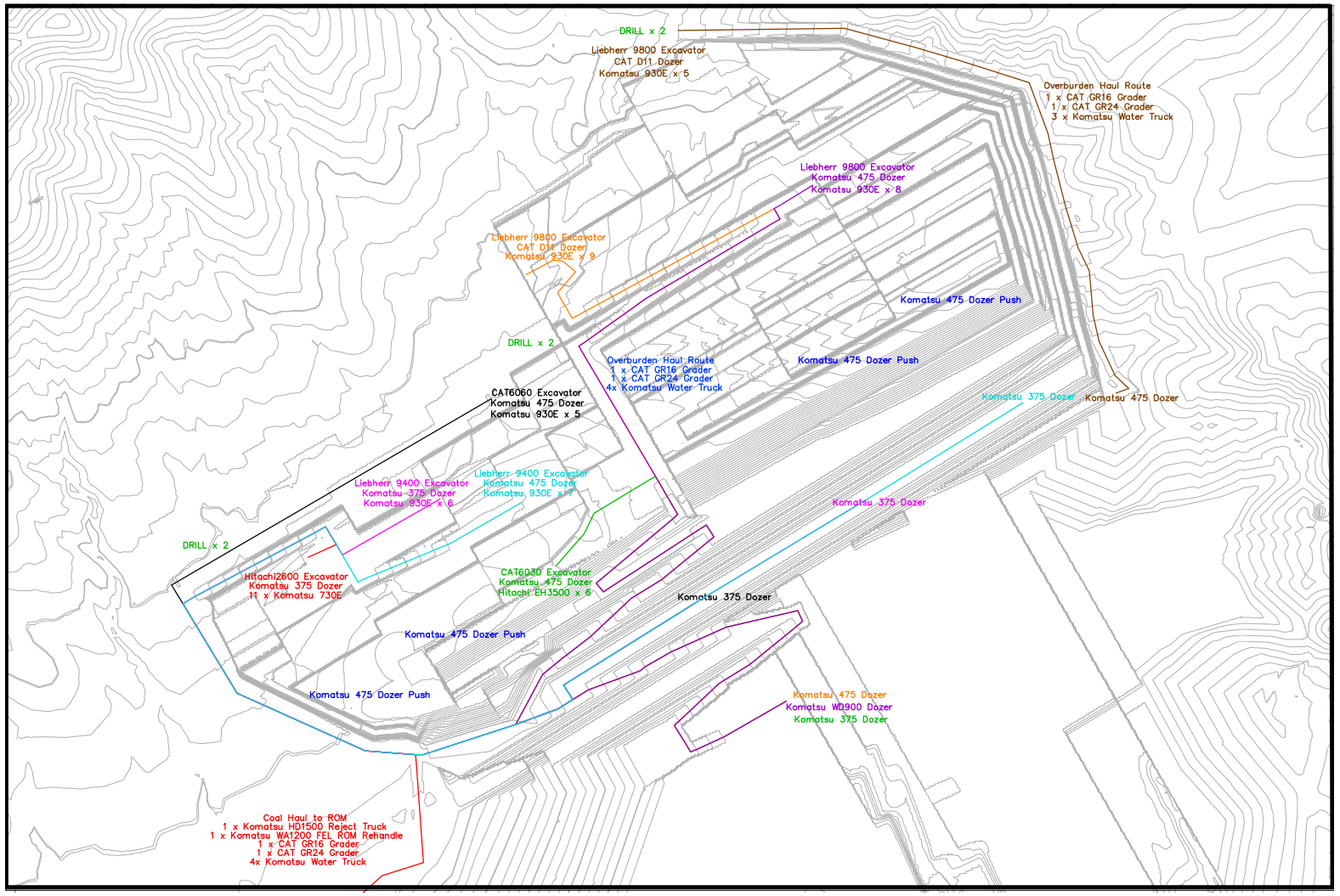


Figure 10 - 2024 Modelled Source Locations

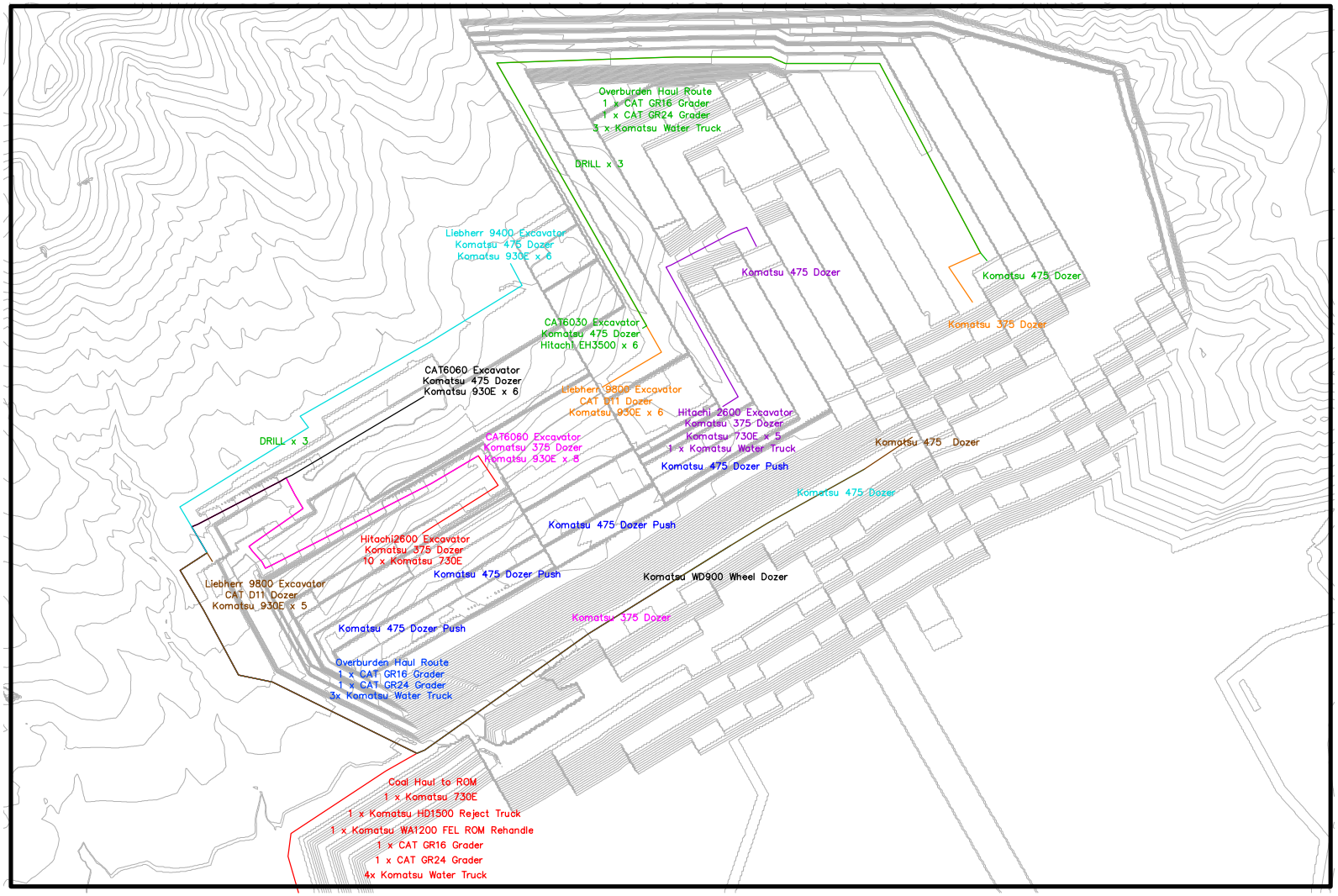


Figure 11 - 2029 Modelled Source Locations

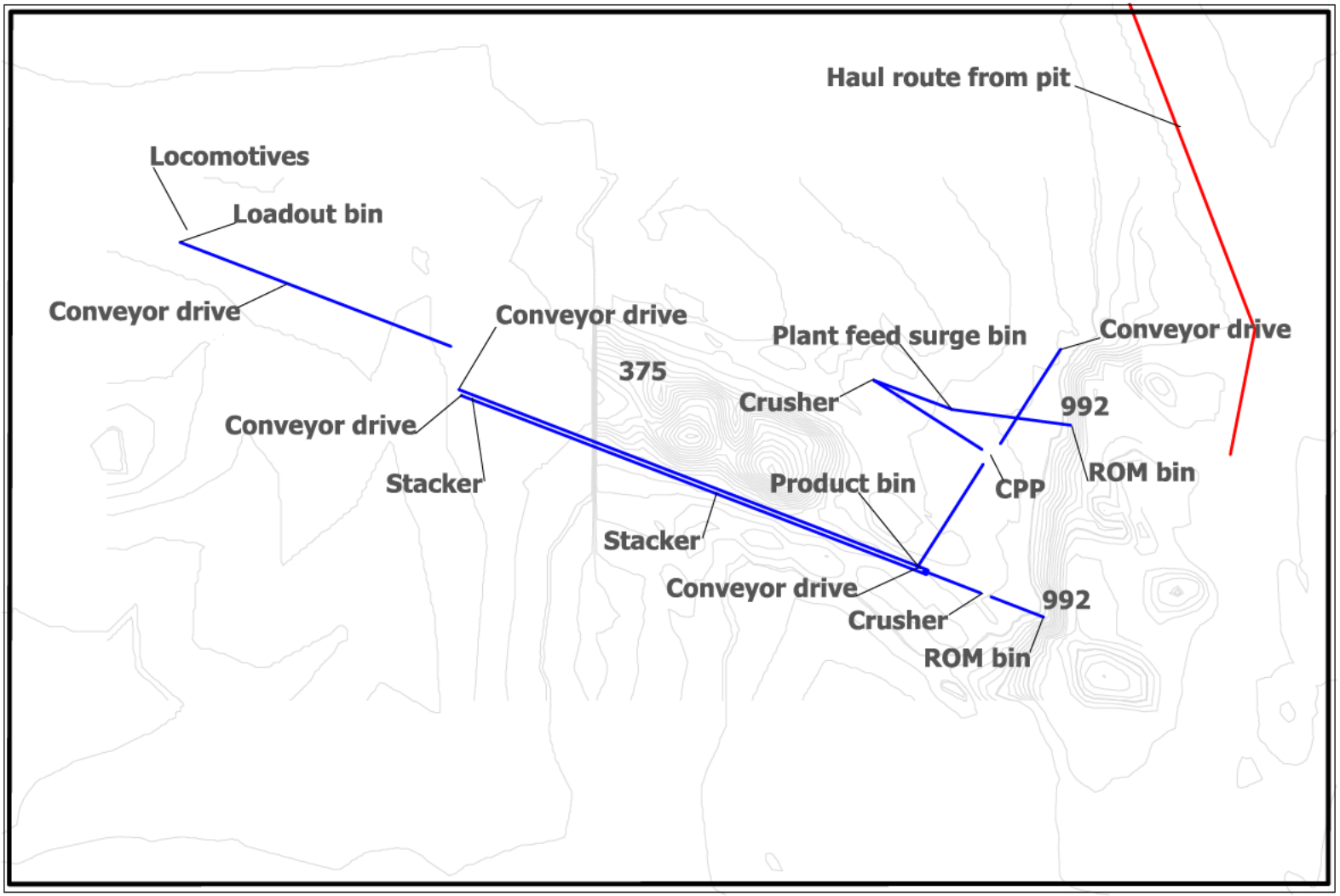
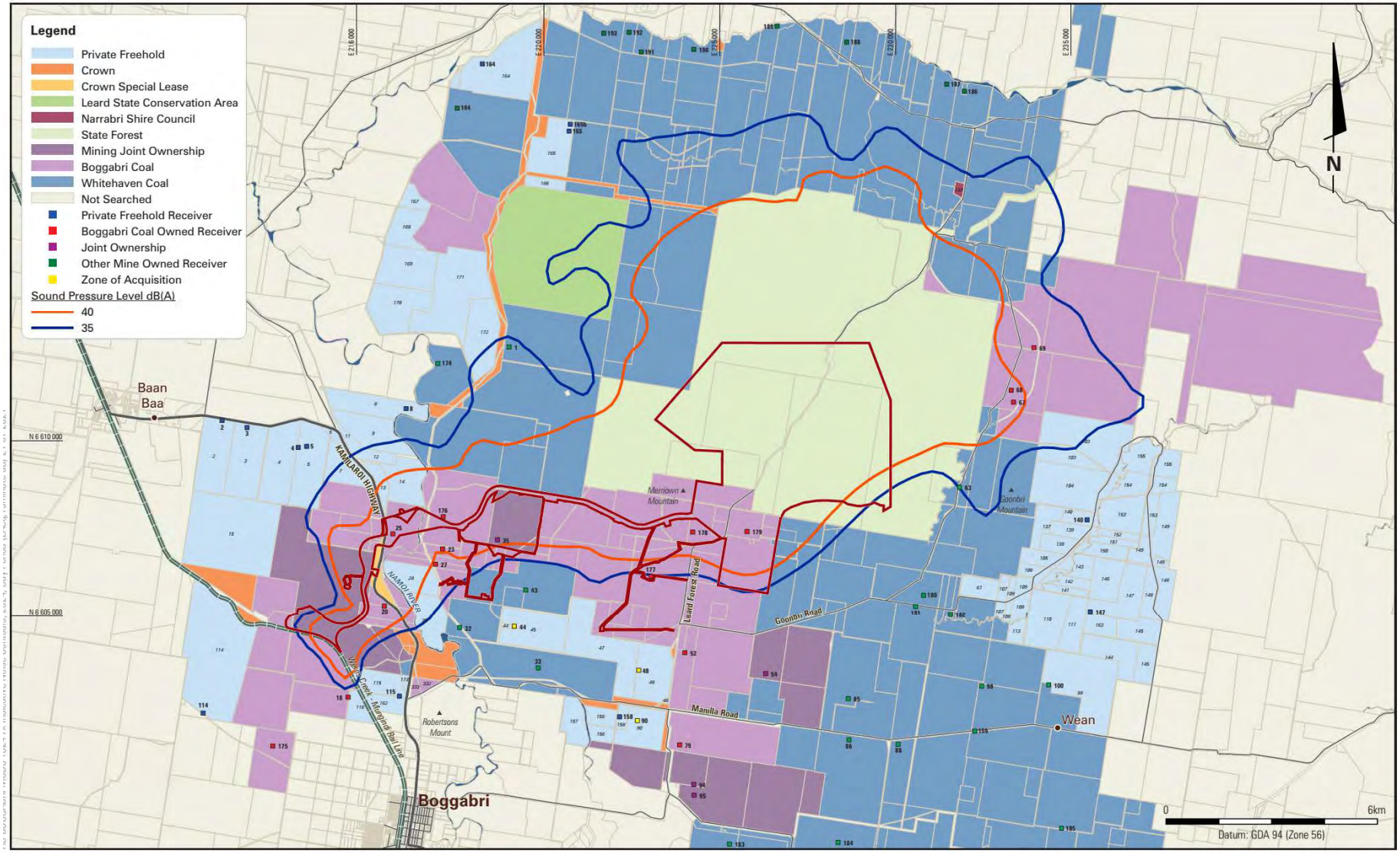


Figure 12 - CHPP Source Locations

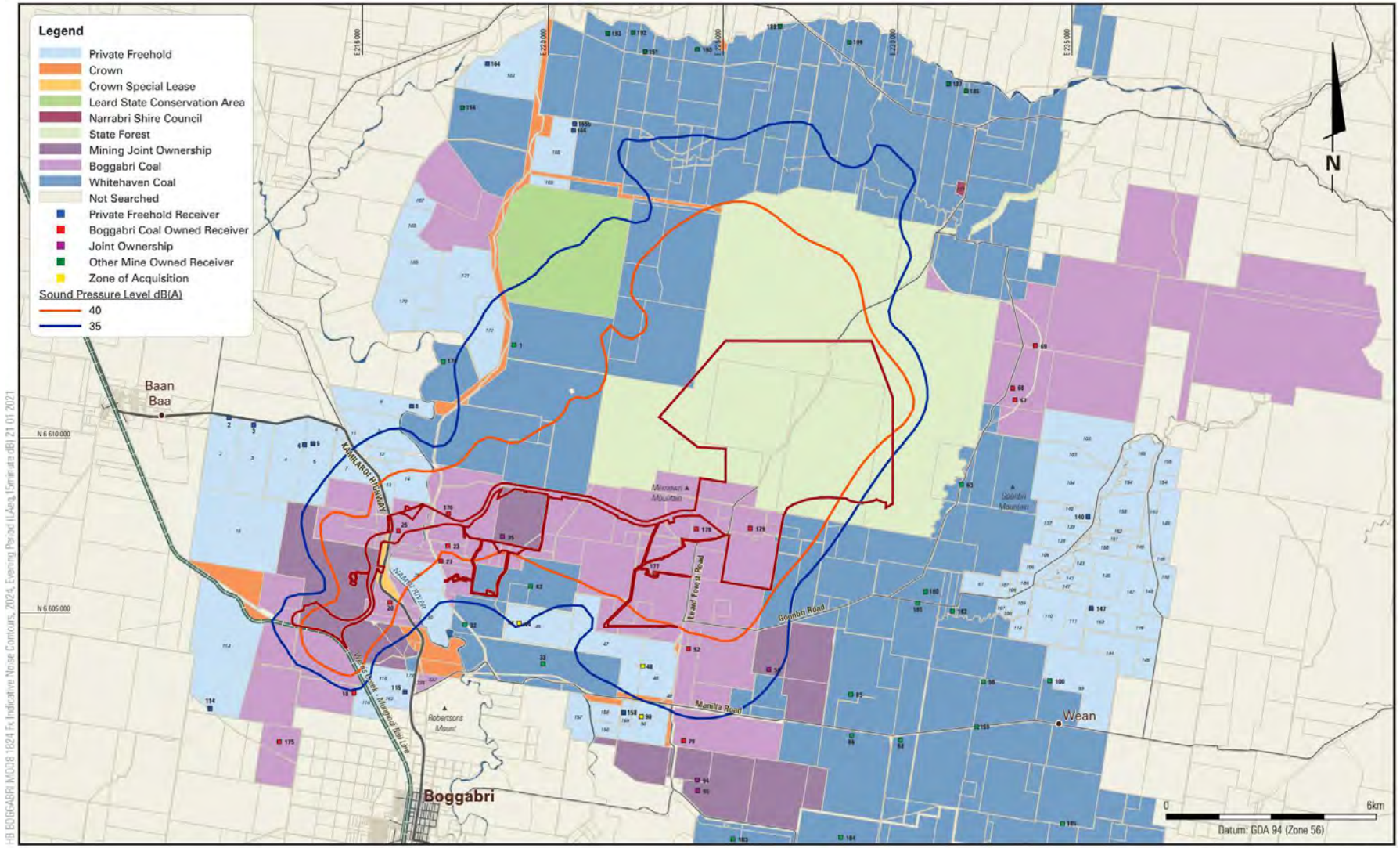
APPENDIX

C NOISE CONTOUR FIGURES



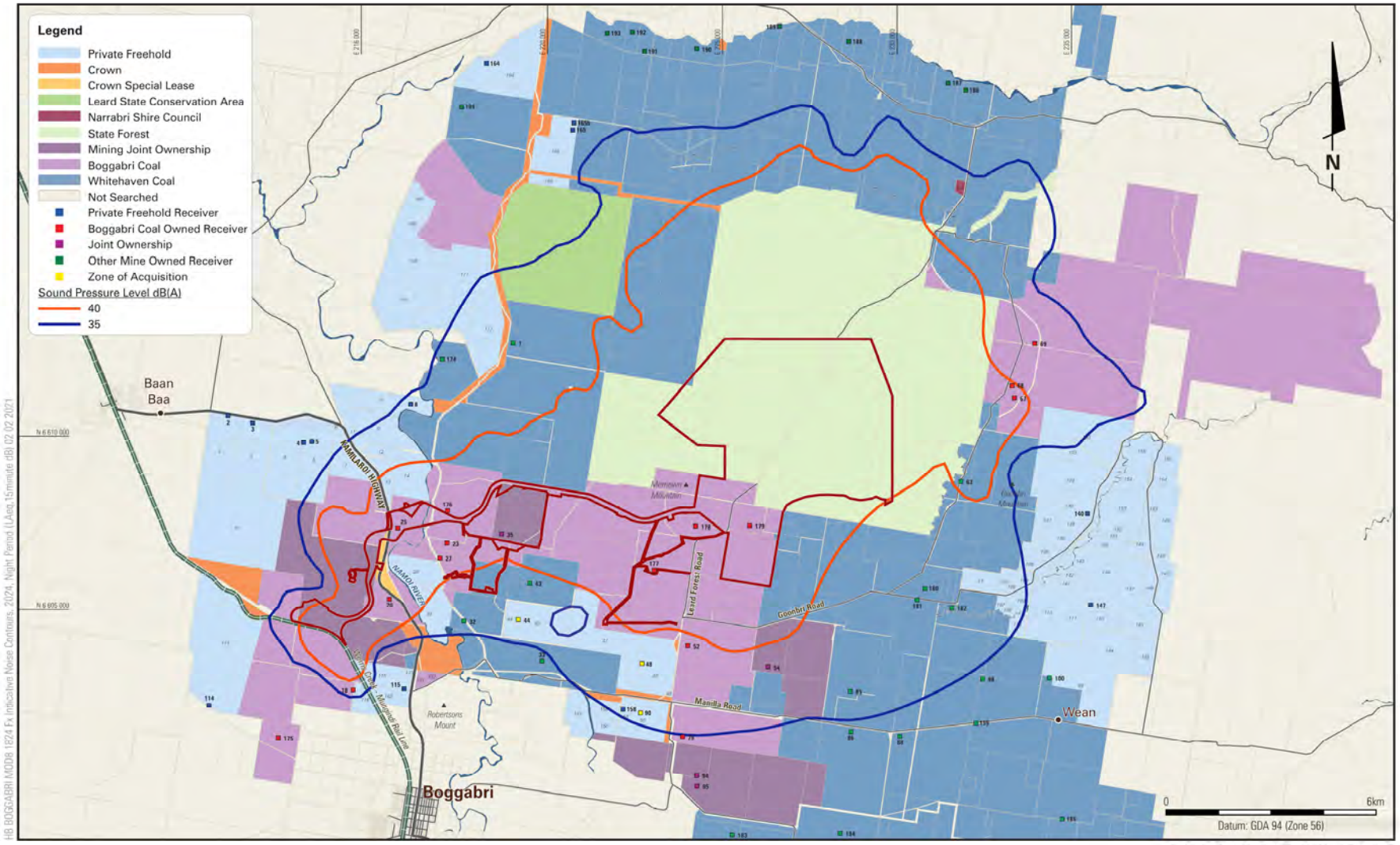
BOGGABRI COAL MINE

Indicative Noise Contours, 2024, Day Period (LAeq,15minute dB)



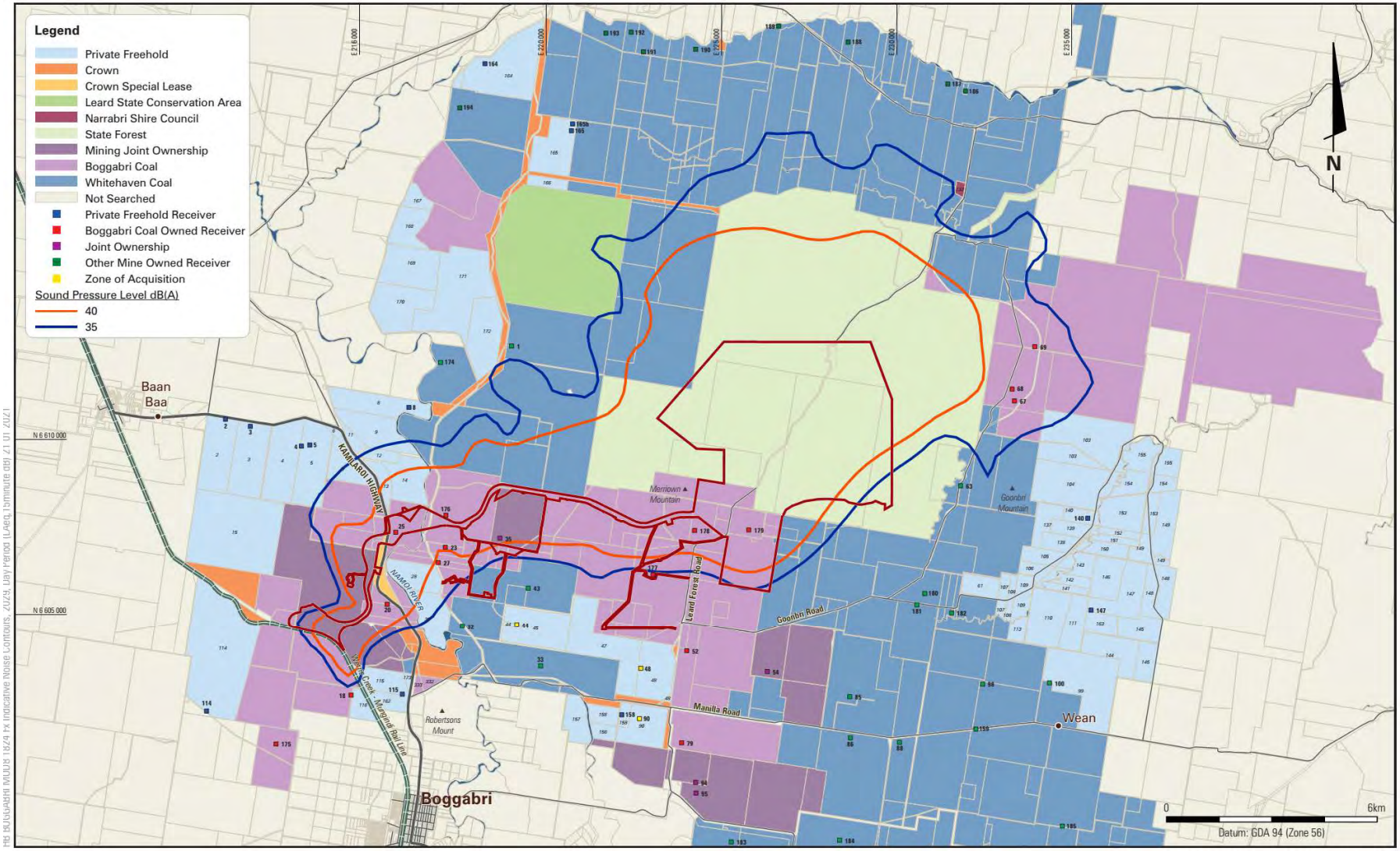
BOGGABRI COAL MINE

Indicative Noise Contours, 2024, Evening Period (LAeq,15minute dB)



BOGGABRI COAL MINE

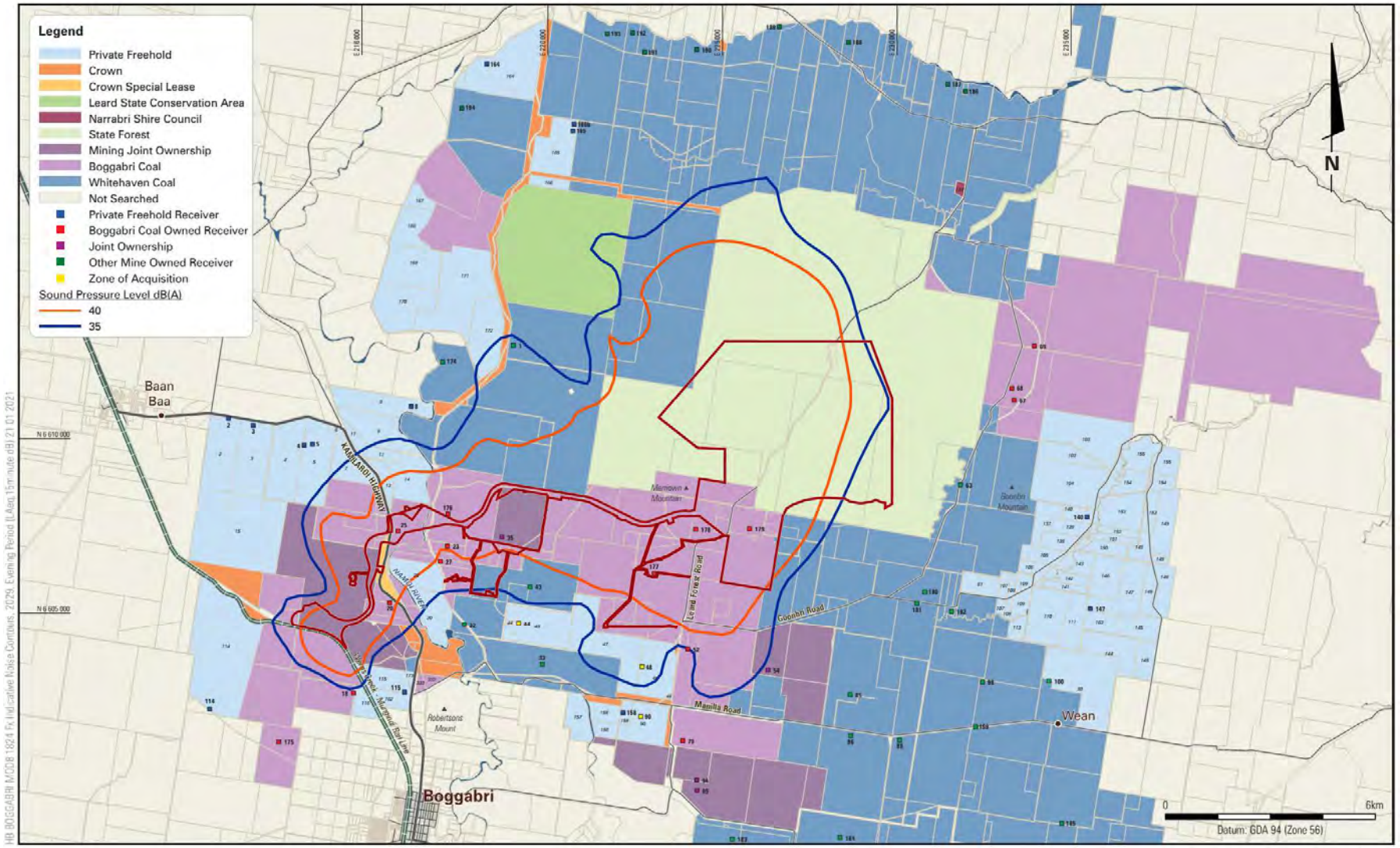
Indicative Noise Contours, 2024, Night Period (LAeq,15minute dB)



BOGGABRI COAL MINE

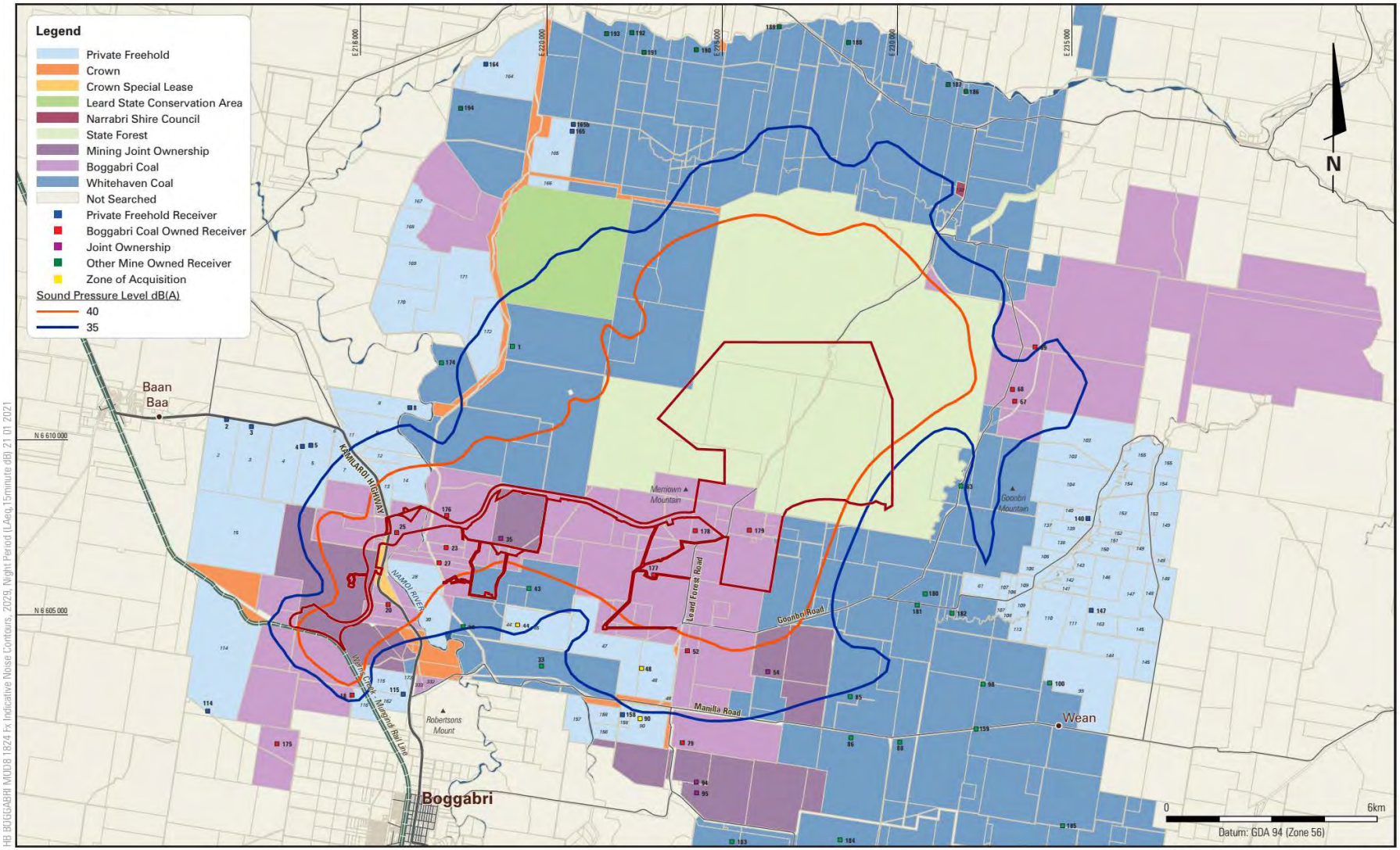
Indicative Noise Contours, 2029, Day Period (LAeq,15minute dB)

Global Acoustics Pty Ltd | PO Box 3115 | Thornton NSW 2322
Telephone +61 2 4966 4333 | Email global@globalacoustics.com.au
ABN 94 094 985 734



BOGGABRI COAL MINE

Indicative Noise Contours, 2029, Evening Period (LAeq,15minute dB)



BOGGABRI COAL MINE

Indicative Noise Contours, 2029, Night Period (LAeq,15minute dB)

APPENDIX

D MODELLED RECEPTOR LOCATIONS

Table D.1: MODELLED RECEPTOR LOCATIONS

			GDA94 / MGA56	
ID	**Owner**	**Parcel ID**	**Easting**	**Northing**
2	[redacted]	111//DP755470	210999	6610667
3	[redacted]	110//DP755470	211714	6610476
4	[redacted]	109//DP755470	213190	6609950
5	Unknown		213497	6610002
8	Unknown		216289	6611151
44	[redacted]	11//DP775513	219478	6604993
48	[redacted]	22//DP618032	223064	6603832
90	[redacted]	143//DP754926	222883	6602450
114	[redacted]	80//DP755475	210680	6602288
115	[redacted]	168//DP755475	216260	6602915
140	[redacted]	17//DP754953	235725	6608475
147	[redacted]	1//DP509031	235880	6605845
158	[redacted]	192//DP754926	222575	6602540
164	[redacted]	36//DP754948	218150	6621035
165	[redacted]	62//DP754948	220676	6619178
165b	Unknown		220735	6619347
1	Whitehaven owned previously owned by [redacted]	76//DP754948	219124	6612978
18	Boggabri Coal owned	153//DP755475	214795	6602850
20	Boggabri Coal owned	2//DP748046	215765	6605485
23	Boggabri Coal owned previously owned by [redacted]	1//DP754926	217375	6607145
27	Boggabri Coal owned previously owned by [redacted]	41//DP754926	217185	6606725
32	Whitehaven owned previously owned by [redacted]	1//DP1099042	217925	6604910
33	Whitehaven owned previously owned by [redacted]	1//DP1092050	220035	6603905
35	Mining Joint ownership previously owned by [redacted]	60//DP754948	215955	6607555
43	Whitehaven owned previously owned by [redacted]	1//DP509312	219777	6606049
52	Boggabri Coal owned previously owned by [redacted]	2//DP716002	224362	6604354
54	Mining Joint ownership previously owned by [redacted]	121//DP754926	226677	6603830
63	Whitehaven Coal owned	86//DP754953	232065	6609313

			GDA94 / MGA56	
ID	Owner	Parcel ID	Easting	Northing
67	Boggabri Coal owned previously owned by [redacted]	2//DP754927	233537	6611781
68	Boggabri Coal owned previously owned by [redacted]	3//DP754927	233465	6612117
69	Boggabri Coal owned previously owned by Bank of NSW	12//DP754927	234080	6613347
79	Boggabri Coal owned previously owned by [redacted]	132//DP754926	224280	6601740
85	Whitehaven owned previously owned by [redacted]	A//DP367991	229050	6603181
86	Whitehaven owned previously owned by [redacted]	2//DP1131282	229100	6602010
88	Whitehaven owned previously owned by [redacted]	1//DP1015921	230505	6601915
94	Mining Joint ownership previously owned by [redacted]	149//DP754926	224470	6600625
98	Whitehaven owned previously owned by [redacted]	65//DP754953	232846	6603640
100	Whitehaven owned previously owned by [redacted]	A//DP100331	234748	6603721
159	Whitehaven owned previously owned by [redacted]	62//DP754953	232690	6602345
174	Whitehaven Coal owned	822//DP1074515	217110	6612451
175	Boggabri Coal owned	125//DP755475	212690	6601405
176	Boggabri Coal owned	59//DP754948	217363	6608083
177	Boggabri Coal owned	8//DP754940	223335	6606537
178	Boggabri Coal owned	12//DP754940	224455	6607826
179	Boggabri Coal owned	279//DP1196626	225998	6607845
180	Whitehaven owned previously Joint Ownership	29//DP1192663	231122	6606201
181	Whitehaven owned previously Joint Ownership	33//DP754953	230902	6605865
182	Whitehaven owned previously Joint Ownership	106//DP754953	231910	6605660
183	Whitehaven Coal owned	147//DP754926	225485	6598915
184	Whitehaven Coal owned	1//DP1145592	228575	6598980
185	Whitehaven Coal owned	6//DP754951	234935	6599355
186	Whitehaven owned previously owned by [redacted]	120//DP808273	231905	6620615
187	Whitehaven Coal owned	87//DP754924	231400	6620800
188	Whitehaven Coal owned	12//DP754924	228775	6621810

			GDA94 / MGA56	
ID	Owner	Parcel ID	Easting	Northing
189	Whitehaven Coal owned	53//DP654577	226790	6622105
190	Whitehaven Coal owned	83//DP754948	224481	6621560
191	Whitehaven Coal owned	69//DP754948	222996	6621493
192	Whitehaven Coal owned	66//DP754948	222605	6622085
193	Whitehaven owned previously owned by [redacted]	64//DP754948	221830	6622115
194	Whitehaven owned previously owned by [redacted]	77//DP754948	217465	6619750
GA0a	Unknown		224928	6623048
GA10	Unknown		215382	6621673
GA196	Unknown		235916	6620541
GA199	Unknown		235087	6618265
GA200a	Unknown		213180	6617449
GA200b	Unknown		213196	6617379
GA204	Unknown		210762	6611895
GA214	Unknown		214173	6616450
GA215	Unknown		211730	6614981
GA222	Unknown		214838	6614287
GA318	Unknown		216279	6624843
GA322	Unknown		233750	6621019
GA323	Unknown		232409	6621120
GA324	Unknown		235116	6621068
GA326	Unknown		232772	6620873
GA327	Unknown		235066	6621059
GA33a	Unknown		218841	6622532
GA33b	Unknown		218907	6622400
GA349	Unknown		211546	6617052
GA35	Unknown		219598	6622663
GA350	Unknown		212951	6617838
GA351	Unknown		212011	6616553
GA37	Unknown		220641	6623080
GA38	Unknown		220703	6623068
GA39	Unknown		220726	6624448
GA42	Unknown		221047	6622982

			GDA94 / MGA56	
ID	Owner	Parcel ID	Easting	Northing
GA43	Unknown		221799	6623429
GA44	Unknown		221831	6623335
GA50	Unknown		224478	6624230
GA52a	Unknown		222177	6623274
GA52b	Unknown		222124	6624516
GA67	Unknown		224599	6623014
GA68	Unknown		224668	6623053
GA74	Unknown		225645	6624020
GA77	Unknown		224622	6622902
GA78	Unknown		225935	6624862
GA83	Unknown		226757	6622579
GA89a	Unknown		229100	6623372
GA89b	Unknown		229351	6623560
GA94	Unknown		230597	6621871
GA97a	Unknown		213499	6618139
GA97b	Unknown		213492	6618274
GA98	Unknown		214381	6618800
R1	Unknown	31//DP755525	209989	6606042
R19	Unknown	2//DP396475	221270	6599180
R2	Unknown	65//DP755530	209768	6602839
R23	Unknown	402//DP858087	223325	6599000
R37	Unknown	B//DP431899	238915	6599975
R38	Unknown	78//DP754953	239135	6603355
R39	Unknown	103//DP754953	238435	6607265
R4	Unknown	201//DP755475	216250	6601820
R40	Unknown	9//DP754927	239380	6610885
R41	Unknown	19//DP754927	238445	6611320
R49	Unknown	38//DP754925	226865	6622490
R5	Unknown	252//DP755475	216730	6602050
R56	Unknown	64//DP754948	220815	6622240
R61	Unknown	1//DP1175856	216975	6618965
R62	Unknown	1//DP1175679	214320	6617800
R63	Unknown	2//DP791323	215405	6613105
R64	Unknown	81//DP754948	216371	6613097
R68	Unknown	1//DP110400	218960	6602615
R7	Unknown	1//DP1105555	217920	6601930

			GDA94 / MGA56	
ID	**Owner**	**Parcel ID**	**Easting**	**Northing**
R70	Unknown	6//DP754927	237495	6610870
R8	Unknown	302//DP814632	219235	6600985
R9	Unknown	301//DP814632	219125	6600475