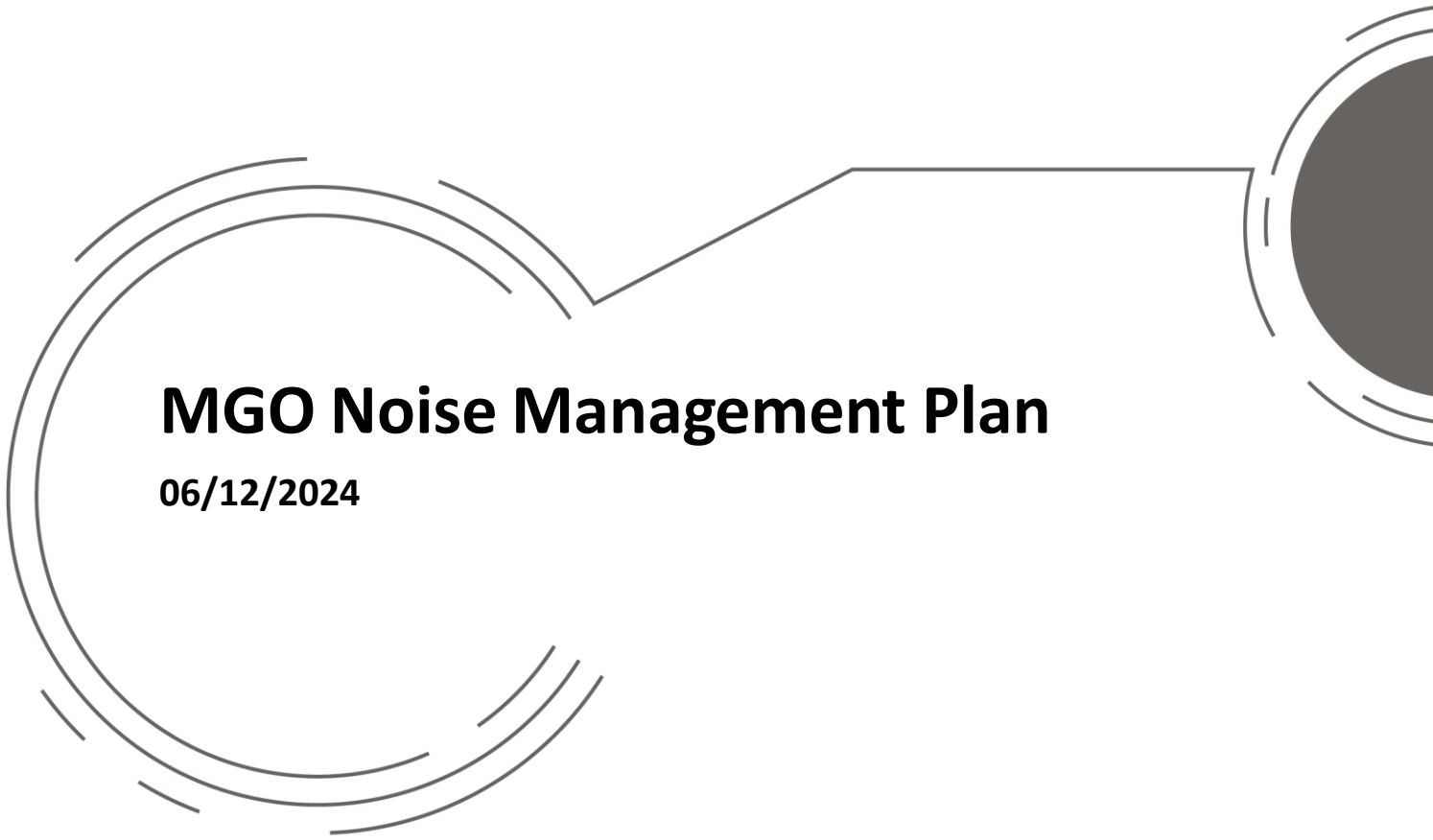


MGO
MT OWEN / GLENDELL

GLENCORE



MGO Noise Management Plan

06/12/2024

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1. Commitment and Policy

1.1 Background

This Noise Management Plan (NMP, the Plan) is one of a series of Environmental Management Plans that together form the Environmental Management Strategy (EMS) for Mount Owen Glendell Operations (MGO).

Mount Owen Glendell Operations (MGO) is located within New South Wales (NSW), approximately 20 kilometres north-west of Singleton. Mount Owen Pty Limited (Mt Owen), a subsidiary of Glencore Coal Pty Limited currently owns the three open cut operations in MGO, including:

- a) Mount Owen (North Pit), approved under Development Consent SSD-5850;
- b) Ravensworth East (Bayswater North Pit), approved under Development Consent SSD-5850; and
- c) Glendell Mine (Barrett Pit) approved under Development Consent DA 80/952.

Mount Owen Mine and Ravensworth East Mine collectively comprise the Mount Owen Continued Operations (MOCO). Mining operations at MGO include the integrated use of the Mount Owen Coal Handling and Preparation Plant (CHPP), coal stockpiles and rail load-out facility.

This Noise Management Plan (NMP) documents the procedures to minimise and manage noise emissions from MGO, incorporating MOCO SSD-5850 and Glendell (DA 80/952) as modified.

Seven modifications have been approved to Mount Owen SSD-5850, including:

- Modification 1 (MOCO MOD 1), to facilitate the construction of a water pipeline to convey mine water from Integra Underground Mine to MGO (Hansen Bailey 2017), which was granted on 15 September 2017;
- Modification 2 (MOCO MOD 2), to maximise reserve recovery within the Glencore mining tenements, whilst minimising the overall project disturbance area (Umwelt 2018a). MOCO MOD 2 was approved by the then NSW Department of Planning and Environment (DP&E) on 4 September 2019;
- Modification 3 (MOCO MOD 3), an administrative modification as approved by the then Department of Planning, Industry and Environment (DPIE) on 30 January 2020. There were no changes to statutory conditions associated with MOCO MOD 3;
- Modification 5 (MOCO MOD 5), as approved by the then DPIE on 15 January 2021 to amend the MGO Biodiversity Offset Strategy (Umwelt 2020a); and
- Modification 6 (MOCO MOD 6), as approved by the then DPIE on 3 June 2021. MOCO MOD 6 allows the construction and operation of an additional pipeline between MGO and Ravensworth Operations to transfer water under the already approved Greater Ravensworth Area Water and Tailings Sharing System (GRAWTS) (Umwelt 2020b).
- Modification 7 (MOCO MOD 7), as approved by the then DPE on 15 May 2023. MOCO MOD 7 allows for operational efficiencies between Liddell Coal Operations and MGO by facilitating more efficient water and tailings transfers. This would enable additional tailings emplacement within the South Cut Void at Liddell Coal Operations to minimise the overall size and depth of the final void, as well as minimise the need to establish additional tailings emplacement areas at Mount Owen and Ravensworth Operations.

- Modification 9 (MOCO MOD 9) approved by the Department of Planning, Housing and Industry (DPHI) on 21 August 2024 to make changes to minor errors within the consent and correct miscalculations in the offset areas.
- DA 80/952 has been modified four occasions, of which the following remain applicable: DA 80/952 has been modified on Glendell MOD2 was approved on 25 February 2008 and increased the production rate to 4.5 Mtpa of ROM coal and extended the period of mining until 30 June 2024;
- Glendell MOD3 was approved on 1 December 2016 and facilitated the realignment of a powerline; Glendell MOD 4 was approved by the then DPIE on 4 March 2020 for Glendell Mine. The modification allows for a minor extension to the approved pit shell in order to access an additional approximate 2.0 million tonnes run of mine (Mt ROM) coal from the Barrett Pit under the existing approval (Umwelt, 2018b); and; Glendell MOD5 was approved on 1 July 2024 and permits the carrying out of mining operations until the 30 June 2024 to enable recovery of the remaining coal reserves approved for mining in MOD 4.

This NMP has been updated in 2024 to incorporate the requirements of MOCO MOD 9 and Glendell MOD 5 and supersedes the previous version of the NMP.

1.2 Purpose

The purpose of this NMP is to describe the measures that have been implemented to manage noise emissions from operations at MGO against relevant regulatory criteria.

This Management Plan forms part of the MGO Environmental Management System (EMS) and should be read in conjunction with the MGO Environmental Management Strategy.

1.3 Scope

1.4 This NMP applies to all operational activities within MGO and addresses the relevant conditions of Development Consents SSD-5850 (Mount Owen Mine) and DA 80/952 (Glendell Mine) as well as the conditions of the site EPLs as detailed in *Appendix A.Objectives*

The objectives of this NMP are to:

- a) Describe the measures to be implemented so that compliance with relevant noise criteria is achieved;
- b) Describe the noise management system in detail; and
- c) Outline a monitoring program that:
 - i Evaluates and reports on the effectiveness of the noise management system;
 - ii Assists to calibrate the real time noise monitoring alarms to provide feedback and manage noise impacts from MGO;

- iii Validates the measurements from the real-time monitoring system against observations during attended noise monitoring; and
- iv Defines what constitutes a noise incident and a protocol for responding to such incidents.

1.5 Requirements of this NMP

1.5.1 Statutory Requirements

Development Consent(s)

Both the Mount Owen Mine (SSD-5850) and Glendell Mine (DA 80/952) development approvals (as modified) stipulate requirements related to this NMP.

A summary of these requirements and where they are addressed within this plan are presented in **Appendix A**.

Environmental Protection Licences

Activities at MGO are licenced through EPL 4460 and EPL 12840 for Mount Owen Mine and Glendell Mine operations, respectively. MGO surrendered Ravensworth East Mine EPL 10860 to EPA on 19 September 2019. Activities at Ravensworth East Mine are now captured under a consolidated EPL 4460.

Monitoring and reporting conditions are detailed in the respective EPL conditions. A summary of these requirements and where they are addressed within this plan are presented in **Appendix A**.

1.5.2 GCAA Requirements

The Glencore Coal Assets Australia (GCAA) **Noise Management Protocol** (GCAA-6235378177-10238) is an internal site document which identifies the minimum requirements for noise management across GCAA operations. The primary objectives for this protocol are targeted at achieving a consistent approach towards noise management in order to achieve compliance with regulatory standards, conditions and commitments. The protocol also aims to mitigate noise complaints from the surrounding community. The overall purpose of this protocol is to provide guidance and direction in regards to:

- Noise is effectively managed at GCAA operations;
- Noise management controls are identified and effective during the mine planning, assessment and operational phases;
- Minimum requirements for noise management are implemented to reduce the potential for impacts, including the implementation of activity specific noise controls and site-wide management systems and procedures;
- Automated systems for early identification of adverse meteorological conditions are in use to minimise noise impacts i.e. gradient winds and temperature inversions;
- Monitoring and reporting requirements are implemented for noise management at GCAA operations;
- Noise awareness training is implemented for employees to facilitate effective noise management; and

- Noise management is integrated into the entire life of mine, from mine planning to mine rehabilitation and closure.

The requirements of the GCAA **Noise Management Protocol** are detailed further in the sections below. Other internal technical instructions and procedures implemented at MGO are listed in **Section 9.2**¹. These documents are not made publicly available and are strictly for internal use by MGO personnel only.

1.6 Consultation

1.6.1 Consultation with Internal (MGO) Stakeholders

Internal communications are conducted in accordance with the **GCAA Internal Communication Standard (GCAA-625379177-10330)** and the MGO EMS. These documents provide a protocol for achieving effective and timely internal communication.

This NMP has been reviewed by members of the MGO Environment and Community (E&C) and comments addressed prior to submission. Details of Training and Communication arrangements are outlined in **Section 3.5**. Change history is further outlined in **Section 9.3**.

1.6.2 Consultation with External Stakeholders

The NMP was updated following approval of MOCO MOD 2 and submitted to the then DPIE (now DPPI) on 4 December 2019.

The approval of the plan by the then DPIE, however was put on hold in anticipation of impending approvals to Glendell MOD 4 and MOCO MOD3. Following the receipt of these approvals, the NMP was reviewed and updated with administrative changes only and therefore further consultation with external stakeholders was not considered necessary.

The revised NMP was submitted and approved by the then DPIE on 9 December 2020.

Further minor changes were made to the NMP following approval of MOCO MOD 6 3 June 2021. This revision was approved by the then DPIE on 11 June 2021.

This documents was updated following approvals of MOCO Mod7 in May 2023, but as the changes were minor or administrative in nature, no further consultation was made in accordance with Schedule 2 condition 18 of SSD-5850 (MOD7).

Consultation regarding the current updates is presented in **Appendix B**.

A copy of the most recent NMP approval is presented in **Appendix C**.

1.7 Baseline Data

Baseline data for MGO is detailed in the following documents:

- Mount Owen Operations Environmental Impact Statement (EIS), Umwelt (Australia) Pty Limited, 2003;
- Environmental Assessment for Modification of Glendell, Umwelt (Australia) Pty Limited, 2007;

¹ Internal procedures have not been reviewed or endorsed by DPPI. It is the responsibility of MGO to facilitate the implementation of site procedures and align them with this management plan and conditions of consent.

- EIS, Mount Owen Continued Operations (MOCO) Project, Umwelt (Australia) Pty Limited, 2015;
- Statement of Environmental Effects (SEE), MOCO Project Modification 2 (MOD 2), Umwelt (Australia) Pty Limited, 2018; and
- Glendell Mine Modification 4 Statement of Environmental Effects, Umwelt (Australia) Pty Limited, 2018b.
- Glendell Mine Modification 5, Modification Report, James Bailey & Associates, 2023

Baseline data contained in these documents includes:

- Information on the background noise environment surrounding MGO operations;
- Information of prevailing meteorological conditions for the region surrounding MGO;
- Land ownership and the location of noise sensitive receivers at the time each report was published;
- Indicative equipment numbers and sound power levels;
- Representative mine plans for each stage of the Mount Owen and Glendell mines; and
- Statements of commitments regarding noise management.

An assessment of the existing background noise environment in the area surrounding MGO was performed in 2013 for the MOCO EIS (2015) (refer to **Figure 1.1**). This assessment included a number of locations not normally included within MGO usual suite of noise monitoring locations.

The results from the background noise monitoring program (2013) presented in **Table 1-1** show that the measured rating background noise levels (RBL) in the rural areas surrounding the Project Area are between less than 30 to 35 dB(A) during the day-time, less than 30 to 36 dB(A) during the evening and less than 30 to 34 dB(A) during the night-time. Monitoring in Camberwell village and in proximity to the New England Highway show the influence of road traffic noise on the New England Highway with the RBLs ranging from 36 to 45 dB(A) depending on the time of day and proximity to the highway.

Table 1-1 Baseline Data, dB(A)

Monitoring Location	Time Period	RBL ¹
Sx1 (Old Location)– Sentinelx 1 Middle Falbrook	Day	30 (29.7)
	Evening	33
	Night	31
Sx4 – Sentinelx 4 Glennies Creek	Day	34
	Evening	35
	Night	34
Sx5 (Old Location)– Sentinelx 5 Falbrook	Day	30 (27.9)
	Evening	30 (28.0)
	Night	30 (28.2)
Sx11 (decommissioned) – Sentinelx 11 Central Camberwell Village	Day	45
	Evening	42
	Night	38

Monitoring Location	Time Period	RBL ¹
Sx12 (Old Location)– Sentinex 12 Northern Camberwell Village	Day	36
	Evening	39
	Night	37
Sx37 (decommissioned) – Sentinex 37 Hebden Road	Day	30 (26.0)
	Evening	30 (29.0)
	Night	30 (29.2)
C1 – Receiver R013	Day	30
	Evening	34
	Night	32
C2 – Receiver R010	Day	35
	Evening	32
	Night	31
C3 – Receiver R007	Day	33
	Evening	36
	Night	33
C4 – Receiver R091	Day	30 (27.3)
	Evening	32
	Night	30 (29.5)
C5 – Receiver R095	Day	32
	Evening	35
	Night	34
C6 – Receiver R017	Day	30 (28.5)
	Evening	30 (27.4)
	Night	30 (27.8)

Note

¹ Where the RBL is less than 30 dB(A) the RBL is set at 30 dB(A). The values in the parentheses are the actual RBL determined from the monitoring data.

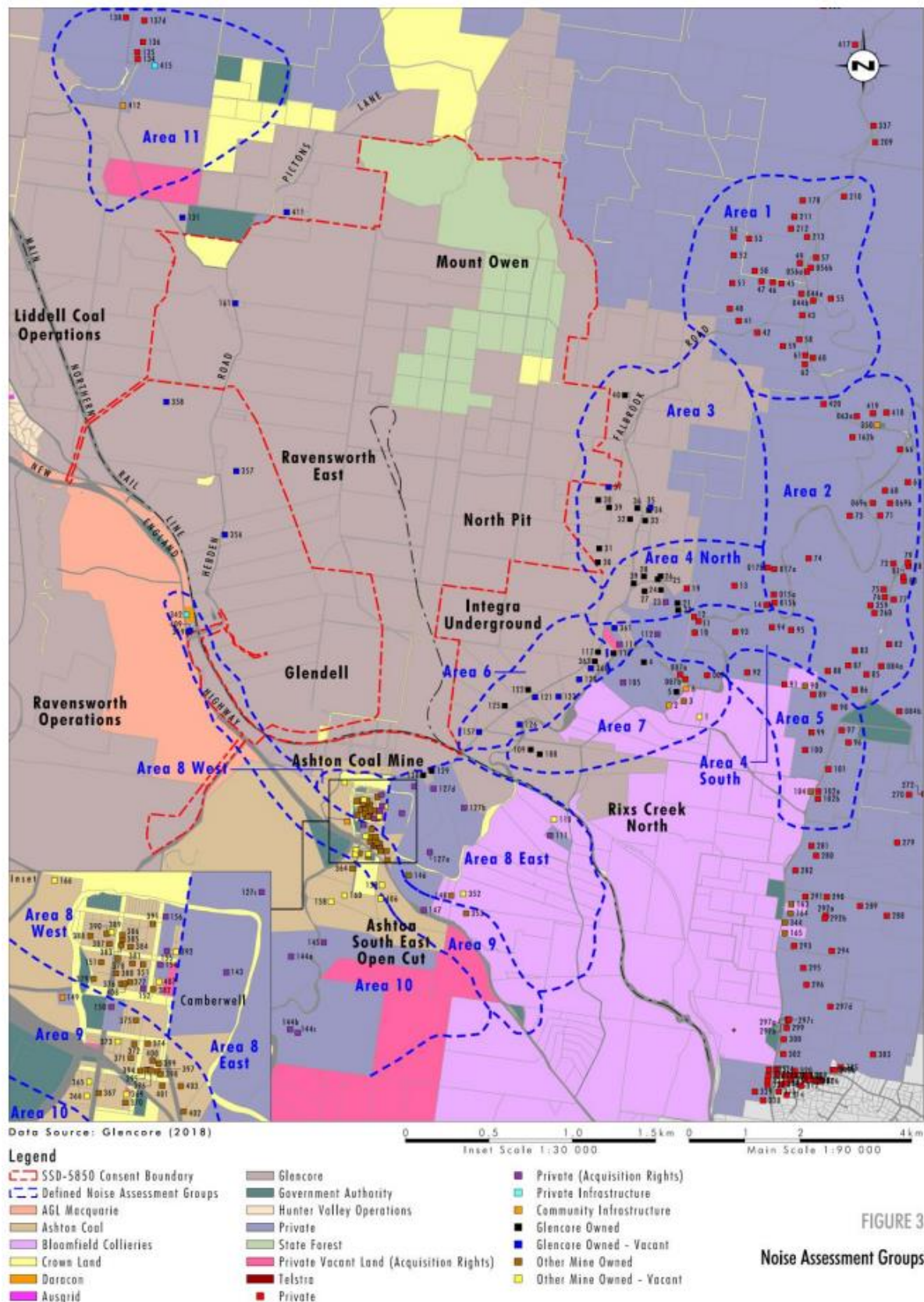


Figure 1.1 Mount Owen Continued Operations Project EIS Background Noise Monitoring Locations

2. Planning

2.1 Performance Criteria

Noise criteria relevant to MGO can be divided into five categories:

1. Noise Criteria;
2. Noise Mitigation Criteria;
3. Land Acquisition Criteria;
4. Cumulative Noise Criteria; and
5. EIS/EA commitments for noise monitoring, management and mitigation (refer to **Appendix A**).

The response to a non-compliance with noise criteria is detailed in **Section 4**.

2.1.1 Noise Criteria

Noise criteria are set for day, evening and night time periods and are expressed as L_{Aeq} and LA1 limits (refer to **Section 8** for definitions). Noise criteria are specified in relevant development consents and EPL conditions. The LA1 is a measure of potential sleep disturbance.

The relevant noise criteria for the Mount Owen Mine operations (that is, excluding Glendell Mine operations) from SSD-5850 and for Glendell Mine operations from DA 80/952 are provided in **Appendix A** and outlined in **Table 2-1** and **Table 2-2**.

Table 2-1 Mount Owen SSD-5850 Noise Criteria, dB(A)

Residence ^a	Day / Evening / Night	Night
	L_{Aeq} (15 min)	L_{A1} , (1 min)
41, 48	36 / 35 / 35	45
91	37 / 37 / 36	45
14, 92	37 / 37 / 37	45
10, 11	37 / 37 / 37	46
13	38 / 38 / 38	45
12, 94, 95, 112	38 / 38 / 38	46
111	39 / 39 / 36	45
19	39 / 39 / 39	45
93	40 / 40 / 40	46
23	41 / 41 / 41	45
All other residences Area 4 – South	37 / 37 / 36	46
All other residences Area 4 – North and all other residences Area 5	37 / 37 / 35	45

Residence ^a	Day / Evening / Night	Night
	L _{Aeq} (15 min)	L _{A1} , (1 min)
All other residences Area 6	40 / 40 / 40	50
All other residences Area 7	40 / 40 / 38	48
All other residences Area 8 – East	39 / 39 / 35	45
All other residences Area 8 – West	44 / 44 / 42	52
All other residences Area 9	48 / 48 / 43	53
Other privately-owned residences	35 / 35 / 35	45

Note

^a The location of the land referred to in Table 3 is shown on the figure in Appendix 3 (SSD-5850)

Table 2-2 Glendell DA 80/952 Noise Criteria, dB(A)

Residence ^a	Day / Evening / Night	Night
	L _{Aeq} (15 min)	L _{A1} , (1 min)
Camberwell Village A		
30 – Ninness 33 – Peachey 37c – Richards 53 – Yates	42	45
11 – Chisholm 22b – Turner 35 – Pugh	41	45
Other privately-owned land in Camberwell Village A	40	45
Camberwell Village B		
20 – Foord 21a & 21b – Merchant 38 – Robertson 47 & 50 – Vollebregt & Clarke	42	45
6 – Bennett 24 – Lopes	40	45
4 – Standing 40 – Smiles	39	45
32 – Green 44 – Stapleton	38	45

Residence ^a	Day / Evening / Night	Night
	L _{Aeq} (15 min)	L _{A1} , (1 min)
Other privately owned land in Camberwell Village B	37	45
Camberwell Village C		
27 – McInerney	40	45
31 – Olofsson	38	45
Other privately owned land in Camberwell Village C	35	45
Other Privately-owned Land		
37a & 37b – Richards 83 – Westcott 110 – Hall	38	45
34 – Poulton 87 – Fairfull	37	45
9 – Burgess 18 – Hall 45 & 46 – Tisdell	36	45
All other privately owned land	35	45
149 Camberwell Hall and St Clements Church	40	-

Note

Notes:

^a The location of the land and receiver numbers referred to in **Table 2-2** are shown in Appendix 4 of DA 80/952 (Glendell MOD 5).

^b Lands titled 30 – Ninness, 33 – Peachey, 37c – Richards, 53 – Yates, 11 – Chisholm, 35 – Pugh, 20 – Foord, 21a & 21b – Merchant, 38 – Robertson, 6 – Bennett, 24 – Lopes, 4 – Standing, 40 – Smiles, 32 – Green and 44 – Stapleton – 45 & 46 Tisdell have been acquired and are now mine-owned.

Noise generated by the MGO is measured in accordance with the relevant requirements of the **NSW Noise Policy for Industry** (as may be updated from time-to-time). The noise criteria above apply under all meteorological conditions except the following:

- During periods of rain or hail;
- Average wind speed at microphone height exceeds 5 metres/second;
- Wind speeds greater than 3 metres/second measured at 10 metres above ground level; or
- Temperature inversion conditions greater than 3°C/100 metres;
- Stability category F temperature inversions and winds speeds greater than 2 meters per second at 10 metres above ground level'; or
- Stability category G temperature inversion conditions.

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

Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station located on the site.

2.1.2 Construction Noise Goals

The proposed construction activities associated with SSD-5850 will include site preparation, civil works and construction activities associated with the upgrade of Hebden Road (completed 2018), the rail turnout linked to the MGO Rail Line and the proposed Narama Pipeline Southern Connection. Construction noise management goals are provided in **Table 2-3**.

Table 2-3 Construction Noise Management Goals

Receiver Location	Construction Noise Management Level L_{Aeq} (15 min)	
	Recommended Standard hours (based on day-time RBL plus 10dB)	Outside Recommended Standard Hours (based on night-time RBL plus 5 dB)
Area 1 – Falbrook Road and Goorangoola	40	35
Area 2 – Bridgman Road	40	35
Area 3 – Falbrook	40	35
Area 4 – Middle Falbrook	40	35
Area 5 – Thomas Lane/Bridgman Road	40	35
Area 6 – Glennies Creek Road	44	39
Area 7 – Middle Falbrook Rd/Stoney Creek Rd	42	37
Area 8 – Northern Camberwell Village	41*	35
Area 9 – Central Camberwell Village	55	43
Area 10 – South of New England Highway	40	35
Area 11 – Hebden	40	35

Source

Appendix 7 MOCO EIS (Umwelt, 2015) and Appendix 3 MOCO MOD 6 (Umwelt, 2020).

** MOCO MOD 6 (Umwelt, 2020) identified a noise management guideline of 46 $L_{Aeq,15min}$ at the closest occupied residences in Camberwell Village including privately owned residences subject to acquisition rights, for construction works associated with the Narama Pipeline Southern Connection*

2.1.3 Land Acquisition Criteria

The land acquisition criteria for Camberwell Village, due to noise generated by the Glendell Mine, are outlined in **Table 2-4**. Receivers located within each village zone are identified in **Table 2-2**.

For all private residences outside of Camberwell Village the noise acquisition limit of 40 dB(A) measured as an $L_{Aeq(15 min)}$ applies to the Glendell Mine (day, evening and night).

The acquisition limit applies to all residences on privately owned land, or on more than 25% of privately owned land, excluding those properties listed in Table 1 of DA 80/952 for Glendell Mine and Table 1 of SSD-5850 for Mount Owen Mine as these residences and properties have acquisition upon request rights under the respective development consents (refer to **Appendix A**). The response to an exceedance of land acquisition criteria is discussed in **Section 4.5.2**.

Table 2-4 Noise Land Acquisition Criteria dB(A) for Noise Generated by Glendell Mine (DA 80/952)

Receiver Location	Land Acquisition Criteria L_{Aeq} (15 min)		
	Day	Evening	Night
Camberwell Village A	45	45	45
Camberwell Village B	42	42	42
Camberwell Village C	40	40	40
All other privately owned land	40	40	40

Note

*Land numbers followed by * have been acquired and are now mine-owned.*

2.1.4 Cumulative Noise Criteria

In order to protect the amenity of local residents, both amenity and land acquisition criteria have been set for cumulative noise generated by all mining operations audible at monitoring locations surrounding Glendell Mine. Cumulative noise criteria for Glendell Mine are presented in **Table 2-5**.

Table 2-5 Cumulative Noise Criteria for Glendell Mine Operations dB(A) from DA 80/952

Measurement	Amenity Criteria	Acquisition Criteria
L_{Aeq} (11 hour) – Day	50 dB(A)	53 dB(A)
L_{Aeq} (4 hour) – Evening	45 dB(A)	48 dB(A)
L_{Aeq} (9 hour) – Night	40 dB(A)	43 dB(A)

SSD-5850 does not include specific criteria for cumulative noise however the development consent requires MGO to use its best endeavours to co-ordinate noise management with nearby mines (i.e. Glendell, Ravensworth Operations, Integra Underground and Rix's Creek North Mines) to reasonably and feasibly minimise cumulative noise impacts (refer to **Section 3.1.3** for further details).

2.1.5 Noise Mitigation Criteria

Where monitoring demonstrates that noise generated from Glendell Mine is greater than or equal to the noise criteria outlined in **Table 2-6** (except where a negotiated noise agreement is in place), MGO will implement additional, reasonable and feasible noise mitigation measures in accordance with Schedule 3 Condition 6 of DA 80/952 (refer to **Section 4.5.3**). Receivers located within each village zone are identified in **Table 2-2**.

Table 2-6 Glendell Mine Additional Noise Mitigation Criteria dB(A) from DA 80/952

Receiver Location	Additional Noise Impact Mitigation Criteria L _{Aeq} (15 min)		
	Day	Evening	Night
Camberwell Village A	43	43	43
Camberwell Village B	40	40	40
Camberwell Village C	38	38	38
All other privately owned land, excluding the land listed in Table 1 of DA 80/952	38	38	38

2.2 Rail Transport

Trains entering the MGO rail loop are not relinquished to MGO until they have left the Main Northern Railway Line and the points and associated signals return the Main Northern Railway Line to normal operation.

Until ARTC relinquishes control/management of the train, operation of the trains is regulated by the consents and licenses held by ARTC for the operation of the Main Northern Railway Line (see **Table 2-7**).

All locomotives using the Mount Owen rail loop do so in accordance with Schedule 3 Condition 6 of SSD-5850, as described in **Appendix A**.

Table 2-7 ARTC EPL Noise limits

Condition L2.5	Location of Measurement	Noise Limit (microphone height 1.5 m)
Low idle with compressor radiator fans and air conditioning operating at maximum load occurring at low idle	Stationary 15 metre contour, except end positions (front and rear)	70 dB(A) LAMax, F, 30s
All other throttle settings under self-load with compressor radiator fans and air conditioning operating	Stationary 15 metre contour, except end positions (front and rear)	87 dB(A) LAMax, F, 30s 95 dB LZMax, F, 30s

Attended monitoring of the MGO will include an assessment of the rail noise from trains accessing the MGO rail loop under control of MGO.

Assessment of rail noise from trains within control of MGO will be in accordance with the **NSW Noise Policy for Industry** and thus considered part of the overall industrial noise contribution from the MGO and be assessed under the criteria in **Table 2-2**.

Consideration will be given to rail noise contributions within control of MGO, when audible, at all attended noise monitoring locations.

3. Implementation

3.1 Noise Management

Noise management at MGO is undertaken in accordance with the MGO EMS and includes a combination of engineering, source specific and contingency control measures.

In accordance with Schedule 3, Condition 6 of SSD-5850 and Schedule 3, Condition 7 of DA 80/952, MGO has adopted a series of controls to proactively manage potential noise impacts.

3.1.1 Operational Noise Management Controls

A summary of the noise management controls implemented at the MGO is provided in **Table 3-1**.

Table 3-1 Operational Noise Management Controls

Operational Aspect	Noise Management Controls
Dozer Operations	- When utilised on stockpiles, dozers will remain in gear when reversing down the stockpile in order to minimise track slap noise; and - Consideration will be given to halting dozer operations in elevated locations in adverse weather conditions. Operations will be modified to suit weather conditions to avoid unnecessary impacts where this will lead to unacceptable impacts on sensitive receptors.
Hauling Operations	- The use of high dumping locations will be restricted during night time operations; - Sites will conduct regular maintenance of haul roads to avoid the effects of haul trucks travelling on rough roads; and - Assessment of equipment fitted with noise attenuation will be conducted regularly to confirm that they are operating effectively.
Material Extraction	- Sheltered dumping is to be considered during periods of adverse weather conditions; - MGO will consider the implementation of mine plan or work area specific controls for high risk areas of the site; and - Any noise attenuation removed from plant or equipment during servicing or maintenance activities are to be re-installed to the equipment immediately following the completion of work.
Coal Handling Infrastructure	- New infrastructure is to include the partial enclosure of hoppers; - New infrastructure is to include the enclosure of conveyors; and - Noise curtains and acoustic cladding is to be considered for implementation in order to reduce noise impacts from transfer points.
Material Crushing and Screening	- Use of engineered controls to reduce noise from crushing and screening infrastructure is to be considered and implemented as necessary.

Operational Aspect	Noise Management Controls
Blasting Operations	- Noise impacts of potential blasts are to be assessed utilising the pre-blast meteorological assessment.
Drilling Operations (Blast and Exploration Rigs)	- Drill rigs will be inspected and assessed prior to utilisation onsite. - Noise attenuation systems will be maintained as necessary; and - Restriction in operating hours as per consent conditions.

3.1.2 Construction Noise

Noise due to construction activities will be managed in accordance with the provisions of the **Interim Construction Noise Guideline** (ICNG) (DECC, 2009) and the specific provisions of Schedule 3, Condition 3 and Schedule 3, Condition 4 of SSD-5850 and Schedule 3, Condition 5A of DA 80/952 (refer to **Appendix A**).

The ICNG provides recommended work practices to minimise noise impacts at residences and other sensitive land uses and provides guidance regarding contact with the community. The ICNG recommends universal work practices that should be implemented on all projects at any time of day. The ICNG also recommends additional feasible and reasonable mitigation measures in cases where construction noise impacts are expected to exceed the noise management level and/or where construction activities are required to occur during the night.

The recommended universal work practices to be adopted during construction at any time of day include:

- Regularly training of workers and contractors (such as at toolbox talks) on the use of equipment in ways to minimise noise.
- Ensure site managers periodically check the site and nearby residences and other sensitive land uses for noise problems so that solutions can be quickly applied.
- Include in tenders, employment contracts, subcontractor agreements and work method statements clauses that require minimisation of noise and compliance with directions from management to minimise noise.
- Avoid the use of radios or stereos outdoors where neighbours can be affected.
- Avoid the overuse of public address systems.
- Avoid shouting and minimise talking loudly and slamming vehicle doors.
- Keep truck drivers informed of designated vehicle routes, parking locations, acceptable delivery hours or other relevant practices (for example, minimising the use of engine brakes, and no extended periods of engine idling).
- Develop a one-page summary of approval or consent conditions that relate to relevant work practices, and pin it to a noticeboard so that all site operators can quickly reference noise information.
- Workers may at times need to discuss or negotiate practices with their managers.

Additional work practices to minimise construction noise at night are:

- Avoid the use of equipment that generates impulsive noise.
- Minimise the need for reversing or movement alarms.
- Avoid dropping materials from a height.
- Avoid metal-to-metal contact on equipment.
- Schedule truck movements to avoid residential streets if possible.
- Avoid mobile plant clustering near residences and other sensitive land uses.
- Ensure periods of respite are provided in the case of unavoidable maximum noise level events.

The predicted construction noise levels from the MOCO EIS (Umwelt, 2015) for 'recommended standard hours' for the construction works associated with SSD-5850 at the closest receivers range from 40 to 46 dB(A). The predicted worst case construction noise levels at Receiver R111 (Area 8) could exceed the relevant construction noise management levels by 2 dB for a short period of time while construction works are occurring in the southern section of the proposed railway. When construction of the rail line moves further north the predicted construction noise levels fall below the applicable construction noise management level. The ICNG notes that where the noise management level cannot be met, all feasible and reasonable work practices should be implemented to meet the construction noise management level.

Based on the modelling of the construction activities from the MOCO EIS (Umwelt, 2015), the construction noise levels will not result in any discernible impact on surrounding receivers and will comply with the ICNG construction noise criteria at all but two of the residential receiver locations. The construction noise model predicts an exceedance of the relevant noise criteria at Receiver R111 (Area 8) (which has existing acquisition rights) under the worst case meteorological conditions during the linkage of the southern section of the rail line to the Main Northern Railway Line.

Limited activities (such as track work involving the Main Northern Rail Line) will be required during outage windows (periods of no or highly restricted rail activity on the Main Northern Rail Line) where construction activities may need to be continuous over a 24 hour period or more. However, Section 2.3 of the ICNG allows for construction activities 'outside recommended standard hours' when there is a 'requirement to sustain the operational integrity of public infrastructure'.

The ICNG does not specifically state what additional feasible and reasonable mitigation measures above the universal work practices should be used for cases where construction noise impacts are expected to exceed the noise management level. However, Transport for NSW in their *Construction Noise Strategy* (2011) and RMS in *Construction Noise and Vibration Guideline* (2016) suggest that:

- For construction activities during standard hours at R111, where construction noise impacts are predicted to be less than 20 dB above the RBL, no additional feasible and reasonable mitigation measures are required above the recommended universal work practices.
- For construction activities outside of standard hours at R111, where construction noise impacts are predicted to be more than 20 dB above the RBL, notification, noise monitoring and offers of respite should be offered.

The Construction Noise and Vibration Guideline (RMS, 2016) notes that:

- Notification may include telephone calls or letterbox drops.
- Construction noise monitoring is only required if works exceed 3 weeks in duration.
- Offers of respite involve limiting work on consecutive nights and are dependent on what times the works are likely to occur during the night and negotiation with individual residents. If this is required MGO will utilise the recommendations in Construction Noise and Vibration Guideline (RMS, 2016).

Notwithstanding the above, prior to construction activities occurring in the southern section of rail turnout during outage windows, Mount Owen will consult with residents at R111 as per the requirements of the ICNG.

A noise assessment of construction works for the proposed Narama Pipeline Southern Connection was undertaken for MOCO MOD 6 (Umwelt, 2020). The assessment indicated that noise levels at assessed receptors are unlikely to exceed the recommended noise affected levels during standard construction hours, as recommended in the ICNG. As such no additional specific noise management measures are required for construction work within these time periods.

However, should construction works for the proposed Narama Pipeline Southern Connection be required outside standard construction hours, the abovementioned additional work practices to minimise construction noise at night will be implemented.

3.1.3 Cumulative Noise Management

The detailed assessment of cumulative noise levels is performed when needed and may be triggered by:

- A request for acquisition where the contribution for various industrial operations needs to be assessed;
- A complaint about the cumulative noise levels;
- A recommendation from the independent consultant conducting the attended monitoring program; or
- Cumulative noise levels reported on the daily Sentinex charts above the cumulative noise level criteria.

The real time noise monitor network at MGO provides information on the daily cumulative noise levels using an automated process within the Sentinex noise units. When a high cumulative noise level is reported on a daily Sentinex chart, the assessment protocol may include:

- Checking meteorological conditions to confirm there could be a contribution to the cumulative noise level from the MGO;
- Check daily run chart to see if there is an identifiable trend in 15 minute noise levels;
- Check previous daily run charts to see if there is an identifiable trend in overall noise level;
- Check the audio files to confirm the noise sources;
- Consult with neighbouring mining / industrial operations to minimise the potential for cumulative noise; and
- Record and as appropriate initiate and report on the follow up actions.

It is noted that compliance with the relevant $L_{Aeq,period}$ cumulative noise level criteria (provided in **Table 2-5**) cannot be assessed using the results from the $L_{Aeq,15minute}$ attended monitoring program. Once a detailed assessment has been triggered, to determine compliance with the cumulative noise level criteria, the noise levels will be recorded using a real time noise monitor to measure the $L_{Aeq,period}$ noise levels from all industrial noise sources. If the measured attended noise levels exceed the $L_{Aeq,period}$ cumulative noise level criteria, the contribution the MGO makes to the cumulative noise levels will be established. This would be by undertaking attended monitoring for the duration of the relevant period; and/or through the use of a compliance noise model.

To satisfy the requirement of the EPL and Development Consents the records of the assessment of cumulative noise impacts will be reviewed quarterly by a suitably qualified and experienced person conducting the attended monitoring program.

A statement on compliance with the cumulative noise criteria will be prepared based on the quarterly review of the records maintained by MGO.

3.1.4 MGO Noise Management Coordination Protocol

In accordance with the Development Consents, MGO will use its best endeavours to coordinate noise management with nearby mines to reasonably and feasibly minimise cumulative noise impacts.

A quarterly environmental meeting is in place with Integra, Rix's Creek, Ashton, Liddell and Ravensworth Operations. Where high noise levels are observed during compliance monitoring or during the assessment of the ongoing performance of the MGO, discussions are initiated with the relevant mining operations to inform them of the observations and reviewed in the quarterly meeting.

Additionally, where other operations are identified as being the source of the noise either when investigating a complaint or in the response to noise alarms, notification of the noise impact to the mining operations will be made to advise them of the issue.

When appropriate, data is shared between the mining operations with real time noise monitoring equipment being shared between other mining operations.

3.2 Strategies Overview

This section provides an overview of the noise control strategies, that is, those in addition to the routine noise management measures.

The noise control strategy will be based on a combination of automated daily forecasting, meteorological monitoring and real time noise monitoring to determine risk on a daily basis. These strategies will be used to inform necessary control actions. Further detail on real time noise and meteorological monitoring is provided both below and in **Section 3.2.2**.

3.2.1 Proactive Management Strategies

Predictive Forecasting System

MGO utilises a predictive forecasting system that provides site personnel with information on daily environmental risks associated with air quality, noise and blasting. This forecast summary report is emailed to site personnel each morning, discussed at daily operational meetings and can also be accessed online. This system provides mine personnel with information regarding potential noise impacts at sensitive receivers based on predicted meteorological conditions. In response to the predictive forecasting system, MGO investigates and implements proactive changes to operations that may include (but not be limited to) changes in mining area to avoid exposed locations, designing and

using in-pit or more protected dumping locations, positioning of equipment to maximise shielding (e.g. excavators behind low walls) and utilising wheel dozers instead of track dozers to avoid noise where available. A typical response to the prediction of an adverse weather event may include:

- Environmental personnel discussing with the Mining Supervisor (or relevant operational supervisor) that operations may need to be modified to avoid noise impact at residential receivers;
- Making changes to operational mine plans to reduce noise as much as possible;
- Monitoring noise levels recorded by the real-time noise monitoring network and responding to alarms through the modification of operations to adapt to the situation as required;
- Temporarily modifying operations if required, so that noise criteria are not exceeded; and
- Recording the actions taken when management measures are implemented.

3.2.2 Reactive Management Strategies

In addition to the operational controls outlined in **Section 3.1**, reactive management measures will be implemented in response to identified triggers. Noise triggers and responses are outlined below.

Real Time Noise Monitoring

Real time monitoring is used as an on-site monitoring tool to assist with the investigation of complaints or noise related issues and to inform sites (via alarms) that noise levels are elevated and are nearing compliance limits.

Relevant real time noise monitoring units are designed to send alerts advising mining personnel that noise at the monitor is approaching performance criteria. Noise alarms are sent, via SMS, to the sites Environmental Personnel, Mining Supervisors and Management to inform operations that noise is approaching predetermined limits. Action can then be taken to modify operations where appropriate.

The real time noise monitors have been setup to record directional, low frequency noise sources. Alarms have been set up to trigger if the noise source from the area of influence (direction of the operation) exceeds the predetermined level for a period of 6 * 5 minute periods (noted as 2 * 15 minute recordings).

Noise alarms are generally set for the evening and night time period, as during the day other sources of noise can set off the alarms.

Noise alarms are not triggered in wet weather or when wind speed is greater than 3 m/s (that is, when noise criteria do not apply due to meteorological conditions). The alarms have been set to be at least 2dB below the compliance criteria at the location of the monitor or the modelled limit at the monitor that would be representative of the nearest sensitive receiver.

The alarms will continue to be triggered every 15 minutes if the noise from the area of interest continues above the trigger limit. In the event an alarm is triggered, the site will record actions taken in response to the alarms in accordance with site procedures.

All Real Time Monitoring equipment is operated in accordance with the GCAA **Noise Management Protocol**. Alarms will be sent via SMS to the following departments:

- Environment and Community (E&C Manager, E&C Coordinator, E&C Officer).
- Production (Production Superintendent, Mining Supervisors).
- CHPP (Supervisors).

Noise Management Trigger Action Response Plan (TARP)

A Noise Management Trigger Action Response Plan (TARP) has been developed for the Camberwell Village area. The TARP details the limits and response required by the mine in the event noise alarms are triggered.

MGO respond to noise alarms in accordance with the following internal procedures:

- a) Glendell Mining Supervisor Environment and Community Guidance Notes; and
- b) Mount Owen Response to Noise and Dust Alarms.

Actions which may be taken include relocating, modifying or ceasing operations as necessary to minimise noise emissions. These actions include, but are not limited to:

- Instructing dozers to operate in first gear;
- Reduce material drop height;
- Re-locate operations to more protected areas within pit;
- Use of rubber tyred dozers;
- Restrict crusher operations;
- Investigating noise at source;
- Cease activity in exposed areas; and
- Shutdown auxiliary equipment.

3.3 Noise Monitoring

Monitoring will be in accordance with EPL and Development Consent conditions, which specify required methods of sampling, analysis and frequency of monitoring (refer to **Appendix A**).

Noise monitoring at MGO essentially takes the form of either compliance monitoring or internal performance management monitoring.

Compliance monitoring is by attended monitoring at defined locations, at regular intervals as set out in the statutory requirements.

Performance management utilises the real time noise monitoring systems on a continuous basis and allows operations to be managed to reduce noise where necessary. Should compliance monitoring identify noise levels which are at the criteria levels identified in MGO Development Consents or EPL's, this will trigger further performance management monitoring at additional sites over a wider area to allow MGO to gauge the level of noise and its audibility in the wider environment.

Further details on each type of monitoring are provided in the sections below.

3.3.1 Noise Periods

In accordance with the MGO EPL's, Development Consents and the **NSW Noise Policy for Industry**, the following time frames are referred to for monitoring purposes.

- a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8 am to 6pm on Sunday and Public Holidays.
- b) Evening is defined as the period from 6pm to 10pm.

- c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am on Sunday and Public Holidays.

3.3.2 Noise Monitoring Program

The MGO noise monitoring program includes a combination of real time and attended monitoring measures which are carried out in accordance with the relevant requirements set out in the **NSW Noise Policy for Industry**. Full details of all major sources of noise as well as the identification of all surrounding sensitive and non-sensitive locations are contained the Mount Owen Continued Operations EIS, Glendell EA and the associated modifications to SSD-5850 and DA 80/952.

Rather than monitoring at all residences listed in **Table 2-1** and **Table 2-2** representative monitoring locations are used to demonstrate compliance with adopted criteria identified in **Table 3-2** and **Table 3-3**. Attended monitoring will be performed by a suitably qualified and experienced person (acoustic consultant).

The acoustic consultant will plan to target noise monitoring to occur on nights where forecast meteorological conditions are expected to be within Development Consent requirements for noise monitoring to minimise data exclusions due to adverse weather conditions (refer to Appendix 4 of SSD-5850 and Schedule 3 Condition 2A of DA 80/952).

Prior to undertaking the attended monitoring, the acoustic consultant will review the real-time meteorological data and weather forecasting tools to predict if any site would be likely to return a noise level well below the criteria or would be expected to be inaudible (i.e. upwind monitoring location).

Noise monitoring locations will be reviewed and, where necessary, modified over the life of operations according to monitoring results, physical changes in mining operations, or following the acquisition of private property by MGO or neighbouring mining operations.

A low frequency noise penalty will be added to the estimate of mine noise contribution from MGO in accordance with the method nominated in Factsheet C of the **Noise Policy for Industry**.

A protocol which outlines the general methodology MGO uses to distinguish noise emissions from other operations is shown in **Figure 3.1**.

Complete minimum 15 minutes monitoring

Step 1: Is the estimated intrusive $L_{Aeq15min}$ industrial noise level less than the minimum noise limit of Mt Owen and Glendell

Step 2: Estimated intrusive $L_{Aeq15min}$ industrial noise level from direction of Mt Owen and Glendell mines

Step 3: Is the estimated intrusive $L_{Aeq15min}$ noise level from the direction of Mt Owen and Glendell less than the minimum noise limit of mt Owen and Glendell?

Step 4: Determine Mt Owen and Glendell noise contribution to the intrusive $L_{Aeq15min}$ noise level

Step 5: Compare the esimated attributable intrusive $L_{Aeq15min}$ noise level for Glendell against the relevant noise criterion taking into account any modifying factors

Step 6: Compare the esimated attributable intrusive $L_{Aeq15min}$ noise level for Mt Owen against the relevant noise criterion taking into account any modifying factors

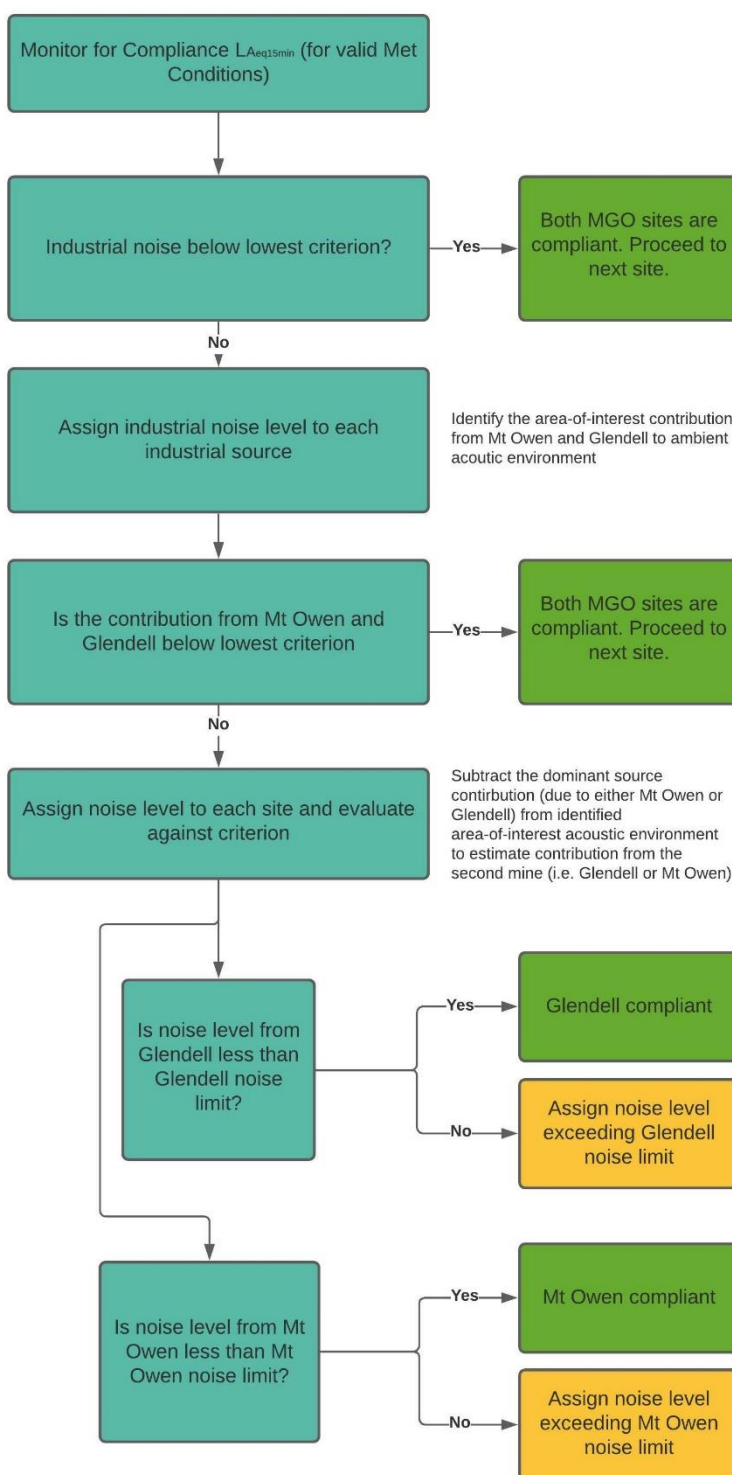


Figure 3.1 Protocol to distinguish MGO noise emissions

3.3.3 Mount Owen Attended Noise Monitoring SSD-5850 and EPL 4460

To assess compliance with noise impact assessment criteria, land acquisition criteria, cumulative criteria and EIS/EA predictions for noise, attended monitoring will be undertaken at representative locations in the region surrounding MGO. In order to better understand the acoustic environment in the context of MGO, (4) noise monitoring groups (NMGs) were established in consultation with the EPA in the region surrounding Mount Owen Coal Mine. Noise monitoring groups for Mount Owen Mine are shown in **Figure 3.2**.

Noise Monitoring Groups

NMG 1: This area covers the privately owned rural residential properties in the Greenlands locality along Falbrook Road and Goorangoola Road to the north-east of Mount Owen Mine. A north-west to south-east ridge line of elevations up to 280 metres separates NMG 1 from the Mount Owen Mine. The Greenlands locality is an area of undulating hills with pockets of forest in open farming land.

NMG 2: This area covers the privately owned rural residential properties in the Middle Falbrook locality to the east of the Falbrook Road/Middle Falbrook Road intersection, Thomas Lane and Bridgman Road to the east of Mount Owen Mine. A low lying north-east to south-west ridge line of elevations up to 130 metres separates NMG 2 from Mount Owen Mine to the west. The Middle Falbrook locality includes an area of woodland area above the floodplains of Glennies Creek and then open farming land to the east. The eastern area of NMG 2 incorporates the east to west catchment area of Stoney Creek and includes a central north-south ridge line with an elevation of 170 metres.

NMG 3: This area covers the privately owned rural residential properties in the Glennies Creek locality and the northern portion of Camberwell village. The acoustic environment of NMG 3 is heavily influenced by industrial noise from mining operations to the south-east, south and to the west, the Main Northern Railway Line and the New England Highway. NMG 3 includes Glennies Creek and open farming land to the east of Camberwell village.

NMG 4: This area covers the privately owned rural residential properties in the Hebden locality along Scrumlo Road to the north-west of Mount Owen Mine. The Hebden locality is predominantly open farming land but includes a hard-rock quarry and there is also a second hard-rock quarry located to the north east.

Noise Monitoring Locations

Attended noise monitoring locations shown on attached **Figure 3.2** are representative of the four (4) NMGs where Mount Owen Mine is an audible noise source. The descriptions of the four (4) primary monitoring locations used to assess compliance of Mount Owen Mine at each of the NMGs are as follows:

N1: Attended monitoring location for NMG 1: Greenlands. The monitoring location is on Falbrook Road approximately 300 metres east of property R042. The closest privately owned property to N1 is property R042 where the night time LAeq, 15 minute criterion is 35 dB(A). The monitoring location is located between MGO and private properties in the Greenlands locality designated as NMG 1 on **Figure 1.1**.

The recommended noise criterion at N1 in each period (day/evening/night) is 35/35/35 dB(A) LAeq, 15 minute.

N3: Attended monitoring location for NMG 2: Middle Falbrook. The monitoring location is on the corner of Falbrook Road and Middle Falbrook Road adjacent to mine owned property R029. The adopted compliance LAeq, 15 minute criteria at N3 for day time and evening are 45 dB(A) and night time 42 dB(A). These levels are conservative as they are based on the predicted noise impacts at the

closest privately owned residence R023 approximately 600 metres to the east of the monitoring location. This monitoring location will enable the contributions to the acoustic environment from Mount Owen Mine and the Glendell mining operations to be quantified. The recommended noise criterion at N3 in each period (day/evening/night) is 45/45/42 dB(A) LAeq, 15minute.

If the contribution from Mount Owen Mine at N3 is greater than 42 dB(A) then attended monitoring will also be conducted at N15 approximately 1.2km to the east-southeast along Middle Falbrook Road.

N15 is located on the crest of the hill enabling the assessment of worst-case noise impacts from Mount Owen Mine at three privately owned properties: R010, R011 and R012. As a secondary monitoring location, the recommended noise criterion at N15 in each period (day/evening/night) is 37/37/37 dB(A) LAeq, 15minute.

N4: Attended monitoring location for NMG 3: Glennies Creek. The monitoring location is on Glennies Creek Road and is located on the crest of the hill enabling assessment of worst-case noise impacts for the region and observation of several different mining operations and the Main Northern Railway Line. Until recently the closest privately owned property to N4 was property R122 where the night time LAeq, 15 minute criterion is 42 dB(A) however this is now a mine-owned residence and not reflective of the nearest private receiver. . The recommended noise criterion at N4 in each period (day/evening/night) is 42/42/42 dB(A) LAeq, 15minute.

If the contribution from Mount Owen Mine at N4 is greater than 42 dB(A) then attended monitoring will also be conducted at N11, approximately 3.5 km to the south-west along Glennies Creek Road south of the Main Northern Railway Line adjacent to private property R127a. This site is located on the south edge of a hill crest approximately 420 metres from the dwellings on the property. From the monitoring location it is possible to observe several different mining operations, the Main Northern Railway Line and the New England Highway.

As a secondary monitoring location, the closest privately owned property to N11 is the property R127a where recommended noise criterion at N4 in each period (day/evening/night) is 39/39/35 dB(A) LAeq, 15minute.

N17: Attended monitoring location for NMG 4: Representative of the rural residence on Scrumlo Road, Hebden. The recommended noise criterion at N17 in each period (day/evening/night) is 35/35/35 dB(A) LAeq, 15minute.

The applicable noise criteria at each of the primary and secondary monitoring locations are summarised in **Table 3-2**.

Assessment of noise monitoring results recorded at MGO is further discussed in **Section 4.1**.

Table 3-2 Mount Owen Adopted Compliance Noise Monitoring Locations and Criteria

Representative Monitoring Location	Noise Monitoring Groups	EPL 4460 Monitoring Point Reference	Closest Privately Owned Residence	Mount Owen Mine Noise Monitoring Criteria, dB(A)	
				Day/Evening/Night LAeq,15minute	Night LA1,1minute
N1 (Primary)	NMG1	31	R042	35/35/35	45
N3(Primary)	NMG2	33	R023	45/45/42	49
N15(Secondary)		44	R010	37/37/37	45

Representative Monitoring Location	Noise Monitoring Groups	EPL 4460 Monitoring Point Reference	Closest Privately Owned Residence	Mount Owen Mine Noise Monitoring Criteria, dB(A)	
				Day/Evening/Night $L_{Aeq,15\text{minute}}$	Night $L_{A1,1\text{minute}}$
N4(Primary)	NMG3	34	R127a	42/42/42	52
N11(Secondary)		37	R127a	39/39/35	45
N17(Primary)	NMG4	39	R134	35/35/35	45

Noise level data will be collected over a 15 minute period and the $L_{Aeq,15\text{ minute}}$ dB(A) result recorded. The reported noise levels will include all observable noise sources contributing to the acoustic environment at the monitoring location. The noise levels will be recorded in one third octave band filter. The results will be presented as a noise level trace with a maximum interval of 1 second, where practicable to do so.

Low pass filtering of the one third octave noise levels is used as a tool to filter out extraneous high frequency spectrum noises (such as insects). Low pass filtering will not be less than 630 Hz. The 1 second interval noise level trace will be used to identify individual noise events attributable to the mine of interest or extraneous noise sources. The contributions from extraneous noise events will be excluded from the analysis and the determination of the $L_{Aeq,15\text{minute}}$ dB(A) contribution from the mine. The $L_{eq,15\text{ minute}}$ dB(C) result shall be collected simultaneously.

Noise Level Investigation Protocol

If the noise limits in **Table 3-2** are achieved at the primary monitoring locations, the noise levels from the Mount Owen Mine should be at, or below, the relevant noise criteria at each property identified in SSD- 5850 Schedule 3, Condition 5.

If the noise levels from the Mount Owen Mine are above the noise limits at primary monitoring locations N3 and N4, additional compliance monitoring should be completed at the secondary monitoring locations N15 and N11 respectively.

When a potentially high noise level contribution is observed from the Mount Owen Mine at a monitoring location, additional source validation may be required so that the Mount Owen Mine contribution can be assessed and the impact on the private properties in the locality quantified.

These investigations typically include:

1. Assessment of the impact the traffic noise levels and other mining related sources are having on the noise environment at the monitoring site;
2. Conducting observations at other locations to confirm source contributions from the Mount Owen Mine, Glendell Mine, Ravensworth Operations, Ashton Coal Mine, Integra Underground Mine, Rixs Creek North Mine, the New England Highway and the Main Northern Railway Line;
3. Review of the mine's shift report, equipment production timeline and equipment work areas/positional information; and
4. Quantification of the noise impacts at each of the potentially affected privately owned residences in the area local to the monitoring site through a combination of direct

measurement, review of real-time noise monitoring data and/or modelling using a current computer based noise model of the mine.

3.3.4 Glendell Attended Noise Monitoring DA 80/952 and EPL 12840

To satisfy Glendell Development Consent DA 80/952 and EPL 12840 conditions the measurement of the noise environment for compliance assessment will be completed at five locations N3 – Middle Falbrook Rd, N4 and N11 – Glennies Creek Rd and N8, N9, N10 – Camberwell Village, that are considered to be representative of the most sensitive noise receivers (refer to **Table 3-3** and **Figure 1.1**).

At each compliance noise monitoring location, the nearest privately owned residence has been used to determine the adopted noise monitoring criteria (refer to **Table 3-2**). If the adopted noise criteria at the compliance noise monitoring location are exceeded, it will be considered that the noise criteria (listed in **Table 2-1**) at any of the residences in the “associated Area/residences” (refer to **Table 3-2**) may also have been exceeded. The extent of the number of affected residences from a sustained exceedance of the adopted noise criteria will be determined based on calculation of the noise level at each potentially affected resident based on the estimated contribution from MGO at the monitoring location.

Based on historic attended noise monitoring, residents in Area 11 (refer **Figure 1.1**) have little to no noise impacts from MGO due to the topographical shielding between current mining operations and privately owned residents. The assessment of noise impacts for Glendell Area 11 is currently accessed as part of Noise Monitoring Points N17 and N1 of the Mount Owen Mine Attended Noise Monitoring Program. If noise complaints are received by MGO from residents in Area 5, MGO will undertake targeted noise monitoring at suitable locations representing the affected resident(s). Monitoring will be undertaken at these locations until such time that noise levels reduce to within the noise criteria limits specified in **Section 2.1**.

In addition to these locations, four additional reference attended monitoring locations (N12, N13, N14, N15) in the region surrounding MGO are shown on **Figure 3.3**. Monitoring at these locations is supplementary to the routine compliance monitoring and may be used if potentially high noise levels are recorded at the routine monitoring locations. The additional monitoring locations form part of the performance management program enabling MGO to gauge mine audibility over a wider area.

Table 3-3 Glendell Adopted Compliance Noise Monitoring Locations and Criteria

Monitoring Location	EPL 12840	Closest Privately Owned Residence	Area/ Residences Represented by Monitoring Location	Adopted Glendell Mine Noise Monitoring Criteria, dB(A)	
				Day/Evening/Night ¹ L _{Aeq,15minute}	Night ¹ L _{A1,1minute}
N4	7	66	Area 6	38	45
N8	8	145	Residence 145	35	45
N9	9	150	Residences 147, 150, 152	42	45
N10	10	143	Residences 143, 154, 155, 156	40	45

Monitoring Location	EPL 12840	Closest Privately Owned Residence	Area/Residences Represented by Monitoring Location	Adopted Glendell Mine Noise Monitoring Criteria, dB(A)	
				Day/Evening/Night ¹ L _{Aeq,15minute}	Night ¹ L _{A1,1minute}
N11	11	127a	Residences 111 127a, 127b, 127c, 146, 148	38	45

*R122 is a mine-owned residence. The next nearest privately owned residence is R127a that is represented by monitoring location N11.

Noise level data will be collected over a 15 minute period and the L_{Aeq,15 minute} dB(A) result recorded. The reported noise levels will include all observable noise sources contributing to the acoustic environment at the monitoring location.

The noise levels will be recorded with a one third octave band noise level filter, where practicable to do so. The results will be presented as a noise level trace at a maximum interval of 1 second.

Low pass filtering of the one third octave band noise level is used as a tool to filter out extraneous high spectrum noises (such as insects). Low pass filtering will not be less than 630 Hz. The 1 second interval noise level trace will be used to identify individual noise events attributable to the mine or extraneous noise sources, where practicable to do so. The contributions from these events will be excluded from the analysis and the determination of the L_{Aeq, 15 minute} dB(A) contribution from the mine.

The L_{eq, 15 minute} dB(C) result shall be collected simultaneously.

Assessment of noise monitoring results recorded at Glendell is further discussed in **Section 4.1**.

3.3.5 Meteorological Monitoring

Meteorological monitoring uses the MGO Sentinex units (Sx) weather stations. Temperature lapse rate is determined using wind stability classes in accordance with the methods described in the **NSW Noise Policy for Industry**.

The MGO real time monitoring network includes three (3) 10 metre tower weather stations, Sx13M1, Sx13M2 and Sx13M8, originally installed to record the climatic conditions in the region surrounding MGO. These existing weather stations have been installed and operated in accordance with the requirements of *Australian Standard AS2922-1987 Ambient Air – Guide for the siting of sampling units*. The weather stations record the following meteorological data at 10-minute intervals:

- Wind speed, wind direction and sigma-theta;
- Temperature at 2 metres and 10 metres;
- Humidity; and
- Rainfall.

Sx13M8 and Sx13M2 are located to the north west and south east respectively of the MGO active mining area. Sx13M1 is located to the north west of Glendell operations.

In addition to the MGO weather stations, each of the real time noise monitoring and air quality monitoring stations incorporate a 2 metre tower weather station designed to record local climatic conditions. The majority of these units are located to the east, south east and to the south of the

active mining areas. These units are not approved for compliance assessment in association with the approved attended noise monitoring program.

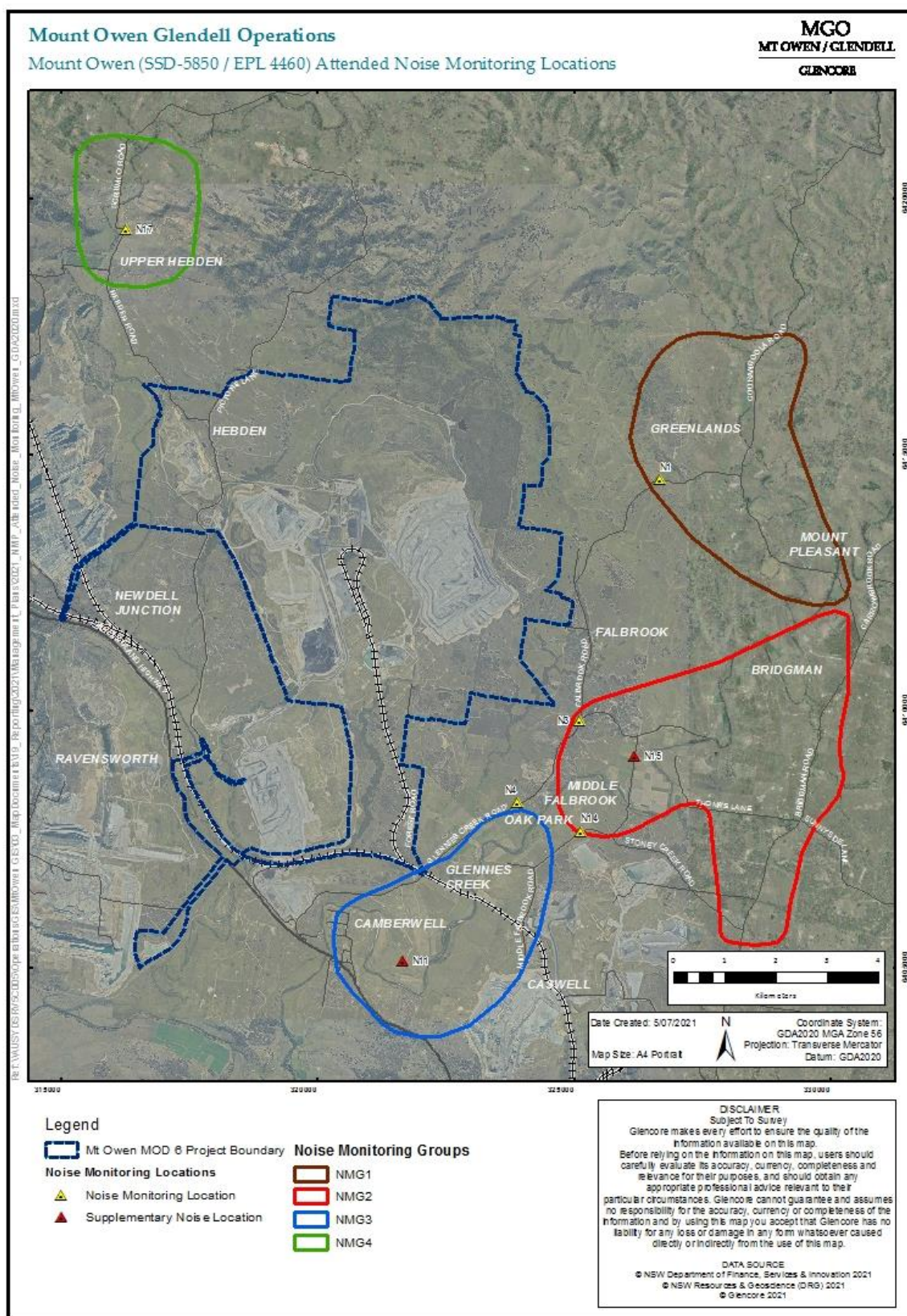


Figure 3.2 Mount Owen Noise Monitoring Locations

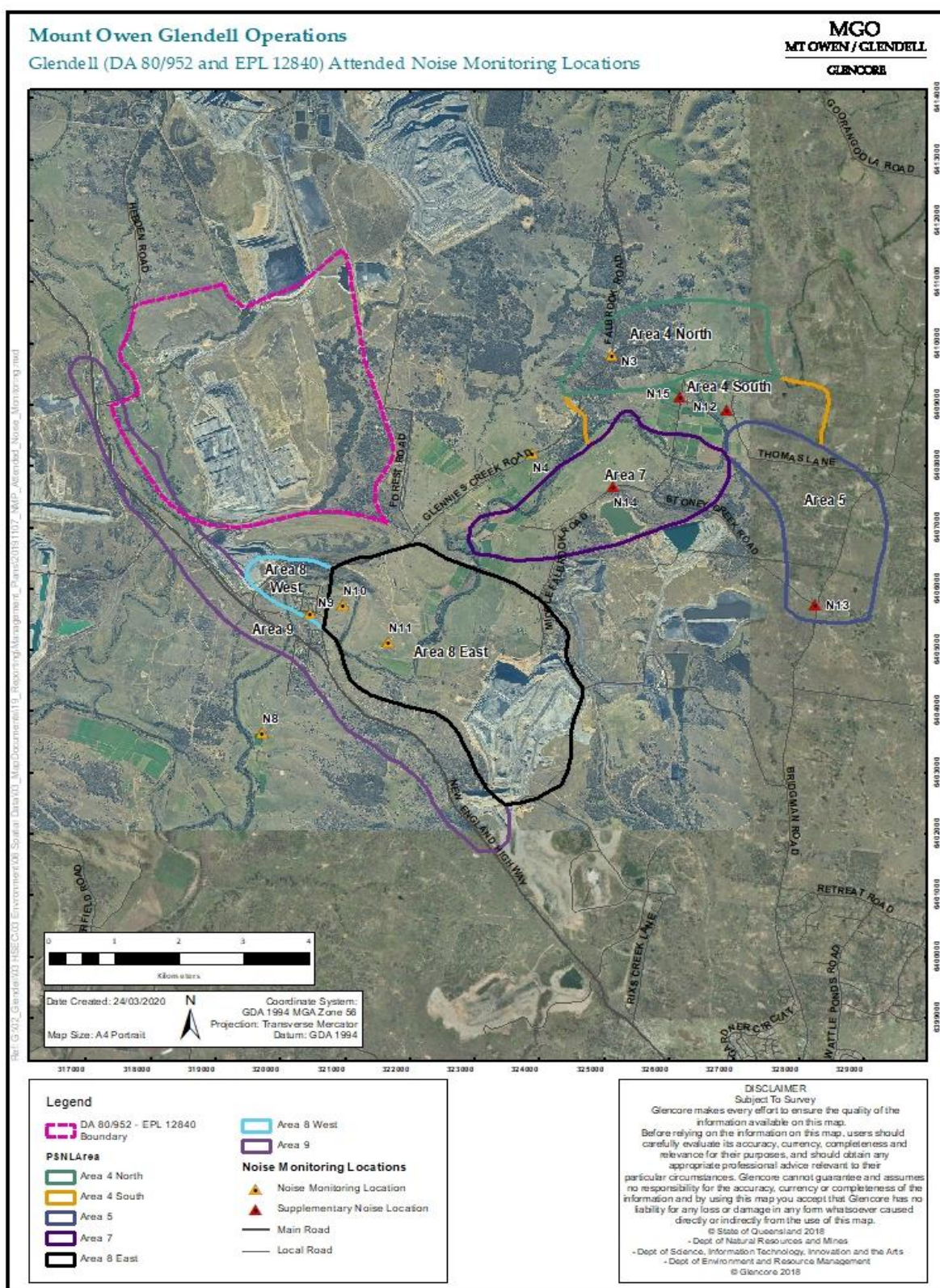


Figure 3.3 Glendell Noise Monitoring Locations

3.3.6 Real Time Noise Monitoring

MGO operates a series of real time noise monitoring units that are used to assess operations in real time and to provide information that can be used to respond to noise complaints or issues. Each unit records the following data that can be used to assess noise from the complex:

- $L_{Aeq\ 15minute}$ and $L_{Aeq\ 15minute}$ in 1/3 octave to enable analysis according to frequency;
- 15 minute statistical data (L_{A1} , L_{A10} , L_{A90});
- $L_{Aeq\ period}$ (period = day, evening or night) and $L_{Aeq\ period}$ in 1/3 octave to enable analysis according to frequency;
- Digital audio recording 24 hours per day, 7 days per week;
- Remote triggering to start or stop recording;
- $L_{A1\ (1\ min)}$ statistical noise levels for sleep disturbance; and
- Wind direction, wind speed, temperature, humidity and rainfall.

Real time monitors operate continuously and data can be accessed remotely by site personnel to help manage real time noise impacts or perform historical searches in response to noise issues or complaints. Data from the monitoring system can be received at pre-set intervals or can be accessed remotely as required. Data is generally stored on the system for a period of 1 year, however, older data can be retrieved from archived records if required.

Monitoring locations have been chosen to consider residential locations, prevailing weather conditions and the privacy of residents (refer to **Figure 1.1**, **Figure 3.2** and **Figure 3.3**).

Noise monitoring locations will be reviewed and, where necessary, modified over the life of operations according to monitoring results, physical changes in mining operations, or following the acquisition of private property by MGO or neighbouring mining operations.

Targeted Monitoring

Where applicable, in the event of a community noise complaint or a noise alarm from the real time monitoring network, where noise levels are considered suspiciously high, targeted monitoring using a hand held monitor may be performed to provide more information on the noise environment. Targeted monitoring may be performed by trained mine personnel or by acoustic consultants. Results from this monitoring are provided to MGO environmental personnel to consider implementation of appropriate management actions.

Validation Program

The MGO noise monitoring program includes a check to validate the results from the real time noise monitoring network with the attended monitoring results. The real time noise monitoring network is an integral component of the MGO performance management system and the validation monitoring enables the real time noise units to be used as an indicator of compliance with the noise criteria in respective Development Consents and as trigger/alarm indicating the need to implement management actions or the need for further attended monitoring.

As part of the continuous improvement process, the validation program aims to assess the accuracy of the measurements of the real time monitors and provide the mine with an improvement process to calibrate the real time noise monitoring alarms to facilitate the provision of accurate and effective data. This will be achieved by monitoring adjacent to relevant real time noise monitoring units at least once per year. The time of the attended monitoring will coincide with the real time noise monitor.

The reported noise level from the real time noise monitor will be compared with the attended monitoring results.

Noise Control Measures

The following noise control measures, if not already implemented at the MGO, will be implemented as part of SSD-5850 and DA 80/952:

- Use of smart broadband ‘Quacker’ reversing signals;
- Regular inspection and maintenance of noise attenuation systems; and
- Periodic review of the noise performance of equipment fleet at a minimum review rate of 20% of the mobile fleet per year.

The implementation of the above noise control measures will be assessed during scheduled maintenance of equipment. Any machinery requiring additional noise control measures will be upgraded via the scheduled maintenance program.

Continuous Improvement

MGO undertakes continuous improvement investigations in relation to noise, and reports on their implementation and effectiveness in the Annual Review. The continuous improvement process for noise targets the implementation of all reasonable and feasible best practice noise mitigation measures and methods to reduce the noise generated by the development to comply with relevant noise criteria, including maximum noise levels which may result in sleep disturbance.

As part of the MGO asset management of key plant and equipment, MGO will seek to incorporate reasonable and feasible best practice noise attenuation on mining equipment through the continuous improvement investigation process.

3.4 Assessment of Noise Data

3.4.1 Compliance Assessment

Attended noise monitoring is used to quantify and describe the acoustic environment around a site. The results of the attended noise monitoring are recorded, analysed and compared with the noise criteria defined in **Table 3-2**, **Table 3-3** and **Section 2.1** and in the relevant Development Consents to assess compliance.

The MGO noise monitoring program also includes an assessment of compliance against noise impact assessment criteria, land acquisition criteria, cumulative criteria and the key commitments made in the MOCO EIS and Glendell EA and the associated modifications to SSD-5850 and DA 80/952.

To determine the impact of MGO on sleep arousal the attended noise surveys include the assessment of the $L_{A1,1\text{minute}}$ noise levels generated by the mine. The measured $L_{A1,1\text{minute}}$ noise levels are then compared with the relevant sleep arousal criteria to assess compliance of the mine with the relevant Development Consent and EPL criteria.

To determine compliance with the cumulative noise level criteria the noise levels recorded by the MGO real time noise monitoring network are used to assess the $L_{Aeq,period}$ noise levels from all industrial noise sources. Management of cumulative impacts are detailed in **Section 2.1.4**.

3.4.2 Operational Performance Assessment

Ongoing performance assessment of operational noise from MGO operations is evaluated regularly through the assessment of real time monitoring data against the criteria in the relevant development consent. Any anomalous results from the monitoring program will be assessed as soon as possible with reference to digital audio recordings, operational factors, meteorological conditions and external influences. Any learnings will then be communicated to relevant site personnel and used to improve noise management across the MGO.

In order to manage noise impacts as a result of significant variations to equipment fleet over time, MGO will undertake an assessment of their equipment fleet against the indicative equipment list outlined in SSD-5850 (Mount Owen Mine) and DA 80/952 (Glendell Mine) every 5 years to confirm that noise impacts have not significantly changed. If the equipment list has substantially changed, the change management process will be triggered.

In accordance with SSD-5850 Schedule 3 Condition 6(b) noise sensitive locations (i.e. areas with the potential to generate increased noise at privately-owned residences, such as areas near the boundary of the site or elevated land/overburden emplacements) at MGO have been identified as:

- Pre-strip in the Mount Owen North Pit;
- All mining activities in the Barrett Pit; and
- Rehabilitation activities in the southern extent of the Barrett in-pit waste emplacement area.

As part of ongoing performance assessment, refinement of the mine design will be undertaken through the Mining Operation Plan (MOP). Where reasonable and feasible the mine design will include provisions for refinement and minimisation of noise impacts at MGO. Features of mine design that may be included in the MOP include:

- Bunds will be included in strategic locations along some haul roads, and where practicable be located along the exposed side of the ramps, shielding noise from trucks and equipment on exposed sections of the ramps.
- In the later years of the MOCO Project, the primary coal haul road to the Mount Owen CHPP will be located on the western side of the North Pit Continuation.
- Location and orientation of haul roads will consider prevailing source to receiver winds, where practicable and some key haul roads within the North Pit Continuation will be located below ground surface to maximise topographical shielding to surrounding receiver areas.
- Design of the out of pit dumping sequence to allow for mining equipment to dump in higher exposed areas in the day time and within protected lower areas during the night time periods, where practicable during adverse weather conditions.

The real time noise monitoring network located in the surrounding region and predictive forecasting of adverse meteorological conditions (see **Section 3.2** and **Section 3.3**) will continue to assist with the ongoing management of potential noise impacts from the MGO operations.

The real time noise monitoring network reports recorded noise levels to the mine every day and sends alerts when predefined noise levels have been exceeded.

This approach allows the mining operations to compare their actual performance with the performance predicted in the relevant EIS/EA for each stage of the operation. This process provides MGO with the information needed to proactively manage noise impacts on surrounding noise receiver areas.

The results from the real-time noise monitoring network are also used to:

- a) Supplement the attended noise monitoring program as it collects data at the same time as attended noise monitoring; and
- b) Assist in the validation of the compliance noise model by filtering noise level data measured under the meteorological conditions consistent with those used to determine the noise emissions limits.

Where applicable, MGO will compare the results of the attended noise monitoring with the results of the real time monitors and any targeted noise monitoring for the same period. Information gained from this comparison, as part of the continuous improvement process, will validate the accuracy of the measurements of the real time monitors and provide the mine with an improvement process to calibrate the real time noise monitoring alarms to facilitate the provision of accurate and effective data.

3.5 Training and Communication

Generic environmental awareness noise training is provided to all employees and contractors through the GCAA Generic Surface Induction and the Site Familiarisation.

From time to time, workforce communication days and toolbox talks allow for discussion of the objectives and requirements of this and any other relevant Plans.

Selected site personnel whose duties directly involve the management of noise at MGO will undertake specific training in regards to site Operational Procedures which incorporate noise management measures and the operation of noise monitoring and meteorological monitoring systems.

This training will be annually and when there is a change in personnel in key roles.

4. Measurement and Evaluation

4.1 Attended Noise Monitoring Results

In the event an attended noise monitoring result is identified as an exceedance of the adopted performance criteria outlined in Schedule 3 Condition 5 of SSD-5850 or Schedule 3 Condition 2 of DA 80/952 at primary monitoring locations or secondary monitoring locations the steps in **Figure 4.1** will be followed with the exception of where:

- An exceedance is predicted in the relevant EIS/EA (and associated modification assessments);
- A negotiated agreement has been entered into in relation to the impact; or
- The meteorological conditions do not apply, as outlined in **Appendix 4** of SSD-5850 or Schedule 3 Condition 2 of DA 80/952.

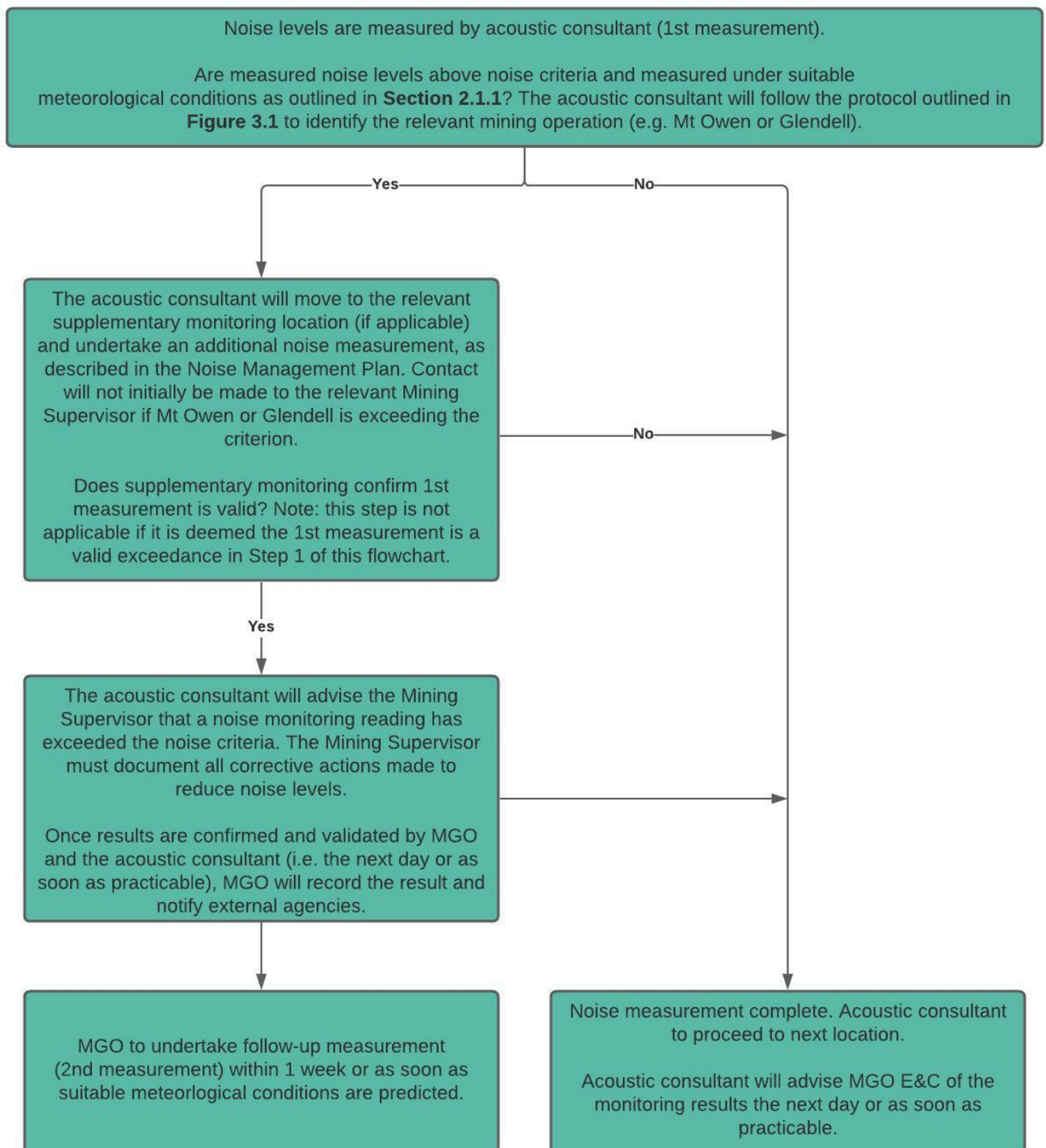


Figure 4.1 Performance Criteria Exceedance Protocol

4.2 Record Keeping

Noise monitoring data is maintained in accordance with the MGO EMS and maintained on the premises for a period of 4 years.

4.3 Corrective Action

Data from the real time noise monitors will be downloaded daily, or as required. A trigger will notify the relevant site personnel (via SMS and/or email) of a potential exceedance of criteria, which will initiate corrective action. As a minimum, corrective actions to be taken may include:

- Review available information from the real time noise monitoring network;
- Review available live audio stream;
- If MGO operations are a contributor to noise levels, initiate the Noise TARP (refer to **Section 3.2.2**).
- The real time noise network will be monitored until noise levels have returned to within criteria limits;
- Reporting, if required, to relevant regulatory authorities.

The data will be assessed against the relevant criteria (refer to **Section 2.1**). **Table 4-1** summarises the potential noise issues that may arise and the appropriate corrective action to be taken.

Table 4-1 Corrective Actions in Response to Potential Noise Issues

Issue	Corrective Action
Noise alarm is received at site from a real-time noise monitor	Mining Supervisor is to refer to the Noise Management TARP detailed in the site procedures and record actions taken in response to the alarms. The following site procedures are used across the MGO to respond to Noise Alarms: • Glendell Mining Supervisor Environment and Community Guidance Notes; and • Mount Owen Response to Noise Alarms.
Preliminary elevated attended monitoring result (non noise-affected period)	If a preliminary an attended monitoring result exceeds the criterion but is not noted as a noise affected period due to mitigation or other actions, the results will be communicated to DPIE (the Secretary) the next day (or as soon as practicable) via email, along with information on any actions taken to reduce operational noise.

Issue	Corrective Action
Attended monitoring non-compliance of noise criteria (noise affected period)	Relevant stakeholders (including affected landowners and nearby mining operations), DPIE (the Secretary) and the EPA are advised immediately of any exceedance of any relevant criteria in the SSD-5850 or DA 80/952. An environmental incident investigation will be performed to determine the causes for the non-compliance. An investigation report will be provided to DPIE within 7 days of the event occurring in accordance with Schedule 5, Condition 9 of SSD-5850 and DA 80/952. MGO will also provide regular monitoring results to each affected landowner until the development is again complying with the relevant criteria. Details of non-compliance and the outcomes of investigations will be reported to Senior Management, DPIE (the Secretary), EPA and affected residents. Monitoring will be organised within 7 days of initial monitoring event
Community complaints	Investigation of complaint, implementation of mitigating measures where required and provision of feedback to complainant. Report complaint to Senior Management. Provide feedback to mine planning and production personnel, where relevant.

4.4 Complaints Management

MGO operates a dedicated Community Contact Line which is in operation 24 hours per day, seven days a week. The details of this are advertised in local newspapers at least quarterly, via the MGO Community Newsletter and on the MGO website.

All complaints received by MGO are managed in accordance with the GCAA **Community Complaint Management** standard and the MGO EMS, which detail the process so that complaints are properly documented and handled in accordance with licence requirements and company policy.

The procedures provide a consistent approach to managing any complaints. All complaints are thoroughly investigated, including use of digital audio files, environmental and meteorological monitoring data, in conjunction with operating records to determine any likely cause. Feedback to the complainant is provided as quickly as possible.

A community complaint report is included in the Annual Review with a community complaint summary uploaded to the MGO website monthly. In addition, all complaints will be reported to Senior Management via an established reporting system.

Details of complaints relating to noise will be provided to relevant mine planning and production personnel, to assist in the improvement of management practices. Actions to be taken in response to a noise complaint are described in **Section 4.3**.

4.5 Dispute Resolution and Land Acquisition

4.5.1 Non-Compliance

If noise monitoring results confirm that noise generated by the Mount Owen Mine (i.e. MGO excluding operations related to the Glendell Mine) or Glendell Mine exceeds noise criteria (except where an

alternative agreement with the landowner exists) then the Secretary of DPIE and any affected residents will be notified and provided with quarterly monitoring results until results show compliance with the noise impact assessment criteria.

If within three months of receiving this written request, MGO and the affected landholder cannot agree on the noise mitigation measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary of DPIE for resolution.

4.5.2 Land Acquisition

Upon receiving a written request from the owner of any land listed in either Table 1 of SSD-5850, or Table 1 of DA 80/952 MGO will acquire the land in accordance with the relevant procedures in Conditions 5 and 6 of Schedule 4 SSD-5850 and in Conditions 9 to 11 of Schedule 4 DA 80/952. **Table 4-2** provides a consolidated list of properties with acquisition rights. It should be noted that this table does not include those properties that were listed in the development consents but have since been acquired and are currently mine-owned.

Table 4-2 Acquisition Properties

Consent	Property Number
SSD-5850	21, 22*, 23
DA 80/952	37a, 37b, 61

Note

** The identified land has been acquired.*

These requirements apply in addition to the land acquisition criteria previously discussed in **Section 2.1.3**.

4.5.3 Noise Mitigation upon Request

Upon receiving a written request from the owner of any residence listed in the noise section of Table 1 or Table 2 of SSD-5850 or Table 1 or Table 4 of DA 80/952, MGO will implement additional mitigation measures at the residence. These measures will be reasonable and feasible, and directed towards reducing the noise impacts of the development on the residence and may include measures such as double-glazing, insulation and/or air conditioning. **Table 4-3** provides a consolidated list of properties with additional mitigation rights.

Table 4-3 Noise Mitigation Properties

Consent	Property Number
SSD-5850	13, 19, 93
DA 80/952	27, 31, 37a, 47, 50, 83, 110

These requirements apply in addition to the noise mitigation criteria previously discussed in **Section 2.1.5**.

4.5.4 Landowner Independent Review

If a landowner believes that the Mount Owen Mine (i.e. the Mount Owen Mine excluding operations related to the Glendell Mine) is exceeding noise criteria listed in Schedule 3 of SSD-5850 the landowner may ask the Secretary of DPHI in writing for an independent review of the noise impacts on his/her land. If the Secretary of DPHI is satisfied that an independent review is warranted, then within two months of the Secretary advising, a review will be in accordance with conditions outlined in Schedule 4 Condition 4 of SSD-5850.

If a landowner believes that the Glendell Mine (i.e. the Glendell Mine excluding operations related to Mount Owen Mine) is exceeding noise criteria in DA 80/952 the landowner may ask the Secretary of DPIE in writing for an independent review of the noise impacts on his/her land. If the Secretary of DPHI is satisfied that an independent review is warranted, then within two months of the Secretary advising, a review will be conducted in accordance with conditions outlined in Schedule 4 of the Glendell Development Consent (DA 80/952).

5. Review and Improvement

5.1 Reporting

Environmental monitoring result summaries, compliance with Development Consent and Licence conditions and any required modifications to noise monitoring will be reported in the Annual Review. Details of continuous improvement measures will be reported in the Annual Review. Summaries will also be made available to the public via the MGO website in accordance with the EPA requirements for publishing monitoring data.

All reporting requirements are maintained in the CMO database management system utilised at the MGO.

5.2 Plan Review

This Plan and associated documents will be reviewed in accordance with the MGO EMS. The EMS states that such reviews must occur within 3 months of the following actions required under the conditions of both SSD-5850 and DA 80/952:

- The submission of an Annual Review under Condition 5 Schedule 5;
- The submission of an environmental incident report under Condition 9 Schedule 5;
- The submission of an Independent Environmental Audit under Condition 11 Schedule 5; or
- Any modification to the conditions of consent (unless the conditions require otherwise).

The review process is also undertaken to reflect changes in environmental legislation and guidelines and changes in technology or operational procedures. If any significant modifications to the Noise Management Plan are required as an outcome of the review, relevant government agencies will be consulted regarding the changes and the revised Plan will be submitted to DPHI for approval by the Secretary within 4 weeks. Minor edits, such as formatting edits will be discussed verbally with DPHI prior to completion.

MGO will continually review noise mitigating activities or noise reducing technology in accordance with Section 3.4.1 the GCAA **Noise Management Protocol** (mentioned in Section 1.4.1). Results of this will be reported in the Annual Review submitted to government departments each year.

Incidents will be reported in accordance with the MGO **Hazard and Incident Management Procedure** and the GCAA **HSEC STD 6.0 Incident** (or its latest revision).

Change management in relation to this Noise Management Plan will be in accordance with the MGO EMS and Section 3.4.3 the GCAA **Noise Management Protocol**.

5.3 Audits

In accordance with the conditions for the MGO Development Consents, within 12 months of commencement of the development, and every three years thereafter, MGO will commission an Independent Environmental Audit to the satisfaction of DPIE. The Independent Environmental Audit will include an assessment of the adequacy of this Noise Management Plan. Where necessary following the audit, this Plan will be updated and action taken to improve performance and management practices.

6. Commitments

All commitments outlined within this management plan are detailed in **Table 6-1** below. These commitments are requirements under the Development Consents SSD-5850 and DA 80/952 and relevant Impact Assessments. Management commitments requiring actioning will be entered into the MGO Compliance Management system (CMO) and actioned. Records associated with the actions undertaken to address management commitments will also be maintained within the CMO.

Table 6-1 Management Plan Commitments

No.	Commitment	Location in Management Plan
1.	Attended monitoring of the MGO will include an assessment of the rail noise from trains accessing the MGO under control of MGO. Assessment of rail noise from trains within control of MGO will be in accordance with the INP (EPA, 2000) and thus considered part of the overall industrial noise contribution from the MGO and be assessed under the criteria in Table 2-1 Consideration will be given to rail noise contributions within control of MGO, when audible, at all attended noise monitoring locations.	Section 2.2 <i>Schedule 3</i> <i>Condition 6a,6e</i> <i>(SSD-5850)</i>
2.	Noise due to construction activities will be managed in accordance with the provisions of the <i>Interim Construction Noise Guideline</i> (DECC, 2009). Specific construction noise management practices, including project specific mitigation and management controls, will be documented in the construction management plan for the Hebden Road and Rail Line Works, as well as in this Management Plan.	Section 3.1.2 <i>Schedule 3</i> <i>Condition 5A</i> <i>(DA 80/952)</i> <i>Schedule 3</i> <i>Condition3 (SSD-5850)</i>
3.	Prior to construction activities occurring in the southern section of rail turnout during outage windows, Mount Owen will consult with residents R111 and R122 as per the requirements of the ICNG.	Section 3.1.2
4.	Supplementary locations may also be used if potentially high noise levels are recorded at the routine monitoring locations. The additional monitoring locations form part of the performance management program enabling MGO to gauge mine audibility over a wider area.	Section 3.3.3 Section 3.3.4
5.	If noise complaints are received by MGO from residents in Area 2, Area 5, or Area 11 MGO will undertake targeted noise monitoring at suitable locations representing the affected resident(s). Monitoring will be undertaken at these locations until such time that noise levels reduce to within the noise criteria limits specified in Section 2.1.	Section 3.3.4
6.	Monitoring will be targeted to occur on nights where forecast meteorological conditions are expected to be within development consent requirements for noise monitoring to minimise data exclusions due to adverse weather conditions.	Section 3.3.2 <i>Appendix 4</i> <i>Condition 1</i> <i>(SSD-5850)</i>

No.	Commitment	Location in Management Plan
7.	Prior to attended monitoring, meteorological data will be assessed to determine if any site would be likely to return a noise level well below the criteria or would be expected to be inaudible (i.e. upwind monitoring location).	Section 3.3.2 <i>Appendix 4</i> <i>Condition 5</i> <i>(SSD-5850)</i>
8.	Meteorological monitoring will utilise the MGO Sentinex (SX) weather stations. Temperature lapse rate will be determined using wind stability classes in accordance with the methods described in the INP.	Section 3.3.5 <i>Appendix 4</i> <i>Condition 2</i> <i>(SSD-5850)</i>
9.	The following noise control measures where not already implemented at the MGO, will be implemented as part of SSD-5850: • Use of smart broadband 'Quacker' reversing signal • Regular inspection and maintenance of noise attenuation systems; • Periodic review of the noise performance of equipment fleet at a minimum review rate of 20% of the mobile fleet per year.	Section 3.3.6.6 <i>Appendix 3</i> <i>Condition 1.6.1</i> <i>(DA 80/952)</i>
10.	As part of the MGO asset management of key plant and equipment, MGO will seek to incorporate reasonable and feasible best practice noise attenuation on mining equipment through the continuous improvement investigation process.	Section 3.3.6
11.	Any anomalous results from the real time monitoring program will be assessed as soon as possible with reference to digital audio recordings, operational factors, meteorological conditions and external influences. Any learnings will then be communicated to relevant site personnel and used to improve noise management across the MGO.	Section 3.4.2
12.	MGO will undertake an assessment of their equipment fleet against the indicative equipment list outlined in SSD-5850 (Mount Owen Mine) and DA 80/952 (Glendell Mine) every 5 years to confirm that noise impacts have not significantly changed. If the equipment list has substantially changed, the change management process will be triggered.	Section 3.4.2
13.	The real time noise monitoring network reports recorded noise levels to the mine every day and sends alarms when predefined noise levels have been exceeded.	Section 3.2.2 and 3.3.3 <i>Schedule 3</i> <i>Condition 6</i> <i>(SSD-5850)</i>
14.	Where applicable, MGO will compare the results of the attended noise monitoring with the results of the real time monitors and any targeted noise monitoring for the same period. Information gained from this will validate the accuracy of the measurements of the real time monitors and provide the mine with an improvement process to calibrate the real time noise monitoring alarms to facilitate the provision of accurate and effective data.	Section 3.4.2 <i>Schedule 3</i> <i>Condition 7</i> <i>(SSD-5850)</i>

No.	Commitment	Location in Management Plan
15.	Selected site personnel whose duties directly involve the management of noise at MGO will undertake specific training in regards to site Operational Procedures which incorporate noise management measures and the operation of noise monitoring and meteorological monitoring systems. This training will be annually and when there is a change in personnel in key roles.	Section 3.5
16.	In the event an attended noise monitoring result is identified as an exceedance of the performance criteria outlined in Schedule 3 of SSD-5850 or Schedule 3 of DA 80/952 at a monitoring location the steps in Figure 4.1 will be followed with the exception of where an exceedance is predicted in the relevant EIS or where a negotiated agreement has been entered into in relation to the impact or where the meteorological conditions do not apply, as outlined in Appendix 4 of SSD-5850.	Section 4.1 <i>Schedule 3</i> <i>Condition 5;</i> <i>Appendix 4</i> <i>Condition 2 (SSD-5850)</i> <i>Schedule 3</i> <i>Condition 2 (DA 80/952)</i>
17.	A Noise Management Trigger Action Response Plan (TARP) has been developed for the Camberwell Village area. The TARP details the limits and response required by the mine in the event noise alarms are triggered.	Section 3.2.2
18.	Records of the assessment of cumulative noise impacts will be reviewed quarterly by the independent consultant conducting the attended monitoring program. A statement on compliance with the cumulative noise criteria will be prepared based on the quarterly review of the records maintained by MGO.	Section 3.1.3 <i>Schedule 3</i> <i>Condition 5 (DA 80/952)</i>
19.	Attended noise monitor results will be reviewed regularly. A trigger will notify site personnel of a potential exceedance of criteria, which will initiate corrective action as described in Table 4-1 .	Section 3.3.3 and 4.3
20.	MGO operates a dedicated Community Contact Line which is in operation 24 hours per day, seven days a week. The details of this are advertised in local newspapers at least quarterly, via the MGO Community Newsletter and on the MGO website.	Section 4.4
21.	If noise monitoring results confirm that noise generated by the MGO exceeds noise criteria (except where an alternative agreement with the landowner exists) then the Secretary of DPIE and any affected residents will be notified and provided with quarterly monitoring results until results show compliance with the noise impact assessment criteria.	Section 4.5.1
22.	Environmental monitoring result summaries, compliance with Consent and Licence conditions and any required modifications to the noise monitoring will be reported in the Annual Review. Details of continuous improvement measures will be reported in the Annual Review. Summaries will also be made available to the public via the MGO website in accordance with the EPA requirements for publishing monitoring data.	Section 5.2 <i>Schedule 3</i> <i>Condition 7 (DA 80/952)</i>
23.	This Noise Management Plan and associated documents will be reviewed in accordance with the MGO EMS. If any significant modifications to the Noise Management Plan are required as an outcome of the review,	Section 5.2

No.	Commitment	Location in Management Plan
	relevant government agencies will be consulted regarding the changes and the revised Plan will be submitted to DPIE for approval by the Secretary within 4 weeks.	
24.	MGO will continually review noise mitigating activities or noise reducing technology in accordance with Section 3.4.1 of GCAA-625378177-10238 - 11.11 Noise Management. Results of this will be reported in the Annual Review submitted to government departments each year.	Section 1.5.2 and 5.2

7. Accountabilities

Role	Accountabilities for this document
Operations Manager	- Confirm that adequate resources are available to implement the requirements of this Plan. - Confirm the program is relevant to current operations.
MGO Environment & Community Manager	- Oversee the implementation of the noise monitoring program. - Coordinate noise monitoring in accordance with this Plan. - Notify regulatory authorities and affected landowners of any noise related exceedance and undertake associated reporting. - Coordinate periodic reviews of this Plan.
Environment and Community Coordinator	- Coordinate noise monitoring in accordance with this Plan. - Develop and maintain a protocol for evaluating compliance with noise criteria contained in this Plan. - Develop and maintain a protocol for assessment and response to real time noise monitoring data. - Coordinate investigations of noise exceedances or complaints and implementation of any relevant mitigation and controls. - Coordinate regular training for personnel involved with managing noise. - Assist and jointly coordinate periodic reviews of this Plan.
Mining Supervisors/ Open Cut Examiner	- Respond to potential exceedances of noise criteria as identified by the real time noise monitoring system. - Review operations in response to alerts and modify or cease operations as appropriate. - Report to the Environment and Community Coordinator on response to alerts. - Continually assess the need for noise control measures according to operational and climate conditions. - Assist the Environment and Community Coordinator with investigations into noise exceedances, incidents or complaints.

Role	Accountabilities for this document
Employees and Contractors	All employees and contractors are required to comply with the requirements of this Plan.

8. Definitions

Term	Definition
Breach	Failure to address and rectify sustained non-compliance will place a development in breach of its noise consent/licence condition.
Compliance	The process of checking that source noise levels meet with the noise limits in a statutory context.
Daytime	In relation to noise criteria it is the period 7am to 6 pm Monday to Saturday and 8 am to 6 pm Sunday and Public Holidays.
Decibel dB(A)	A decibel scale, weighted so that it takes into account the frequency response of the normal human ear.
Evening	In relation to noise criteria is the period 6 pm to 10 pm.
GCAA	Glencore Coal Assets Australia – owner of MGO.
Glendell Mine	Mining Operations approved under development consent DA 80/952, consisting of mining operations in the Barrett Pit and associated mining infrastructure.
L_{Aeq} (Period)	The average noise level, measured in dB(A), during a measurement period.
L_{A1}	The noise level, measured in dB(A), which is exceeded for 1 percent of the measurement period.
MGO	Mt Owen Pty Ltd – owner and operator of the Mt Owen Complex being a wholly owned subsidiary business unit of GCAA.
Mount Owen Mine	Mining Operations approved under development consent SSD-5850, consisting of mining operations in the Bayswater North Pit, the North Pit and the Mount Owen coal handling and preparation plant (CHPP), coal stockpiles and rail load-out facility.
Night	In relation to noise criteria it is the period 10 pm to 7 am Monday to Saturday and 10 pm to 8 am Sundays and public holidays. For the purposes of attended noise monitoring, in accordance with the DPIE NSW Draft Guideline: Mining. Noise Monitoring Application Note, night time monitoring can commence at 9PM.
Non-Compliance	An occurrence, set of circumstances or development that is a breach of consent or licence.

Term	Definition
Performance Management	An adaptive management approach to noise that focused on implementing appropriate operational controls and management strategies to minimise noise impacts. The controls and management strategies to be implemented are based on the results of the compliance attended monitoring, the results and alarms from the real time noise monitoring network, and supplementary attended monitoring, as required to assess the performance of the operation against the criteria in the relevant development consent.

9. Document Information

9.1 Relevant Legislation

The following legislation is relevant to this Plan:

- *Environmental Planning and Assessment Act 1979*
- *Protection of the Environment Operations Act 1997*
- *Protection of the Environment Operations (Noise Control) Regulation 2008*
- *NSW Noise Policy for Industry (EPA, 2017)*
- *NSW Interim Construction Noise Guidelines (DECC, 2009)*
- *NSW Road Noise Policy (DECCW, 2011)*
- *Rail Infrastructure Noise Guideline (NSW EPA, 2013)*
- *Work Health and Safety Act 2011*
- *Explosives Act 2003.*

9.2 Related Documents

Related documents, listed in **Table 9-1** below, are internal documents directly related to or referenced from this document.

Table 9-1 Related Documents

Number	Title
GCAA	
GCAA-625378177-9992	6.0 Incident Standard
CAA HSEC PRO 0009	11.01 Annual Environment and Community Risk Assessments
CAA HSEC POL 0004	11.11 Noise Management
CAA HSEC FRM 0014	11.01 Noise Complaint Data
MGO	
MGOOC-1779562647-11191	Environmental Management Strategy
MGOOC-899305957-18	Hazard and Incident Management Procedure
MGOOC-1515489201-825	Glendell Mining Supervisor Environment and Community Guidance Notes
References	
ERM 1999	ERM Mitchell McCotter Pty Ltd, 1999. The Ravensworth East Mine Environmental Impact Statement
Umwelt 2003	Umwelt Australia Pty Ltd, 2003. The Mt Owen Operations Environmental Impact Statement
Umwelt 2007	Umwelt Australia Pty Limited, 2007. Environmental Assessment for Modification of Glendell Mine Operations.

Number	Title
Umwelt 2015	Mount Owen Continued Operations Project Environmental Impact Statement
Umwelt 2018	Mt Owen Continued Operations Project Modification 2 Statement of Environmental Effects
Umwelt 2018b	Glendell Mine Modification 4 Statement of Environmental Effects
Umwelt 2020	Mount Owen Continued Operations Project Modification 6, Modification Report
EPA 2017	Environment Protection Authority, 2017. New South Wales Noise Policy for Industry
DP&E, no date	Department of Planning & Environment, no date. NSW Draft Guideline: Mining Noise Application Note (DRAFT).
DECC NSW 2009	Interim Construction Noise Guideline
Transport for NSW 2011	Construction Noise Strategy
RMS 2016	Construction Noise and Vibration Guideline

9.3 Change Information

Full details of the document history are recorded in the document control register, by version. A summary of the current change is provided in **Table 9-2** below.

Table 9-2 Change Information

Version	Date	Review team (consultation)	Change Summary
1.0	Jun 2005	Senior E&C Coordinator	Original Document
2.0	Dec 2007	Senior E&C Coordinator	Review to include Glendell and finding from the Independent review of the DC and EPL's.
3.0	Nov 2011	E&C Manager, Ops Manager	Review of Document
4.0	Nov 2013	E&C Manager	Update of document to include change of Ownership from Xstrata to Glencore and a review of the Noise Management plan to conform to the NSW Draft Guideline: Mining – Noise Monitoring Application Note.
5.0	Aug 2014	E&C Manager	Updated Cumulative Noise management section and revised the real time monitoring locations and included the alarming levels for each monitor. Also included the Noise TARP for Camberwell Village as Appendix 1.
6.0	Dec 2014	E&C Manager	Removed the Noise TARP and referenced the procedures in the text.

Version	Date	Review team (consultation)	Change Summary
7.0	Aug 2015	E&C Manager, E&C Coordinator	Amended the Noise Monitoring Locations Map. Updated the alarm levels.
8.0	Nov 2015	E&C Manager	Transferred the document into the Glencore template and updated the alarm information the Camberwell village, also included training and GCAA requirements.
9.0	December 2016	MGO EMS Committee	Changed title of document from “Noise Monitoring Program” to “Noise Management Plan”. Updated text to include requirements relating to Development Consent SSD-5850 and Glendell DA 80/952 MOD 3.
New SharePoint			
1.0	October 2017	E&C Manager, E&C Officer, Theiss Senior Environmental Adviser	Update MGO meteorological stations.
2.0	February 2018	E&C Manager, E&C Officer	Removed duplicate commitments continued in approvals or other management plans.
3.0	September 2018 February 2019	E&C Manager, E&C Officer	Updates to text in response to comments received from DPIE. Removed completed obligations and updates to text in response to comments received from DPIE.
4.0	November 2019 March 2020	E&C Department	Review and revision of plan following approval of MOCO MOD 2 and variation of EPL 4460. Minor administrative revision to incorporate Glendell MOD 4 DA 80/952 and MOCO MOD 3 SSD-5850.
5.0	May 2021 November 2021 January 2022 October 2023	E&C Department	Re-format of plan to new GCAA Plan template. Review and minor revision to incorporate MOCO MOD 6 SSD-5850. Response to DPIE comments following document submission. Update to incorporate MOCO MOD 7 SSD-5850 and minor administrative updates.
6.0	March 2024	E&C Department	Revised to include reference GCAA HSEC STD 6.0 Incident.
7.0	July 2024	E&C Department	Minor administrative revision to incorporate Glendell MOD 5 DA 80/952
8.0	July 2024	E&C Department	No changes, only aligning with SharePoint version history.

Appendix A – Statutory Requirements

Table A-1 Relevant Development Consent Conditions

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan										
Schedule 3, Condition 1		Acquisition upon request Upon receiving a written request from the owner of any land listed in Table 1, the Applicant must acquire the land in accordance with the procedures in Conditions 5 and 6 of Schedule 4. <table><tr><td colspan="2">Table 1: Land subject to acquisition upon request</td></tr><tr><th>Acquisition Basis</th><th>Land ^a</th></tr><tr><td>Air Quality</td><td>105^b, 114, 115, 116^a, 133^c, 4, 112, 143^d, 150^d, 152^d, 154^d, 155^d, 156^d, Lot 4 DP 1166047^d, Lot 5 DP 1166047^d, Lot 175 DP 1002770^d and Lot 106 DP 855187^d</td></tr><tr><td>Noise</td><td>21, 22^e, 23</td></tr></table> <i>a The location of the land referred to in Table 1 is shown on the figure in Appendix 3.</i> <i>b The Applicant is only required to acquire property 105, if its acquisition is not reasonably achievable under the approval for the Rix's Creek North open cut mine.</i> <i>c The Applicant is only required to acquire Lot 31 DP6842 and Lot 2 DP1175728 within property 133.</i> <i>d The Applicant is only required to acquire the identified land if acquisition is not reasonably achievable under the development consents for the Ashton South East Open Cut Project (MP 08_0182), the Glendell Open Cut Coal Mine (DA 80/952), Ravensworth Operations Project (MP 09_0176), Rix's Creek South Continuation of Mining Project (SSD 6300) or the Rix's Creek North Open Cut Project (MP 08_0102).</i> <i>e The identified land has been acquired by the Applicant.</i>	Table 1: Land subject to acquisition upon request		Acquisition Basis	Land ^a	Air Quality	105 ^b , 114, 115, 116 ^a , 133 ^c , 4, 112, 143 ^d , 150 ^d , 152 ^d , 154 ^d , 155 ^d , 156 ^d , Lot 4 DP 1166047 ^d , Lot 5 DP 1166047 ^d , Lot 175 DP 1002770 ^d and Lot 106 DP 855187 ^d	Noise	21, 22 ^e , 23	Section 4.5.2		
	Table 1: Land subject to acquisition upon request												
Acquisition Basis	Land ^a												
Air Quality	105 ^b , 114, 115, 116 ^a , 133 ^c , 4, 112, 143 ^d , 150 ^d , 152 ^d , 154 ^d , 155 ^d , 156 ^d , Lot 4 DP 1166047 ^d , Lot 5 DP 1166047 ^d , Lot 175 DP 1002770 ^d and Lot 106 DP 855187 ^d												
Noise	21, 22 ^e , 23												
Schedule 3, Condition 1		Upon receiving a written request for acquisition from the owner of the land^a listed in Table 1, the Applicant must acquire the land in accordance with the procedures in conditions 9-11 of schedule 4. <table><tr><td colspan="2">Table 1: Land subject to acquisition upon request</td></tr><tr><td>37a & 37b – Richards</td><td>Lot 13 DP 6830 – Gardner</td></tr><tr><td>61 – Donellan</td><td>Lot 12 DP 6830 – Noble</td></tr><tr><td>62 – Noble (b)</td><td>Lot 1 DP 770733 – Noble</td></tr><tr><td>65 – Noble</td><td></td></tr></table> <i>^a The locations of the land referred to in Table 1 are shown in Appendix 4</i> <i>Note: Lands titled 62 – Noble (b), 65 – Noble, Lot 13 DP 6830 – Gardner, Lot 12 DP 6830 – Noble and Lot 1 DP 770733 – Noble have been acquired and are now mine-owned.</i>	Table 1: Land subject to acquisition upon request		37a & 37b – Richards	Lot 13 DP 6830 – Gardner	61 – Donellan	Lot 12 DP 6830 – Noble	62 – Noble (b)	Lot 1 DP 770733 – Noble	65 – Noble		Section 4.5.2
	Table 1: Land subject to acquisition upon request												
37a & 37b – Richards	Lot 13 DP 6830 – Gardner												
61 – Donellan	Lot 12 DP 6830 – Noble												
62 – Noble (b)	Lot 1 DP 770733 – Noble												
65 – Noble													
Schedule 3, Condition 2		Additional mitigation upon request Upon receiving a written request from the owner of any residence listed in Table 1 or Table 2, the Applicant must implement additional mitigation measures at the residence, in consultation with the landowner, in respect of the basis on which that residence is identified in Table 1 or Table 2. These measures must be reasonable and feasible, and directed towards reducing the air quality and/or noise impacts of the development on the residence. In the case of air quality, mitigation may include measures such as air filters, a first flush drainage system and/or air conditioning. In the case of noise, mitigation may include measures such as double-glazing, insulation and/or air conditioning.	Section 4.5.3										

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan				
		If within 3 months of receiving this request from the owner, the Applicant 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 Secretary for resolution. <table border="1"><caption>Table 2: Land subject to additional mitigation upon request</caption><tr><th>Mitigation Basis</th><th>Residence^a</th></tr><tr><td>Noise</td><td>13, 19, 93</td></tr></table> ^a The location of the land referred to in Table 2 is shown on the figure in Appendix 3.	Mitigation Basis	Residence ^a	Noise	13, 19, 93	Section 4.5.3
Mitigation Basis	Residence ^a						
Noise	13, 19, 93						
Schedule 3, Condition 3		Construction - Hebden Road and Rail Line Works The Applicant must manage noise from construction activities associated with the Hebden Road upgrade works and additional rail line, in accordance with the noise management levels defined in Table 2 of the Interim Construction Noise Guideline. The Applicant must also ensure that the combined operational and construction noise from the development does not exceed a level of 5 dB(A) above the daytime operational $L_{Aeq(15min)}$ noise criteria in Table 3 during Standard Construction Hours (7 am to 6 pm, Monday to Friday; and 8 am to 1 pm on Saturdays) and does not exceed the evening or night time operational $L_{Aeq(15min)}$ noise criteria in Table 3, except where an alternative temporary limit has been approved by the Secretary for specific works or where the Applicant has an agreement with the owner/s of the relevant residence/land to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement.	Section 2.1.2				
Schedule 3, Condition 4		In seeking an alternative temporary construction noise limit above the levels identified in condition 3, the Applicant must submit a Construction Noise Work Protocol to the Secretary for approval, prior to undertaking the nominated construction works. This protocol must: (a) be prepared to the satisfaction of the Secretary; (b) be prepared in consultation with the EPA and any landowners who may be affected by the proposed variation; and (c) address the relevant requirements of the Interim Construction Noise Guideline. The Applicant may only undertake construction activities that require a Construction Work Noise Protocol, in accordance with an approved Construction Noise Work Protocol as approved from time to time by the Secretary.	Section 3.1.2				

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan																																																												
Schedule 3, Condition 5		Noise Criteria The Applicant must ensure that the noise generated by the development (including rail movements along the Mount Owen Rail Loop, but excluding the construction works specified in condition 3), does not exceed the criteria in Table 3 at any residence on privately-owned land. <i>Table 3: Noise criteria dB(A)</i> <table><tr><th>Residence^a</th><th>Day / Evening / Night L_{Aeq}(15min)</th><th>Night L_{A1}(1min)</th></tr><tr><td>41, 48</td><td>36 / 35 / 35</td><td>45</td></tr><tr><td>91</td><td>37 / 37 / 36</td><td>45</td></tr><tr><td>14, 92</td><td>37 / 37 / 37</td><td>45</td></tr><tr><td>10, 11</td><td>37 / 37 / 37</td><td>46</td></tr><tr><td>13</td><td>38 / 38 / 38</td><td>45</td></tr><tr><td>12, 94, 95, 112</td><td>38 / 38 / 38</td><td>46</td></tr><tr><td>111</td><td>39 / 39 / 36</td><td>45</td></tr><tr><td>19</td><td>39 / 39 / 39</td><td>45</td></tr><tr><td>93</td><td>40 / 40 / 40</td><td>46</td></tr><tr><td>21, 23</td><td>41 / 41 / 41</td><td>45</td></tr><tr><td>122</td><td>42 / 42 / 42</td><td>50</td></tr><tr><td>All other residences Area 4 – South</td><td>37 / 37 / 36</td><td>46</td></tr><tr><td>All other residences Area 4 – North and all other residences Area 5</td><td>37 / 37 / 35</td><td>45</td></tr><tr><td>All other residences Area 6</td><td>40 / 40 / 40</td><td>50</td></tr><tr><td>All other residences Area 7</td><td>40 / 40 / 38</td><td>48</td></tr><tr><td>All other residences Area 8 – East</td><td>39 / 39 / 35</td><td>45</td></tr><tr><td>All other residences Area 8 – West</td><td>44 / 44 / 42</td><td>52</td></tr><tr><td>All other residences Area 9</td><td>48 / 48 / 43</td><td>53</td></tr><tr><td>Other privately-owned residences</td><td>35 / 35 / 35</td><td>45</td></tr></table> ^a The location of the land referred to in Table 3 is shown on the figure in Appendix 3. Noise generated by the development is to be measured in accordance with the relevant requirements of the NSW Noise Policy for Industry (as may be updated from time-to-time). Appendix 4 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria. However, these criteria do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Applicant has advised the Department in writing of the terms of this agreement.	Residence ^a	Day / Evening / Night L _{Aeq} (15min)	Night L _{A1} (1min)	41, 48	36 / 35 / 35	45	91	37 / 37 / 36	45	14, 92	37 / 37 / 37	45	10, 11	37 / 37 / 37	46	13	38 / 38 / 38	45	12, 94, 95, 112	38 / 38 / 38	46	111	39 / 39 / 36	45	19	39 / 39 / 39	45	93	40 / 40 / 40	46	21, 23	41 / 41 / 41	45	122	42 / 42 / 42	50	All other residences Area 4 – South	37 / 37 / 36	46	All other residences Area 4 – North and all other residences Area 5	37 / 37 / 35	45	All other residences Area 6	40 / 40 / 40	50	All other residences Area 7	40 / 40 / 38	48	All other residences Area 8 – East	39 / 39 / 35	45	All other residences Area 8 – West	44 / 44 / 42	52	All other residences Area 9	48 / 48 / 43	53	Other privately-owned residences	35 / 35 / 35	45	Section 2.1.1
	Residence ^a	Day / Evening / Night L _{Aeq} (15min)	Night L _{A1} (1min)																																																												
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111	39 / 39 / 36	45																																																													
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Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan																																																											
Schedule 3, Condition 2	Noise Impact Assessment Criteria The Applicant must ensure that the noise generated by the development does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land, or on more than 25% of any privately-owned land^a. <i>Table 2: Noise impact assessment criteria dB(A)</i> <table><tr><th>Land Number / Receiver</th><th>Day/Evening/Night LAeq(15 minute)</th><th>Night LA1(1 minute)</th></tr><tr><td colspan="3">Camberwell Village A</td></tr><tr><td>30 – Ninness 33 – Peachey 37c – Richards 53 – Yates</td><td>42</td><td>45</td></tr><tr><td>11 – Chisholm 22b – Turner 35 – Pugh</td><td>41</td><td>45</td></tr><tr><td>Other privately-owned land in Camberwell Village A</td><td>40</td><td>45</td></tr><tr><td colspan="3">Camberwell Village B</td></tr><tr><td>20 – Foord 21a & 21b – Merchant 38 – Robertson 47 & 50 – Vollebregt & Clarke</td><td>42</td><td>45</td></tr><tr><td>6 – Bennett 24 – Lopes</td><td>40</td><td>45</td></tr><tr><td>4 – Standing 40 – Smiles</td><td>39</td><td>45</td></tr><tr><td>32 – Green 44 – Stapleton</td><td>38</td><td>45</td></tr><tr><td>Other privately-owned land in Camberwell Village B</td><td>37</td><td>45</td></tr><tr><td colspan="3">Camberwell Village C</td></tr><tr><td>27 – McInerney 31 – Olofsson</td><td>40 38</td><td>45 45</td></tr><tr><td>Other privately-owned land in Camberwell Village C</td><td>35</td><td>45</td></tr><tr><td colspan="3">Other Privately-owned Land</td></tr><tr><td>37a & 37b – Richards 83 – Westcott 110 – Hall</td><td>38</td><td>45</td></tr><tr><td>34 – Poulton 87 – Fairfull</td><td>37</td><td>45</td></tr><tr><td>9 – Burgess 18 – Hall 45 & 46 – Tisdell</td><td>36</td><td>45</td></tr><tr><td>All other privately-owned land</td><td>35</td><td>45</td></tr><tr><td>Camberwell Hall and St Clements Church</td><td>40</td><td>-</td></tr></table>	Land Number / Receiver	Day/Evening/Night LAeq(15 minute)	Night LA1(1 minute)	Camberwell Village A			30 – Ninness 33 – Peachey 37c – Richards 53 – Yates	42	45	11 – Chisholm 22b – Turner 35 – Pugh	41	45	Other privately-owned land in Camberwell Village A	40	45	Camberwell Village B			20 – Foord 21a & 21b – Merchant 38 – Robertson 47 & 50 – Vollebregt & Clarke	42	45	6 – Bennett 24 – Lopes	40	45	4 – Standing 40 – Smiles	39	45	32 – Green 44 – Stapleton	38	45	Other privately-owned land in Camberwell Village B	37	45	Camberwell Village C			27 – McInerney 31 – Olofsson	40 38	45 45	Other privately-owned land in Camberwell Village C	35	45	Other Privately-owned Land			37a & 37b – Richards 83 – Westcott 110 – Hall	38	45	34 – Poulton 87 – Fairfull	37	45	9 – Burgess 18 – Hall 45 & 46 – Tisdell	36	45	All other privately-owned land	35	45	Camberwell Hall and St Clements Church	40	-	Section 2.1.1
		Land Number / Receiver	Day/Evening/Night LAeq(15 minute)	Night LA1(1 minute)																																																										
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27 – McInerney 31 – Olofsson	40 38	45 45																																																												
Other privately-owned land in Camberwell Village C	35	45																																																												
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37a & 37b – Richards 83 – Westcott 110 – Hall	38	45																																																												
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	^a The locations of the land and receiver numbers described in EA (Mod 2) and referred to in Table 2 are shown in Appendix 4 However, if the applicant has a written negotiated noise agreement with any landowner of the land listed in Table 2, and a copy of this agreement has been forwarded to the Department and EPA, then the Applicant may exceed the noise limits in Table 2 in accordance with the negotiated noise agreement. Notes: Lands titled 30 – Ninness, 33 – Peachey, 37c – Richards, 53 – Yates, 11 – Chisholm, 35 – Pugh, 20 – Foord, 21a & 21b – Merchant, 38 – Robertson, 6 – Bennett, 24 – Lopes, 4 – Standing, 40 – Smiles, 32 – Green and 44 – Stapleton have been acquired and are now mine-owned.																																																													

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan										
	Schedule 3, Condition 2A	‘Noise generated by the development’ as described in conditions 2, 3, 4 and 6 of this Schedule is to be measured in accordance with the relevant requirements and exemptions (including certain meteorological conditions) of the <i>NSW Noise Policy for Industry</i>. The ‘cumulative noise generated by the development’ as described in condition 5 of this Schedule, combined with the noise generated by other mines is to be measured in accordance with the relevant procedures in the <i>NSW Noise Policy for Industry</i>.	Section 3.3										
	Schedule 3, Condition 3	Land Acquisition Criteria If the noise generated by the development exceeds the criteria in Table 3 at any residence on privately-owned land, or on more than 25% of any privately-owned land, the Applicant must, upon receiving a written request for acquisition from the landowner, acquire the land^a in accordance with the procedures in conditions 9-11 of schedule 4. Table 3: Land acquisition criteria dB(A) <table><thead><tr><th>Land</th><th>Day/Evening/Night L_{Aeq}(15 minute)</th></tr></thead><tbody><tr><td>Camberwell Village A</td><td>45</td></tr><tr><td>Camberwell Village B</td><td>42</td></tr><tr><td>Camberwell Village C</td><td>40</td></tr><tr><td>All other privately-owned land, excluding the land listed in Table 1.</td><td>40</td></tr></tbody></table> ^a The locations of the land referred to in Table 3 are shown in Appendix 4.	Land	Day/Evening/Night L _{Aeq} (15 minute)	Camberwell Village A	45	Camberwell Village B	42	Camberwell Village C	40	All other privately-owned land, excluding the land listed in Table 1.	40	Section 2.1.3
Land	Day/Evening/Night L _{Aeq} (15 minute)												
Camberwell Village A	45												
Camberwell Village B	42												
Camberwell Village C	40												
All other privately-owned land, excluding the land listed in Table 1.	40												
	Schedule 3, Condition 4	Cumulative Noise Criteria The Applicant must take all reasonable and feasible measures to ensure that the noise generated by the development combined with the noise generated by other mines does not exceed the following amenity criteria at any residence on privately-owned land, or on more than 25% of any privately-owned land, excluding the land listed in Table 1, to the satisfaction of the Secretary: • L_{Aeq}(11 hour) 50 dB(A) – Day; • L_{Aeq}(4 hour) 45 dB(A) – Evening; and • L_{Aeq}(9 hour) 40 dB(A) – Night.	Section 2.1.4										
	Schedule 3, Condition 5	If the noise generated by the development combined with the noise generated by other mines exceeds the following amenity criteria at any residence on privately-owned land, or on more than 25% of any privately-owned land, excluding the land listed in Table 1, then upon receiving a written request for acquisition from the landowner, the Applicant must acquire the land on as equitable basis as possible with the relevant mines, in accordance with the procedures in conditions 9-11 of schedule 4, to the satisfaction of the Secretary: • L_{Aeq}(11 hour) 53 dB(A) – Day; • L_{Aeq}(4 hour) 48 dB(A) – Evening; and • L_{Aeq}(9 hour) 43 dB(A) – Night.	Section 2.1.4										
	Schedule 3, Condition 5A	Construction Noise The Applicant must manage noise associated with construction of the realigned transmission line, the removal of the redundant transmission line and any road works in accordance with the noise management levels defined in Table 2 of the <i>Interim Construction Noise Guideline</i>.	Section 3.1.2										
Schedule 3,		Noise Operating Conditions The Applicant must:	Section 3.1										

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
		(a) implement all reasonable and feasible mitigation measures, to minimise the construction, operational, low frequency, road and on-site rail noise of the development, with a particular focus on managing noise impacts during adverse weather conditions; (b) identify any mobile plant or equipment that will operate in noise sensitive areas (i.e. areas with the potential to generate increased noise at privately-owned residences, such as areas near the boundary of the site or elevated land/overburden emplacements) and ensure that this mobile plant or equipment is fitted with reasonable and feasible noise attenuation within 12 months of commencing development under this consent; (c) operate a comprehensive noise management system that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day to day planning of mining operations, and the implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this consent; (d) minimise the noise impacts of the development during meteorological conditions when the noise limits in this consent do not apply (see Appendix 4); (e) ensure that the Mount Owen Rail Loop is only accessed by locomotives that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL; (f) use its best endeavours to ensure that rolling stock is selected to minimise noise; (g) use its best endeavours to co-ordinate noise management with nearby mines (i.e. Glendell, Integra Underground and Rix's Creek North Mines) to reasonably and feasibly minimise cumulative noise impacts; and (h) engage a suitably qualified and experienced person^a carry out regular attended monitoring to determine whether the development is complying with the relevant conditions of this consent. <i>Note: Monitoring under this consent is not required at all residences and the use of representative monitoring locations can be used to demonstrate compliance with criteria, if agreed to by the Secretary.</i> <i>^a In this condition a 'suitably qualified experienced person' means a member of the Australian Acoustical Society, the Association of Australian Acoustical Consultants, or an appropriately qualified person whose appointment has been endorsed by the EPA.</i>	Section 3.4.2 Section 3.2.1 and 3.2.2 Section 3 Section 2.2 Section 2.2 Section 3.1.4 Section 3.3.3

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan																						
Schedule 3, Condition 6	Schedule 3, Condition 6	Additional Noise Mitigation Measures Upon receiving a written request from: - a landowner of the land listed in Table 1 (unless the landowner has requested acquisition); or - a landowner of the land listed in Table 4 (except where a negotiated noise agreement is in place); or - the owner of any residence where subsequent noise monitoring shows the noise generated by the development is greater than, or equal to, the criteria in Table 5 (except where a negotiated noise agreement is in place), the Applicant must implement additional noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner. These additional mitigation measures must be reasonable and feasible. If within 3 months of receiving this request from the landowner, the Applicant and the landowner 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 Secretary for resolution. By the end of April 2008, the Applicant must notify all applicable landowners that they are entitled to receive additional noise mitigation measures, to the satisfaction of the Secretary. <i>Table 4: Land subject to additional noise mitigation upon request</i> <table><tr><td>6 – Bennett</td><td>37a – Richards</td></tr><tr><td>20 – Foord</td><td>38 – Robertson</td></tr><tr><td>21a & 21b – Merchant</td><td>47 & 50 – Vollebregt & Clarke</td></tr><tr><td>24 – Lopes</td><td>83 – Westcott</td></tr><tr><td>27 – McInerney</td><td>110 – Hall</td></tr><tr><td>31 – Olofsson</td><td></td></tr></table> <i>Table 5: Additional noise mitigation criteria dB(A)</i> <table><tr><th>Land</th><th>Day/Evening/Night <i>L_{Aeq}</i>(15 minute)</th></tr><tr><td>Camberwell Village A</td><td>43</td></tr><tr><td>Camberwell Village B</td><td>40</td></tr><tr><td>Camberwell Village C</td><td>38</td></tr><tr><td>All other privately-owned land, excluding the land listed in Table 1.</td><td>38</td></tr></table> <i>Notes to Tables 4-5:</i> <i>Lands titled 6 – Bennett, 20 – Foord, 21a & 21b – Merchant, 24 – Lopes, 38 – Robertson have been acquired and are now mine-owned.</i>	6 – Bennett	37a – Richards	20 – Foord	38 – Robertson	21a & 21b – Merchant	47 & 50 – Vollebregt & Clarke	24 – Lopes	83 – Westcott	27 – McInerney	110 – Hall	31 – Olofsson		Land	Day/Evening/Night <i>L_{Aeq}</i> (15 minute)	Camberwell Village A	43	Camberwell Village B	40	Camberwell Village C	38	All other privately-owned land, excluding the land listed in Table 1.	38	Section 2.1.5 and 4.5.3
		6 – Bennett	37a – Richards																						
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Land	Day/Evening/Night <i>L_{Aeq}</i> (15 minute)																								
Camberwell Village A	43																								
Camberwell Village B	40																								
Camberwell Village C	38																								
All other privately-owned land, excluding the land listed in Table 1.	38																								
Schedule 3, Condition 7	Schedule 3, Condition 7	Noise Management Plan The Applicant must prepare a Noise Management Plan for the development to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with the EPA, and submitted to the Secretary for approval prior to the commencement of development under this consent, unless the Secretary agrees otherwise; (b) describe the measures that would be implemented to ensure compliance with the noise criteria and operating conditions in this consent; (c) describe the noise management system in detail; and	Section 1.6.2 Sections 2, 3, and 4 Sections 2, 3, and 4																						

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
		(d) include a monitoring program that: - evaluates and reports on: - the effectiveness of the noise management system; - compliance with the noise criteria in this consent; and - compliance with the noise operating conditions; - includes a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time (so the real-time noise monitoring program can be used as a better indicator of compliance with the noise criteria in this consent and a trigger for further attended monitoring); and - includes a protocol for distinguishing noise emissions of the development from any neighbouring developments; and - includes a protocol for identifying a noise-related exceedance, incident or non-compliance and for notifying the Department and relevant stakeholders of these events. The Applicant must implement the approved Noise Management Plan as approved from time to time by the Secretary.	Sections 2, 3, and 4
	Schedule 3, Condition 7	Continuous Improvement The Applicant must: - implement all reasonable and feasible best practice noise mitigation measures; - investigate ways to reduce the noise generated by the development, including maximum noise levels which may result in sleep disturbance; and - report on these investigations and the implementation and effectiveness of these measures in the Annual Review.	Section 3
	Schedule 3, Condition 8	Monitoring The Applicant must prepare a Noise Monitoring Program for the development to the satisfaction of the Secretary. This program must: - be prepared in consultation with EPA; - be submitted to the Secretary for approval by the end of April 2008; and - include a: - combination of real-time and supplementary attended monitoring measures; and - noise monitoring protocol for evaluating compliance with the noise impact assessment and land acquisition criteria in this consent. The Applicant must implement the approved program as approved from time to time by the Secretary.	Sections 2, 3, and 4
Schedule 3, Condition 20		Meteorological Monitoring Prior to the commencement of development, the Applicant must ensure that there is a meteorological station in the vicinity of the site that: - complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline; and - is capable of continuous real-time measurement of temperature lapse rate in accordance with the NSW Noise Policy for Industry, unless a suitable alternative (such as wind stability classes) is approved by the Secretary following consultation with the EPA.	Section 3.3.5

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
Schedule 4, Condition 1		Notification of Landowners/Tenants Within 2 months of the commencement of development under this consent, the Applicant must: (a) notify in writing the owner of: - the listed in Table 1 of Schedule 3 that they have the right to require the Applicant to acquire their land at any stage during the development. - the residences listed in Tables 1 and 2 of Schedule 3 that they are entitled to ask the Applicant to install additional noise mitigation measures at the residence; and - any privately-owned land within 3 kilometres of the approved open cut mining pit/s that they are entitled to ask the Applicant 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; (b) notify the tenants of any mine-owned land of their rights under this consent; and (c) 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 documents listed in condition 2(a) of Schedule 2 identify that dust emissions generated by the development are likely to be greater than the relevant air quality criteria in Schedule 3 at any time during the life of the development. Within 2 months of any modification to the conditions of this consent that leads to new land being added to Tables 1 or 2 of Schedule 3, the Applicant must notify affected land owners in accordance with the requirements of paragraph (a).	Section 4.5
	Schedule 4, Condition 1	By the end of April 2008, the Applicant must notify the landowners of the land listed in Table 1 in writing that they have the right to require the Applicant to acquire their land at any stage during the development.	Section 4.5
	Schedule 4, Condition 2	If the results of monitoring required in schedule 3 identify that impacts generated by the development are greater than the impact assessment criteria in schedule 3, except where this is predicted in the EA (Mod 2), and except where a negotiated agreement has been entered into in relation to that impact, then the Applicant must notify the Secretary and the affected landowners and/or existing or future tenants (including tenants of mine owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the criteria in schedule 3.	Section 4.5
Schedule 4, Condition 2		Prior to entering into any tenancy agreement for any land owned by the Applicant that is predicted to experience exceedances of the recommended dust and/or noise criteria, the Applicant must: (a) advise the prospective tenants of the potential health and amenity impacts associated with living on the land, and give them a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time); and (b) advise the prospective tenants of the rights they would have under this consent, to the satisfaction of the Secretary.	Section 4.5

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
Schedule 4, Condition 3		As soon as practicable after obtaining monitoring results showing: (a) an exceedance of any relevant criteria in Schedule 3, the Applicant must notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the development is again complying with the relevant criteria; and (b) an exceedance of the relevant air quality criteria in Schedule 3, the Applicant must 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).	Section 4.5
Schedule 4, Condition 4		Independent Review If an owner of privately-owned land considers the development to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land. If the Secretary is not satisfied that an independent review is warranted, the Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review. If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Applicant must: (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to: • consult with the landowner to determine his/her concerns; • conduct monitoring to determine whether the development is complying with the relevant impact assessment criteria in Schedule 3; and	Section 4.5.4
		• if the development is 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 regarding the impact on the land; – identify the measures that could be implemented to ensure compliance with the relevant criteria; and (b) give the Secretary and landowner a copy of the independent review.	Section 4.5.4
Schedule 4, Condition 5		Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant must make a binding written offer to the landowner based on: (a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the development, having regard to the: • existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and • presence of improvements on the land and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the additional noise and/or air quality mitigation measures in condition 2 of Schedule 3;	Section 2.1.3 and Section 4.5

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
		(b) the reasonable costs associated with: - relocating within the Singleton, Cessnock or Muswellbrook local government area, or to any other local government area determined by the Secretary; and - obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and (c) reasonable compensation for any disturbance caused by the land acquisition process. If, within two months of the binding written offer being made, the Applicant and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution. Upon receiving such a request, the Secretary will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to: - consider submissions from both parties; - determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above; - prepare a detailed report setting out the reasons for any determination; and - provide a copy of the report to both parties. Within 14 days of receiving the independent valuer's report, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination. However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions. Within 14 days of this determination, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination. If the landowner refuses to accept the Applicant's binding written offer under this condition within 6 months of the offer being made, then the Applicant's obligations to acquire the land shall cease, unless the Secretary determines otherwise.	
Schedule 4, Condition 6		The Applicant must pay all reasonable costs associated with the land acquisition process described in condition 5 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.	Section 4.5.2

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
	Schedule 4, Condition 4	Independent Review If a landowner considers the development to be exceeding the impact assessment criteria in schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land. If the Secretary is satisfied that an independent review is warranted, the Applicant must within 2 months of the Secretary's decision: (a) consult with the landowner to determine his/her concerns; (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to conduct monitoring on the land, to: • determine whether the development is complying with the relevant impact assessment criteria in schedule 3; and • identify the source(s) and scale of any impact on the land, and the development's contribution to this impact; and (c) give the Secretary and landowner a copy of the independent review.	Section 4.5
	Schedule 4, Condition 5	If the independent review determines that the development is complying with the relevant impact assessment criteria in schedule 3, then the Applicant may discontinue the independent review with the approval of the Secretary.	Section 4.5
	Schedule 4, Condition 6	If the independent review determines that the development is not complying with the relevant impact assessment criteria in schedule 3, and that the development is primarily responsible for this noncompliance, then the Applicant must: (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the development complies with the relevant criteria; and (b) conduct further monitoring to determine whether these measures ensure compliance. If the additional monitoring referred to above subsequently determines that the development is complying with the relevant criteria in schedule 3, or the Applicant and landowner enter into a negotiated agreement to allow these exceedances, then the Applicant may discontinue the independent review with the approval of the Secretary.	Section 4.5
	Schedule 4, Condition 7	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 non-compliance, then the Applicant must, together with the relevant mine/s: (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the relevant criteria are complied with; and (b) conduct further monitoring to determine whether these measures ensure compliance; or (c) secure a written agreement with the landowner and other relevant mines to allow exceedances of the criteria in schedule 3; to the satisfaction of the Secretary. If the additional monitoring referred to above subsequently determines that the developments are complying with the relevant criteria in schedule 3, then the Applicant may discontinue the independent review with the approval of the Secretary.	Section 4.5

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
	Schedule 4, Condition 8	If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the Secretary for resolution.	Section 4.5
	Schedule 4, Condition 9	Land Acquisition Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant must make a binding written offer to the landowner based on: (a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the development the subject of the development application, having regard to the: • existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and	Section 2.1.3 and 4.5
	Schedule 4, Condition 9	• presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the 'additional noise mitigation measures' in condition 6 of schedule 3; (b) the reasonable costs associated with: • relocating within the Singleton local government area, or to any other local government area determined by the Secretary; • obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and (c) reasonable compensation for any disturbance caused by the land acquisition process. However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution. Upon receiving such a request, the Secretary shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired. Within 14 days of receiving the independent valuer's determination, the Applicant must make a written offer to purchase the land at a price not less than the independent valuer's determination. If the landowner refuses to accept this offer within 6 months of the date of the Applicant's offer, the Applicant's obligations to acquire the land shall cease, unless otherwise agreed by the Secretary.	Section 2.1.3 and 4.5
	Schedule 4, Condition 10	The Applicant must bear the reasonable costs of any valuation or survey assessment requested by the independent valuer, or the Secretary, and the costs of determination referred above.	Section 4.5

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
	Schedule 4, Condition 11	If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant must pay all reasonable costs associated with obtaining Council consent for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.	Section 4.5
Schedule 5, Condition 1	Schedule 5, Condition 1	Adaptive Management The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.	Section 4
		Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity: (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur; (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and (c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.	Section 4

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
Schedule 5, Condition 3	Schedule 5, Condition 3	Management Plan Requirements The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include: (a) a summary of relevant background or 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; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development 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 development; • 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 development over time; (g) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and (h) a protocol for periodic review of the plan. <i>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</i>	All

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
Schedule 5, Condition 5	Schedule 5, Condition 5	Annual Review By the end of March each year, or as otherwise agreed with the Secretary, the Applicant must submit a report to the Department reviewing the environmental performance of the development to the satisfaction of the Secretary. This review must: (a) describe the development (including any rehabilitation) that was carried out in the previous calendar year, and the development that is proposed to be carried out over the current calendar year; (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, which includes a comparison of these results against the: • relevant statutory requirements, limits or performance measures/criteria; • monitoring results of previous years; and • relevant predictions in the documents listed in condition 2(a) of Schedule 2; (c) identify any non-compliance or incident over the past year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence; (d) identify any trends in the monitoring data over the life of the development; (e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and (f) describe what measures will be implemented over the next year to improve the environmental performance of the development.	Section 5.1
Schedule 5, Condition 6		Revision of Strategies, Plans and Programs Within 3 months of: (a) the submission of an Annual Review under condition 5 above; (b) the submission of an incident report under condition 9 below; (c) the submission of an audit under condition 11 below; or (d) any modification to the conditions of this consent (unless the conditions require otherwise); The suitability of existing strategies, plans and programs required under this consent must be reviewed by the Applicant. If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Secretary. Where revisions are required, the revised document must be submitted to the Secretary for approval within six weeks of the review. <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 development.</i>	Section 5.2

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
	Schedule 5, Condition 6	Revisions of Strategies, Plans and Programs Within 3 months of: (a) the submission of an Annual Review under condition 5 above; (b) the submission of an incident report under condition 9 below; (c) the submission of an audit under condition 11 below; or (d) any modification to the conditions of this consent (unless the conditions require otherwise); the Applicant must review the strategies, plans and programs required under this consent, to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Secretary. <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 development.</i>	Section 5.2
Schedule 5, Condition 7		The Applicant must continue to apply existing management strategies, plans or programs approved prior to the approval of Modification 2, until the approval of a similar plan, strategy or program following the approval of Modification 2.	Noted
	Appendix 3, 1.6.1	Statement of Commitments – Noise Noise Mitigation Measures The following noise control measures will be employed throughout the life of the project unless otherwise agreed in writing by the Department. A progressive equipment replacement program that seeks to incorporate best practice noise attenuation on mining equipment.	Section 3.3.3
	1.6.2	Ongoing use of an alarm generated for elevated noise levels from the Mt Owen Complex continuous noise monitoring network and notification of operational personnel to review the ability to modify operations where practical during periods of adverse weather conditions.	Section 3.3.2
	1.6.3	Design of the out of pit dumping sequence to allow for mining equipment to dump in higher exposed areas in the day time and within protected lower areas during night time periods, where practicable during adverse weather conditions.	Section 3.2
	1.6.4	The use of a continuous noise monitoring system to assist with managing operational noise performance and determine further noise controls, as necessary.	Section 3.2
	1.6.5	The Applicant will amend the Mt Owen Complex Noise Management and Monitoring Plans and Protocols to include provisions for the management and monitoring of noise emissions from proposed Glendell operations.	All
	1.6.6	The Applicant will investigate reported exceedances of relevant project specific noise criteria at private residences on a case by case basis. This includes the monitoring of noise emissions at a particular receiver for comparison with the predicted cumulative noise exceedance probabilities outlined in the noise impact assessment. This approach is consistent with the existing noise management and monitoring processes at the Mt Owen Complex.	Section 3.3.3 and 4.3
	1.6.7	Where it is established that the relevant project specific noise criteria have been exceeded by activities from Glendell, the Applicant will investigate additional noise mitigation strategies in consultation with the landholder.	Section 2.1.5

Mount Owen Mine (SSD-5850)	Glendell Mine (DA 80/952)	Condition	Relevant Section of Plan
	1.7.1	Noise Monitoring The Applicant will continue to implement the noise monitoring network currently in place for the Mt Owen complex. The Applicant will continue with the ongoing operation of three continuous noise monitors within the Glennies Creek and Middle Falbrook areas.	Section 3.2
	1.7.2	The Applicant proposes to install a further two continuous noise monitors, one reference monitor located between Glendell Mine and Ashton Mine and one within the Camberwell Village area.	Section 3.2
Appendix 4, Condition 1		Applicable Meteorological Conditions The noise criteria in Table 3 of the conditions are to apply under all meteorological conditions except the following: (a) during periods of rain or hail; (b) average wind speed at microphone height exceeds 5 metres/second; (c) wind speeds greater than 3 metres/second measured at 10 metres above ground level; or (d) temperature inversion conditions greater than 3°C/100 metres.	Section 2.1.1
Appendix 4, Condition 2		Determination of Meteorological Conditions Except for wind speed at microphone height, the data to be used for determining meteorological conditions shall be that recorded by the meteorological station located on the site.	Section 2.1.1
Appendix 4, Condition 3		Attended monitoring is to be used to evaluate compliance with the relevant conditions of this consent.	Section 3.3.3
Appendix 4, Condition 4		This monitoring must be carried out at least once a month (at least two weeks apart) for the first 12 months following commencement under this consent, and then quarterly thereafter, unless the Secretary directs otherwise. <i>Note: The Secretary may direct that the frequency of attended monitoring increase or decrease at any time during the life of the development.</i>	Section 3.3.3
Appendix 4, Condition 5		Unless the Secretary agrees otherwise, this monitoring must be carried out in accordance with the relevant requirements for reviewing performance set out in the NSW Noise Policy for Industry (as amended from time to time), in particular the requirements relating to: (a) monitoring locations for the collection of representative noise data; (b) meteorological conditions during which collection of noise data is not appropriate; (c) equipment used to collect noise data, and conformity with Australian Standards relevant to such equipment; and (d) modifications to noise data collected, including for the exclusion of extraneous noise and/or penalties for modifying factors apart from adjustments for duration with the exception of applying appropriate modifying factors of low frequency noise during compliance testing. This should be undertaken in accordance with Fact Sheet C of the NSW Noise Policy for Industry (EPA, 2017).	Section 3.3.3

Table A1-2 MGO EPL Conditions

Mount Owen (EPL 4460)	Glendell (EPL 12840)	Condition	Relevant Section of Plan																																																																																
L3 Noise Limits																																																																																			
L3.1		Noise generated at the premises must not exceed the noise limits presented in the table below. Residences referenced in this table are from the consent SSD 5850 Mod 1 2017 and summarised in EPA Reference DOC18/688098-10 <table><tr><th>Location</th><th>Day LAeq(15 minute)</th><th>Evening LAeq(15 minute)</th><th>Night LAeq(15 minute)</th><th>Night LA1(1 minute)</th></tr><tr><td>EPA Point 31 & 39</td><td>35</td><td>35</td><td>35</td><td>45</td></tr><tr><td>EPA Point 33</td><td>45</td><td>45</td><td>42</td><td>45</td></tr><tr><td>EPA Point 34</td><td>42</td><td>42</td><td>42</td><td>50</td></tr><tr><td>EPA Point 37</td><td>39</td><td>39</td><td>35</td><td>45</td></tr><tr><td>EPA Point 44</td><td>37</td><td>37</td><td>37</td><td>45</td></tr><tr><td>Residence 41,48</td><td>36</td><td>35</td><td>35</td><td>45</td></tr><tr><td>Residence 91</td><td>37</td><td>37</td><td>36</td><td>45</td></tr><tr><td>Residence 14, 92</td><td>37</td><td>37</td><td>37</td><td>45</td></tr><tr><td>Residence 10, 11</td><td>37</td><td>37</td><td>37</td><td>46</td></tr><tr><td>Residence 13</td><td>38</td><td>38</td><td>38</td><td>45</td></tr><tr><td>Residence 12, 94, 95, 112</td><td>38</td><td>38</td><td>38</td><td>46</td></tr><tr><td>Residence 111</td><td>39</td><td>39</td><td>36</td><td>45</td></tr><tr><td>Residence 19</td><td>39</td><td>39</td><td>39</td><td>45</td></tr><tr><td>Residence 93</td><td>40</td><td>40</td><td>40</td><td>46</td></tr><tr><td>Other privately-owned residences</td><td>35</td><td>35</td><td>35</td><td>45</td></tr></table>	Location	Day LAeq(15 minute)	Evening LAeq(15 minute)	Night LAeq(15 minute)	Night LA1(1 minute)	EPA Point 31 & 39	35	35	35	45	EPA Point 33	45	45	42	45	EPA Point 34	42	42	42	50	EPA Point 37	39	39	35	45	EPA Point 44	37	37	37	45	Residence 41,48	36	35	35	45	Residence 91	37	37	36	45	Residence 14, 92	37	37	37	45	Residence 10, 11	37	37	37	46	Residence 13	38	38	38	45	Residence 12, 94, 95, 112	38	38	38	46	Residence 111	39	39	36	45	Residence 19	39	39	39	45	Residence 93	40	40	40	46	Other privately-owned residences	35	35	35	45	Section 2.1.1
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Mount Owen (EPL 4460)	Glendell (EPL 12840)	Condition	Relevant Section of Plan																																																																								
	L2.1	Noise generated at the premises that is measured at each noise monitoring point established under this licence must not exceed the noise levels specified in Column 4 of the table below for that point during the corresponding time periods specified in Column 1 when measured using the corresponding measurement parameters listed in Column 2. POINT 10 <table> <tr> <th>Time period</th><th>Measurement parameter</th><th>Measurement frequency</th><th>Noise level dB(A)</th></tr> <tr> <td>Night</td><td>Night-LAeq (15 minute)</td><td>Monthly</td><td>40</td></tr> <tr> <td>Night</td><td>Night-LA1 (1 minute)</td><td>Monthly</td><td>45</td></tr> </table> POINT 11 <table> <tr> <th>Time period</th><th>Measurement parameter</th><th>Measurement frequency</th><th>Noise level dB(A)</th></tr> <tr> <td>Night</td><td>Night-LAeq (15 minute)</td><td>Monthly</td><td>38</td></tr> <tr> <td>Night</td><td>Night-LA1 (1 minute)</td><td>Monthly</td><td>45</td></tr> </table> POINT 6 <table> <tr> <th>Time period</th><th>Measurement parameter</th><th>Measurement frequency</th><th>Noise level dB(A)</th></tr> <tr> <td>Night</td><td>Night-LAeq (15 minute)</td><td>Monthly</td><td>38</td></tr> <tr> <td>Night</td><td>Night-LA1 (1 minute)</td><td>Monthly</td><td>45</td></tr> </table> POINT 7 <table> <tr> <th>Time period</th><th>Measurement parameter</th><th>Measurement frequency</th><th>Noise level dB(A)</th></tr> <tr> <td>Night</td><td>Night-LAeq (15 minute)</td><td>Monthly</td><td>38</td></tr> <tr> <td>Night</td><td>Night-LA1 (1 minute)</td><td>Monthly</td><td>45</td></tr> </table> POINT 8 <table> <tr> <th>Time period</th><th>Measurement parameter</th><th>Measurement frequency</th><th>Noise level dB(A)</th></tr> <tr> <td>Night</td><td>Night-LAeq (15 minute)</td><td>Monthly</td><td>35</td></tr> <tr> <td>Night</td><td>Night-LA1 (1 minute)</td><td>Monthly</td><td>45</td></tr> </table> POINT 9 <table> <tr> <th>Time period</th><th>Measurement parameter</th><th>Measurement frequency</th><th>Noise level dB(A)</th></tr> <tr> <td>Night</td><td>Night-LAeq (15 minute)</td><td>Monthly</td><td>42</td></tr> <tr> <td>Night</td><td>Night-LA1 (1 minute)</td><td>Monthly</td><td>45</td></tr> </table>	Time period	Measurement parameter	Measurement frequency	Noise level dB(A)	Night	Night-LAeq (15 minute)	Monthly	40	Night	Night-LA1 (1 minute)	Monthly	45	Time period	Measurement parameter	Measurement frequency	Noise level dB(A)	Night	Night-LAeq (15 minute)	Monthly	38	Night	Night-LA1 (1 minute)	Monthly	45	Time period	Measurement parameter	Measurement frequency	Noise level dB(A)	Night	Night-LAeq (15 minute)	Monthly	38	Night	Night-LA1 (1 minute)	Monthly	45	Time period	Measurement parameter	Measurement frequency	Noise level dB(A)	Night	Night-LAeq (15 minute)	Monthly	38	Night	Night-LA1 (1 minute)	Monthly	45	Time period	Measurement parameter	Measurement frequency	Noise level dB(A)	Night	Night-LAeq (15 minute)	Monthly	35	Night	Night-LA1 (1 minute)	Monthly	45	Time period	Measurement parameter	Measurement frequency	Noise level dB(A)	Night	Night-LAeq (15 minute)	Monthly	42	Night	Night-LA1 (1 minute)	Monthly	45	Section 2.1.1
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L3.2		For the purposes of Condition L3.1: a) Day is defined as the period from 7 am to 6 pm Monday to Saturday and 8 am to 6 pm Sundays and Public holidays; b) Evening is defined as the period 6 pm to 10 pm, and c) Night is defined as the period from 10 pm to 7 am Monday to Saturday and 10 pm to 8 am Sundays and Public Holidays.	Section 3.3.1																																																																								
	L2.2	For the purposes of the noise limits in this licence the 'night' period is defined as 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holiday, however night time noise monitoring can be conducted from 9pm onwards but must be assessed against the night time criteria provided in this licence.	Section 3.3.2																																																																								

Mount Owen (EPL 4460)	Glendell (EPL 12840)	Condition	Relevant Section of Plan								
L3.3		The noise limits set out in condition L3.1 apply under all meteorological conditions except for the following: a) Wind speeds greater than 3 metres/second at 10 metres above the ground level; b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or c) Stability category G temperature inversion conditions.	Section 2.1.1								
L3.4		For the purposes of condition L3.3: a) Data recorded by the closest and most representative meteorological station installed on the premises at EPA Identification Point 16 or 17 must be used to determine meteorological conditions; and b) Temperature inversion conditions (stability category) are to be determined by the methods referred to in Fact Sheet D of the Noise Policy for Industry (2017).	Section 3.4								
	L2.3	The noise emission limits identified in this licence apply under all meteorological conditions except: (a) during wind speeds greater than 3m/s at 10 metres above ground level; or (b) under stability category G temperature inversion conditions; or under stability category F temperature inversion conditions and wind speeds greater than 2 metres per second at 10 metres above ground level. Note: Stability category temperature inversion conditions are to be determined by the sigma-theta method referred to in Part 4E of Appendix E of the <i>NSW Noise Policy for Industry</i> .	Section 2.1.1								
M8 Noise Monitoring											
	M8.1	To assess compliance with the noise limits specified within this licence, the licensee must undertake operator attended noise monitoring at each specified noise monitoring point in accordance with the table below. POINT 6,7,8,9,10,11 <table border="1"> <thead> <tr> <th>Assessment period</th><th>Minimum frequency in a reporting period</th><th>Minimum duration within assessment period</th><th>Minimum number of assessment periods</th></tr> </thead> <tbody> <tr> <td>Night</td><td>Monthly</td><td>15 minutes</td><td>1 operation day</td></tr> </tbody> </table>	Assessment period	Minimum frequency in a reporting period	Minimum duration within assessment period	Minimum number of assessment periods	Night	Monthly	15 minutes	1 operation day	Section 3.3.2
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R4 Other Reporting Conditions											
	R4.1	Noise Compliance Assessment Report A report containing the monitoring results of noise compliance monitoring specified in this licence must be submitted annually with the Annual Return as set out in Condition R1.	Section 5.1								
	R4.2	The licensee must notify the EPA in writing of any exceedance of the noise criteria in this licence as soon as practicable after the licensee becomes aware of the exceedance.	Section 4.3								

Table A1-3 EIS and EA Commitments

Mount Owen and Ravensworth East (SSD-5850)	Glendell (DA 80/952)	Condition	Relevant Section of Plan
MOCO EIS Statement of Commitments			
1		Within 12 months of project approval, Mount Owen will develop and implement a Noise Management Plan (NMP) (to update the current Noise Monitoring Program) in accordance with the Project Approval and EPL. The NMP will detail the continued management and monitoring controls to be utilised to manage potential noise impacts associated with operations, as outlined in Section 5.3.10 of the EIS. Key management commitments include: • Mount Owen will manage relevant activities during adverse weather conditions, such as when wind or inversion conditions enhance the noise propagation towards sensitive receiver locations, as described in Section 5.3.10 of the EIS, in order to meet noise performance requirements. • Bunds will be included in strategic locations along some haul roads, and where practicable be located along the exposed side of the ramps, shielding noise from trucks and equipment on exposed sections of the ramps. • In the later years of the Project, the primary coal haul road to the Mount Owen CHPP will be located on the western side of the North Pit Continuation. • Location and orientation of haul roads will consider prevailing source to receiver winds, where practicable and some key haul roads within the North Pit Continuation will be located below ground surface to maximise topographical shielding to surrounding receiver areas. Incorporation of reasonable and feasible noise attenuation on key plant and equipment as detailed in Appendix 7 of the EIS.	Section 3 Section 3.4.2 Section 3.4.2 Section 3.4.2
2		Mount Owen intends to achieve the predicted noise levels associated with the Project presented in the NIA through the continued implementation of an adaptive management approach, focused on implementing appropriate operational controls and management strategies to minimise noise impacts. The approach will vary during different mine stages, weather conditions and consider technological improvements and associated equipment noise levels. A range of controls and strategies may be adopted as required to meet noise performance requirements for the Project as outlined in Section 5.3.10 of the EIS.	Section 3

Mount Owen and Ravensworth East (SSD-5850)	Glendell (DA 80/952)	Condition	Relevant Section of Plan
3		Mount Owen will continue to implement the extensive continuous monitoring network to enable proactive and real time management of operations during noise propagating conditions. The noise monitoring system will comprise: - Continued use of predictive forecasting of adverse weather conditions to identify when and where management measures are likely to be required as a result of an adverse weather event; - Maintenance of the existing continuous noise monitoring network, with refinements as mining progresses, as described in Section 5.3.10 of the EIS. This continuous monitoring network consists of fixed and mobile continuous noise monitoring units and two weather stations. In these circumstances where the noise impacts are predicted based on stability class rather than lapse rate, a 10 metre tower is suitable for measuring stability class based on sigma theta. As a result, the current weather stations used by Mount Owen are suitable for assessing the presence of inversion conditions that could lead to the enhancement of noise impacts; - Continued attended noise monitoring, as described in Section 5.3.10 of the EIS. The location and frequency of monitoring will be determined on an ongoing risk assessment basis; and - Use of continuous noise monitoring system to identify when noise levels are approaching relevant noise limits in the surrounding area to actively manage operations to minimise potential noise impacts as far as practicable.	Section 3
Glendell EA Statement of Commitments			
Noise Mitigation Measures			
	1.6.1	A progressive equipment replacement program that seeks to incorporate best practice noise attenuation on mining equipment.	Section 3.4.2
	1.6.2	Ongoing use of an alarm generated for elevated noise levels from the Mount Owen Complex continuous noise monitoring network and notification of operational personnel to review the ability to modify operations where practical during periods of adverse weather conditions.	Section 3.4.2 and 4.3
	1.6.3	Design of the out of pit dumping sequence to allow for mining equipment to dump in higher exposed areas in the day time and within protected lower areas during the night time periods, where practicable during adverse weather conditions.	Section 3.4.2
	1.6.4	The use of a continuous noise monitoring system to assist with managing operational noise performance and determine further noise controls, as necessary.	Section 3
	1.6.5	Xstrata Mt Owen will amend the Mount Owen Complex Noise Management and Monitoring Plans and Protocols to include provisions for the management and monitoring of noise emissions from proposed Glendell operations.	All

Mount Owen and Ravensworth East (SSD-5850)	Glendell (DA 80/952)	Condition	Relevant Section of Plan
	1.6.6	Xstrata Mt Owen will investigate reported exceedences of relevant project specific noise criteria at private residences on a case by case basis. This includes the monitoring of noise emissions at a particular receiver for comparison with the predicted cumulative noise exceedance probabilities outlined in the noise impact assessment. This approach is consistent with the existing noise management and monitoring processes at the Mount Owen Complex.	Section 4.3
	1.6.7	Where it is established that the relevant project specific noise criteria have been exceeded by activities from Glendell, Xstrata Mt Owen will investigate additional noise mitigation strategies in consultation with the land holder.	Section 4.3
Noise Monitoring			
	1.7.1	Xstrata Mt Owen will continue to implement the noise monitoring network currently in place for the Mount Owen Complex. Xstrata Mt Owen will continue with the ongoing operation of three continuous noise monitors within the Glennies Creek and Middle Falbrook areas.	Section 3 and 3.3.3
	1.7.2	Xstrata Mt Owen proposes to install a further two continuous noise monitors, one reference monitor located between Glendell Mine and Ashton Mine and one within the Camberwell Village area.	Section 3 and 3.3.3

Appendix B - Management Plan Approval
