



Mt Owen Complex

Noise Monitoring Program

November 2011

Managed by



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1.0 Introduction

1.1 Background

The Mt Owen Complex is located in the Hunter Coal fields of New South Wales, approximately 25 kilometres northwest of Singleton. The Complex is owned and managed by Xstrata Mt Owen Pty Limited (XMO) which is a wholly owned subsidiary business unit of Xstrata Coal Australia Pty Ltd (Xstrata).

The Mt Owen Complex consists of three open-cut coal mines; the adjacent Mt Owen Mine, Ravensworth East Mine and Glendell Mine. The Mt Owen mine is operated by Thiess Pty Ltd (Thiess) under a partnership agreement with XMO. The Glendell mine and Ravensworth East mine are owned and operated by XMO. A description of the Mt Owen Complex, including a location plan, is provided in the Mt Owen Complex Environmental Management Strategy.

On 8 December 2004, XMO was granted Development Consent DA 14-1-2004 by the then Department of Infrastructure, Planning and Natural Resources (DIPNR), now Department of Planning & Infrastructure (DoPI), which allowed for the expansion of existing approved mining operations at Mt Owen. A modification to this consent was granted in November 2010 approving the construction of a rail refuelling facility on the existing rail loop. Development Consent DA 52-03-99 for the Ravensworth East Mine was granted on 2 March 2000 and was subsequently modified in August 2005 to align with the Mt Owen consent. A modification to the Glendell Mine development consent (DA80/952) was granted on 25 February 2008, which enables revisions of the mine plan and integration of the Glendell mine into the Mt Owen Complex. These Consents set out a number of specific requirements for the Air Quality Monitoring Program. Relevant Consent Conditions are contained in **Appendix 1**.

There are a number of essential activities processes and equipment on site that have the potential to generate noise, these include;

- exploration;
- operational movements of excavators, trucks, bulldozers and other mine plant;
- operation of the coal handling and preparation plant;
- train movements on the Mt Owen rail spur;
- dumping; and
- audible safety systems fitted to equipment such as horns and reversing beepers.

In order to effectively manage impacts from these activities, XMO have implemented a range of onsite controls and a comprehensive noise monitoring program.

1.2 Purpose and Scope

The purpose of this Noise Monitoring Program is to describe the measures that have been implemented to monitor noise emissions from continued operations at Mt Owen Mine, Ravensworth East Mine and Glendell Mine against relevant regulatory criteria. This

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Program applies to all operational activities within the Mt Owen Complex and addresses the relevant conditions of DA 14-1-2004, DA 52-03-99 and DA80/952 as detailed in **Appendix 1**. The Program forms part of the Mt Owen Complex Environmental Management System (EMS) and should be read in conjunction with the Mt Owen Complex Environmental Management Strategy.

Specific requirements relating to noise management from DA 14-1-2004, DA 52-03-99 and DA80/952 are contained in **Appendix 1**.

2.0 Definitions

Daytime	In relation to noise criteria it is the period 7am to 6 pm Monday to Saturday and 8 am to 6 pm Sundays 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.
Non-Compliance	Refer to Section 6.2.2 .
Breach	Refer to Section 6.2.2 .
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.
L_{A10}	The noise level, measured in dB(A), which is exceeded for 10 percent of the time.
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.

3.0 Statutory Requirements

3.1 Legislation and Guidelines

The Mt Owen Complex Noise Monitoring Program has been developed with reference to:

- The *Protection of the Environment Operations Act 1997 (PoEO Act)* administered by the Department of Environment & Climate Change (DECC);
- *Environmental Planning and Assessment Act 1979 (EP&A Act)* administered by DoPI; and
- *New South Wales Industrial Noise Policy 2000*.

3.2 Licences and Approvals

3.2.1 Environmental Protection Licence

Environmental Protection Licences (EPL) are administered by the Office of Environment and Heritage (OEH). The Licences set out noise criteria (refer to **Section 3.3**) and conditions relating to noise monitoring and reporting.

Thiess holds EPL No. 4460 for Mt Owen Mine, XMO holds EPL No. 12840 for Glendell Mine and EPL 10860 for Ravensworth East Mine. Licence conditions relating to noise are provided in **Appendix 1**.

3.2.2 Development Consent

The Mt Owen, Ravensworth East and Glendell development consents require compliance with noise criteria specified within the development consent for each operation. The Consents set out specific conditions relating to noise monitoring and a process to be followed in the event that there is an exceedance of noise criteria. Further details of Consent conditions relevant to noise are provided in **Appendix 1**.

3.3 Noise Criteria

Noise criteria relevant to the Mt Owen Complex can be divided into four categories:

1. Noise Impact Assessment Criteria;
2. Land Acquisition Criteria;
3. Cumulative Noise Criteria; and
4. EIS/EA predictions.

The response to a non-compliance with noise criteria is detailed in **Section 6.4**.

3.3.1 Noise Impact Assessment Criteria

Noise Impact Assessment Criteria are set for day, evening and night time periods to protect the amenity of neighbouring residents. Impact Assessment Criteria are expressed as L_{Aeq} and L_{A1} limits (refer to **Section 2** for definitions) and are specified in relevant development consents and EPL conditions for the Mt Owen Complex. The L_{A1} is a measure of potential sleep disturbance. The relevant noise impact assessment criteria for the Mt Owen and Ravensworth East mines are provided in **Table 3.1**.

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Table 3.1 - Mt Owen and Ravensworth East Mine Noise Impact Assessment Criteria dB(A) from DA14-1-2004 and DA52-03-99

Land Number ¹	Day	Evening/Night	Night
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A1} (1 minute)
29 – Nagle and Partridge	37	37	45
55 – Bodiam			
40 – Holmes	36	36	45
53 – Cullinan			
54 – Reid			
93 – Scott			
90 – Wilson			
All other privately owned land, excluding the land listed in Table 1 (provided Appendix 1) apart from 91 Lancaster.	35	35	45

1 – Property reference numbers used in the table correspond to those used in the Mt Owen Operations EIS (Umwelt, December 2003).

The noise environment in the areas surrounding the Glendell Mine are complex and is influenced by a number of existing sources, notably, the New England Highway. Within Camberwell Village, the relevant noise impact assessment criteria are based on the distance of the receiver from the New England Highway (refer to **Figure 3.1**). The relevant noise impact assessment criteria for the Glendell Mine are provided in **Table 3.2**.

Table 3.2 - Glendell Mine Noise Impact Assessment Criteria dB(A) from DA80/952

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

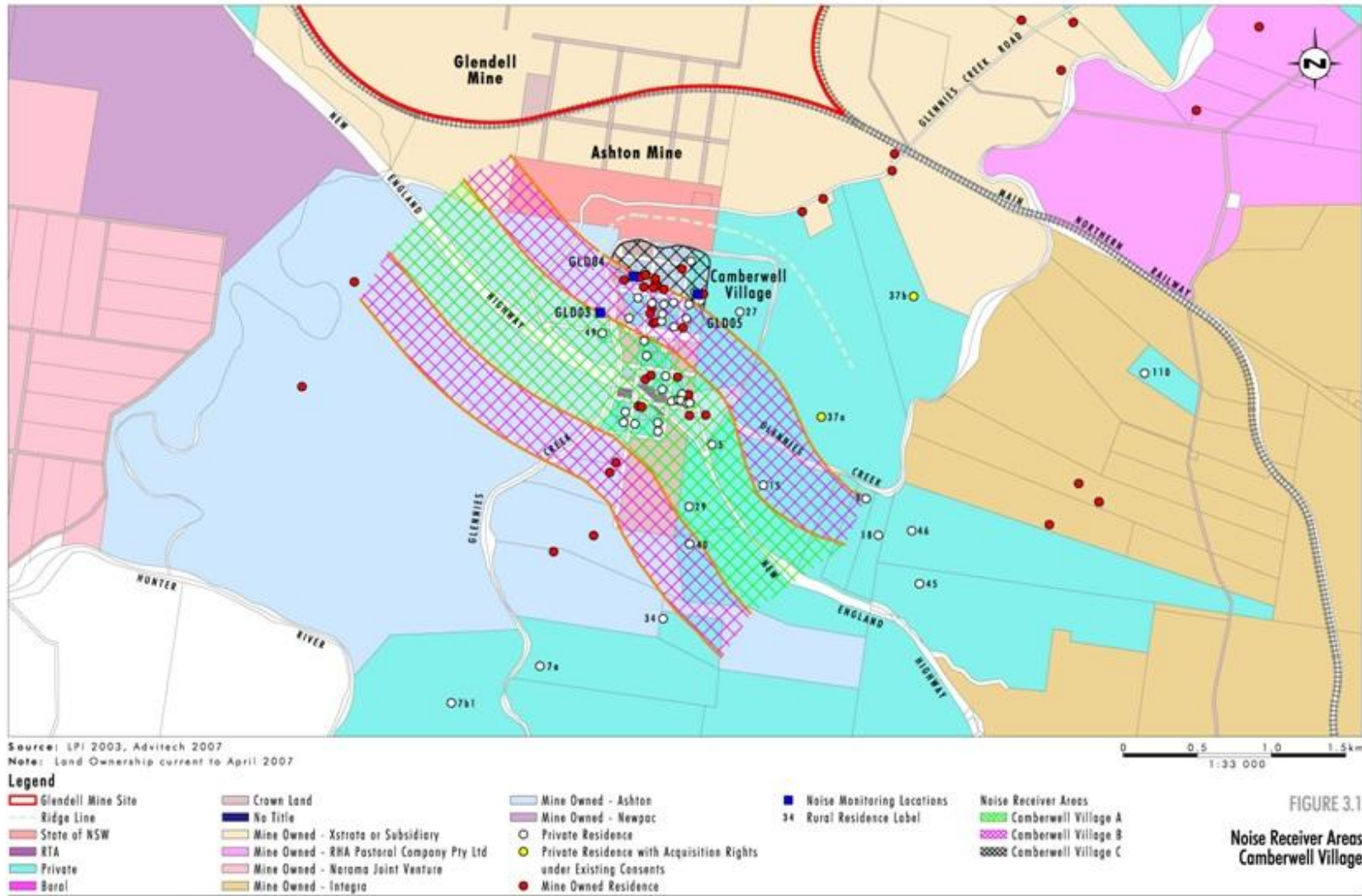


FIGURE 3.1
 Noise Receiver Areas
 Camberwell Village

Table 3.2 - Glendell Mine Noise Impact Assessment Criteria dB(A) from DA80/952 (cont)

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

1 – Property reference numbers used in the table correspond to those used in the Environmental Assessment for the Modification of Glendell Mine Operations (Umwelt, 2007).

In addition, Condition 6 Schedule 3 of the Glendell Mine Development Consent (DA80/952) specifies additional impact assessment criteria for surrounding receivers (refer to **Table 3.3**). Where monitoring demonstrates that noise generated from Glendell Mine is greater than or equal to the noise criteria outlined in **Table 3.3** (except where a negotiated noise agreement is in place), XMO will implement additional reasonable and feasible noise mitigation measures (refer to **Section 6.4.3**).

Table 3.3 - Glendell Mine Additional Noise Mitigation Criteria dB(A) from DA80/952

Receiver Location	Additional Noise Impact Mitigation Criteria		
	Day	Evening	Night
Camberwell Village A	43 _{Aeq(15mins)}	43 _{Aeq(15mins)}	43 _{Aeq(15mins)}
Camberwell Village B	40 _{LAeq(15mins)}	40 _{Aeq(15mins)}	40 _{Aeq(15mins)}
Camberwell Village C	38 _{LAeq(15mins)}	38 _{LAeq(15mins)}	38 _{LAeq(15mins)}
All other privately owned land, excluding the land listed in Table 1 of DA80/952	38 _{LAeq(15mins)}	38 _{LAeq(15mins)}	38 _{LAeq(15mins)}

Similarly, Condition 4 of Schedule 4 of the Mt Owen Mine development consent (DA14-1-2004) specifies additional impact assessment criteria for surrounding receivers. Where monitoring demonstrates that noise generated from Mt Owen Mine is greater than or equal 37dB(A) L_{Aeq}(15minute) day, evening and night time (except where a negotiated noise agreement is in place), XMO will implement additional reasonable and feasible noise mitigation measures (refer to **Section 6.4.3**).

3.3.2 Land Acquisition Criteria

A noise acquisition limit of 40 dB(A) measured as an $L_{Aeq(15\text{ minute})}$ applies to the Mt Owen and Ravensworth East mines (day, evening and night). This criterion relates to noise generated by the respective developments as measured in accordance with Development Consent Conditions (refer to **Appendix 1**).

Due to the existing noise environment within Camberwell Village, the relevant land acquisition criteria are based on the distance of the receiver from the New England Highway (refer to **Figure 3.1**). The land acquisition criteria for Camberwell Village, for noise generated from Glendell Mine, are outlined in **Table 3.4**.

Table 3.4 – Noise Land Acquisition Criteria within Camberwell Village dB(A) for Noise Generated by Glendell Mine (DA80/952)

Receiver Location	Land Acquisition Criteria		
	Day	Evening	Night
Camberwell Village A	45 _{Aeq(15mins)}	45 _{Aeq(15mins)}	45 _{Aeq(15mins)}
Camberwell Village B	42 _{L_{Aeq}(15mins)}	42 _{Aeq(15mins)}	42 _{Aeq(15mins)}
Camberwell Village C	40 _{L_{Aeq}(15mins)}	40 _{L_{Aeq}(15mins)}	40 _{L_{Aeq}(15mins)}

For all private residences outside of Camberwell Village (refer to **Figure 3.1**), the noise acquisition limit of 40 dB(A) measured as an $L_{Aeq(15\text{ minute})}$ 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 14-1-2004 for Mt Owen Mine, and Table 1 of DA80/952 for Glendell Mine as these residences and properties have acquisition upon request rights under the respective development consents (refer to **Appendix 1**). The response to an exceedance of land acquisition criteria is discussed in **Section 6.4**.

3.3.3 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. These criteria are presented in **Table 3.5**.

Table 3.5 - Cumulative Noise Criteria for Mt Owen Complex Operations dB(A) from DA 14-1-2004, DA52-03-99 and DA80/952

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

3.3.4 EIS/EA Predictions

For the privately owned land listed in Table 1 of Schedule 4 of the Mt Owen Development Consent (excluding property 91), and land listed in Table 1 of Schedule 3 of the Glendell mine development consent, noise generated by Mt Owen Mine and Glendell Mine will be assessed against the noise level predictions in the Mt Owen Operations EIS and Glendell EA respectively, for any residence on this land (refer to **Appendix 1**). The Mt Owen EIS and Glendell EA noise predictions vary at each property according to meteorological conditions, including wind speed and direction and inversion strength.

A graph showing noise limits derived from the EIS and EA for individual noise monitoring locations will be produced daily. These limits are based on the measured meteorological conditions, which will be cross referenced against meteorological scenarios used to develop the EIS and EA noise predictions. Inversion conditions will be determined using Pasquilli Stability Categories in the Industrial Noise Policy as measured at the Mt Owen Complex weather station. The daily graph will also show actual noise levels, which will allow compliance to be assessed against the EIS and EA predictions.

Results from monitoring locations will be extrapolated to other privately owned residences where EIS and EA predictions apply to enable compliance to be assessed when required.

4.0 Objectives

The objectives of this noise monitoring program are to:

- present relevant noise criteria;
- detail the noise monitoring strategy for the Mt Owen Complex;
- establish a protocol for the assessment and response to noise monitoring data;
- establish a protocol to determine compliance with noise criteria; and
- minimise the impact of noise on the amenity of nearby residents through proactive and reactive use of monitoring data.

5.0 Roles and Responsibilities

Specific responsibilities under this Program are as follows:

Operations Manager

- Ensure that adequate resources are available to implement the requirements of this Program.
- Ensure that the program is relevant to current operations.

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Environment and Community Manager

- Oversee the implementation of the noise monitoring program.
- Coordinate noise monitoring in accordance with this Program.
- Notify regulatory authorities and affected landowners of any noise related exceedance and undertake associated reporting.
- Coordinate periodic reviews of this Program.

Environment and Community Coordinator

- Coordinate noise monitoring in accordance with this Program.
- Develop and maintain a protocol for evaluating compliance with noise criteria contained in this Program.
- Develop and maintain a protocol for assessment and response to continuous noise monitoring data.
- Coordinate investigations of noise exceedances or complaints and implementation of any relevant mitigation and controls.
- Assist and jointly coordinate periodic reviews of this Program.

Open Cut Examiner

- Respond to potential exceedances of noise criteria as identified by the continuous noise monitoring system.
- Review operations in response to alerts and modify 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.

Other Employees and Contractors

All employees and contractors are required to comply with the requirements of this Program.

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6.0 Monitoring and Interpretation

6.1 Monitoring

Monitoring is undertaken in accordance with EPL and Development Consent Conditions, which specify required methods of sampling, analysis and frequency of monitoring (refer to **Appendix 1**).

6.1.1 Monitoring Locations

To assess compliance with noise impact assessment criteria, land acquisition criteria, cumulative criteria and EIS/EA predictions for noise, the Mt Owen Complex will undertake attended monitoring in the surrounding area. XMO also operate a network of continuous noise monitoring units to assess ongoing performance of Mt Owen Complex operations (refer to **Figure 6.1**). Monitoring locations have been chosen to consider residential locations, prevailing weather conditions and the privacy of residents.

The monitoring program is representative of the predicted acquisition and noise impact zones as identified in the Mt Owen Operations EIS and Glendell EA. In addition, a number of proposed noise monitoring locations are situated on land owned by XMO. These monitors will be used as reference monitors to enable assessment of relative noise contributions from Mt Owen Complex operations (refer to **Section 6.2**).

In addition, XMO own and operate a mobile continuous noise monitor that is utilised for additional noise monitoring and complaint investigation.

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 XMO.

6.1.2 Monitoring Program

The noise monitoring program includes a combination of continuous and supplementary attended monitoring measures.

The continuous noise monitoring system adopted is capable of recording:

- period statistical data (L_{A1} , L_{A10} , L_{A90});
- $L_{Aeq \text{ period}}$ and $L_{Aeq \text{ period}}$ 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 $L_{A1(1 \text{ minute})}$ statistical noise levels for sleep disturbance; and
- wind direction, wind speed, temperature, humidity and rainfall.

Data from the monitoring system can be received at preset intervals or can be accessed remotely as required. Furthermore, the system provides an 'alert' to mine personnel at a preset noise level to enable the review of mining during adverse weather conditions, and modification of operations where practical.

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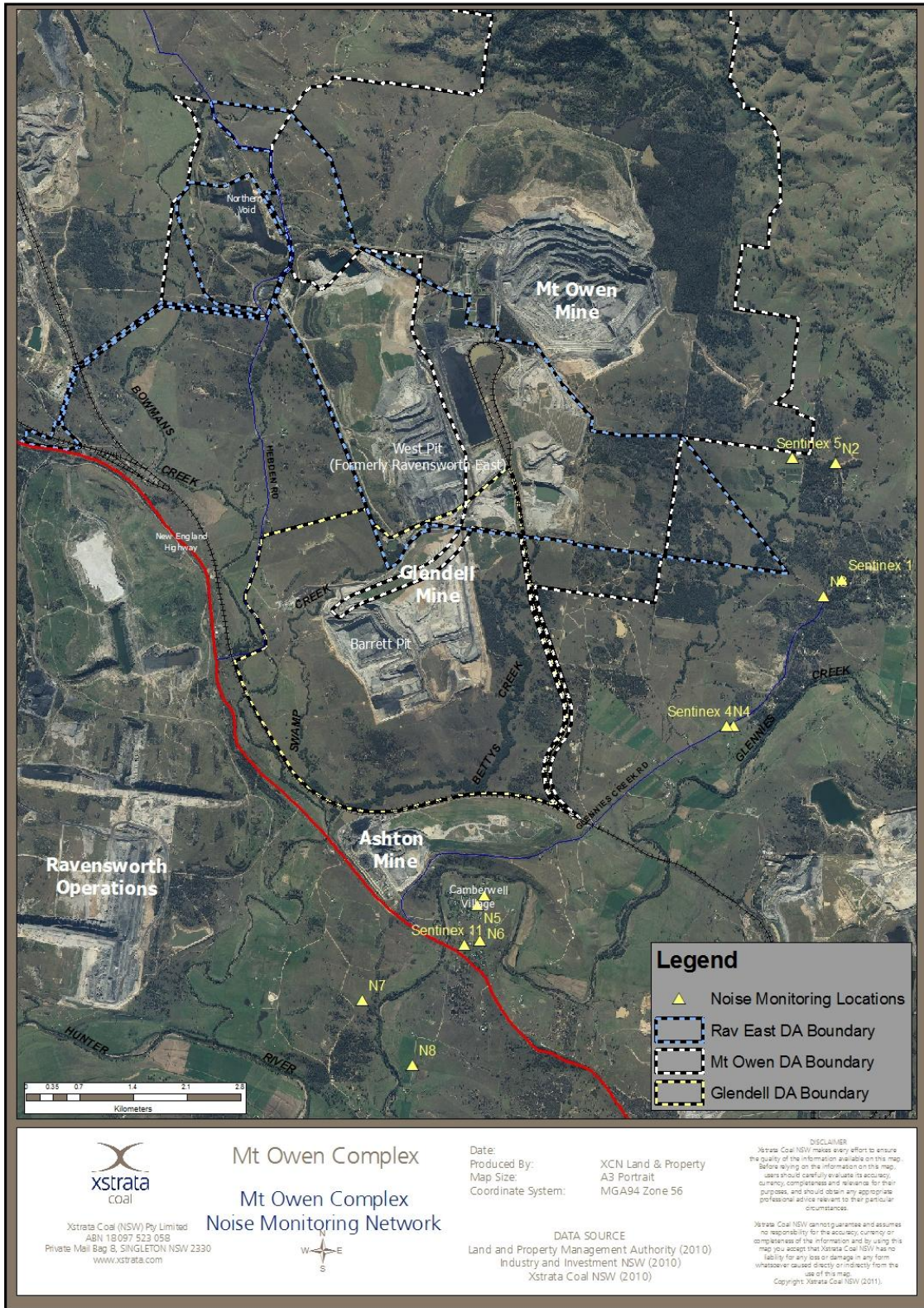


Figure 6.1
 Mt Owen Complex Noise Monitoring Locations

Supplementary attended monitoring will be used to assist the development of a methodology to extrapolate monitoring data from the continuous noise monitoring locations to nearby residences to assess compliance with noise criteria, and for complaint investigation.

6.2 Assessment of Noise Data

6.2.1 Compliance Assessment

Attended noise surveys are used to quantify and describe the acoustic environment around a site. Typically the results are compared with the noise criteria defined in the relevant development consents to assess compliance. Attended monitoring is often referred to as the preferred method for determining compliance with prescribed limits because it allows for an accurate determination of an industrial noise source's contribution, if any, to measured ambient noise levels. However, it is unlikely that the meteorological conditions will be the same as those used to determine the noise emission limits (Condition 4 Note c of DA 14-1-2004) and so the assessment process is not comparing "like with like".

In order to overcome this limitation in attended noise monitoring, the methodology for assessing the compliance of Mt Owen Complex operations with the noise criteria outlined in **Section 3.0** involves:

- attended noise monitoring surveys to measure the ambient noise levels in the surrounding region and determination the mine's contribution to measured noise levels;
- comparing the attended noise monitoring results with the predicted noise levels from a compliance noise model of the mine under like meteorological conditions. The compliance noise model of the mine is prepared using the latest mine plan, equipment schedule, equipment locations and production statistics;
- refining the noise compliance model taking into account the findings of the attended noise monitoring survey;
- using the compliance noise model to predict the noise level in the surrounding region using the meteorological conditions (Condition 4 Note c of DA 14-1-2004) used to determine the noise emission limits; and
- comparing the predicted noise levels with the relevant noise impact assessment criteria to assess compliance of the mine with the relevant development consent and EPL criteria.

The Mt Owen Complex noise monitoring program also includes an assessment of compliance against noise impact assessment criteria, land acquisition criteria, cumulative criteria and the noise predictions in the Mt Owen Operations EIS and Glendell EA (refer to **Section 3.0**).

To determine the impact of Mt Owen Complex on sleep arousal the attended noise surveys include the assessment of the LA1,1minute noise levels generated by the mine. The measured LA1,1minute noise levels are then compared with the relevant sleep

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arousal criteria to assess compliance of the mine with the relevant development consent and EPL criteria.

Compliance with the LAeq,period (where period = day time, evening and night time) cumulative noise level criteria cannot be assessed using the results from attended monitoring or the predictions from a noise compliance model. To determine compliance with the cumulative noise level criteria the noise levels recorded by the XMO 'real-time' noise monitoring network have been used to assess the LAeq,period noise levels from all industrial noise sources. The measured LAeq,period noise levels from all industrial noise sources (mining) are then compared with the relevant cumulative noise level criteria to assess compliance with the relevant development consent and EPL criteria.

6.2.2 Operational Performance Assessment

Ongoing performance assessment of operational noise from Mt Owen Complex operations is undertaken on a regular basis through the assessment of continuous monitoring data against the noise predictions in the Mt Owen Operations EIS and Glendell Mine EA, respectively. 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. These results will be reported to the mine management as appropriate.

In addition the 'real-time' noise monitoring network located in the surrounding region will continue to assist with the ongoing management of potential noise impacts from the Mt Owen Complex operations. 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.

This approach allows the mining operations to compare their actual performance with the performance predicted in the EIS/EA for that stage of the operation. This process provides XMO 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:

- supplement the attended noise monitoring program as it collects data at the same time as the attended noise monitoring is being undertaken; and
- 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.

6.3 Reporting

Noise monitoring result summaries, compliance with Consent and Licence conditions and modifications to the noise assessment process will be reported in the Annual Environmental Management Report (AEMR) on an annual basis.

In addition, XMO will assess compliance with the relative noise criteria (refer to **Section 3.0**) on a quarterly basis, in accordance with relevant EPL conditions. A report containing these monitoring results will be submitted annually with the Annual Return for the respective EPLs.

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Noise monitoring result summaries will be presented at CCC meetings and will also be made available to the public via the Mt Owen Complex Website. These results are to be updated at least every two months.

If monitoring results identify an exceedance of the performance criteria outlined in Schedule 4 of DA 14-1-2004, or Schedule 4 of DA 52-03-99; except where predicted in the relevant EIS, and except where a negotiated agreement has entered into in relation to the impact, XMO will notify DoPI and any affected landowners or tenants of the exceedance/incident. If monitoring results identify an exceedance of the performance criteria outlined in Schedule 3 of DA 80/952, except where predicted in the relevant EA, and except where a negotiated agreement has entered into in relation to the impact, XMO will notify DoPI, other relevant agencies and any affected landowners or tenants of the exceedance/incident. Notified parties will be provided with quarterly monitoring results until it can be demonstrated that the operation is compliant with the relevant development consent.

6.3.1 Incident Reporting

Within 24 hours of detecting an exceedance of the limits/performance criteria outlined in the Glendell Mine development consent (DA80/952), XMO will notify DoPI and other relevant agencies of the exceedance/incident

Within 6 days of notifying the DoPI and other relevant agencies of an exceedance of the limits/performance criteria outlined in the Glendell Mine development consent (DA80/952), XMO will provide the DoPI and other relevant agencies with a written report that:

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

6.4 Corrective Action

Data from the continuous noise monitors will be downloaded on a daily basis, or as required. A trigger will notify site personnel of a potential exceedance of criteria, which will initiate corrective action. The data will be assessed against the relevant criteria.

As outlined in **Section 6.2**, due to the close proximity of neighboring mining operations, assessment of compliance with criteria will require careful consideration of meteorological conditions and other contributing noise sources in order to determine the contribution from the individual Mt Owen Complex operations.

Table 6.1 summarises the potential noise issues that may arise and the appropriate corrective action to be taken.

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Table 6.1 - Corrective Actions

Problem	Corrective Action
Potential for non-compliance with noise criteria based on a trigger (alarm) and/or interpretation of trends in monitoring data.	Initiate process detailed in Table 6.2 . Details of potential non-compliance and the outcomes of investigations will be reported to Senior Management.
Non-compliance of noise criteria.	Initiate process detailed in Table 6.2 . Details of non-compliance and the outcomes of investigations will be reported to Senior Management, DoPI, OEH and affected residents. Where relevant initiate process outlined in Section 6.4.3 .
Community complaints.	Investigation of complaint, taking mitigating measures where applicable and provide feedback to complainant. Report complaint to senior management. Provide feedback to mine planning and production personnel, where relevant.

6.4.1 Noise Investigations

Schedule 4 of the Mt Owen and Ravensworth East Development Consents requires the regular assessment of continuous noise and meteorological monitoring data. Where required, mining operations will be relocated, modified and/or ceased to ensure compliance with noise criteria. Schedule 3 of the Glendell Development Consent requires a noise monitoring program to be developed and implemented, including a noise monitoring protocol for evaluating noise impact assessment criteria and land acquisition criteria. In order to meet these requirements, the results from the continuous monitoring network will be investigated according to the process detailed in **Table 6.2**.

Table 6.2 - Noise Investigation Process

Step	Action
1	Retrieve data on a daily basis or in response to a trigger.
2	Assess results - cross reference weather and operational data.
3	Are results within criteria? 3a. Yes – no further action required. 3b. No – proceed to 4.
4	Can the exceedance potentially be attributed to the Mt Owen Complex? 4a. No – no further action required. 4b. Yes – proceed to 5.
5	Were there any likely short-term operational causes? 5a. No - proceed to 7. 5b. Yes – proceed to 6.
6	Can the offending activity be modified during prevailing conditions? 6a. No – proceed to 7. 6b. Yes – modify activity and check subsequent results.
7	Confirm trend for subsequent results under similar conditions. 7a. Yes – proceed to 8. 7b. No – closely monitor similar conditions.
8	Assess medium to long-term site management options.

Table 6.2 - Noise Investigation Process (cont)

Step	Action
9	Reductions achievable? 9a. Yes – modify operations and monitor results. 9b. No – trigger relevant conditions of Consent – Further details of this process are provided in Section 6.4.3 .

6.4.2 Complaints Management

The Mt Owen Complex operates a dedicated complaints hotline. The details of this are advertised in local newspapers at least quarterly, via the six monthly Mt Owen Complex Community Newsletter and on the Mt Owen Complex website.

A procedure for handling complaints has been implemented as part of the Mt Owen Complex EMS which is in line with EPL requirements. The procedure provides a consistent approach to managing any complaints. All complaints will be 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 will be provided as quickly as possible.

A community complaint report will be included in the AEMR. 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.

6.4.3 Dispute Resolution and Land Acquisition

Response to Demonstrated Non-compliance of Noise Impact Assessment Criteria

If noise monitoring results confirm that noise generated by the Mt Owen, Ravensworth East or Glendell Mine exceeds noise impact assessment criteria (except where an alternative agreement with the landowner exists) then the Director-General of DoPI and any affected residents shall be notified and provided with quarterly monitoring results until results show compliance with the noise impact assessment criteria.

If compliance with noise impact assessment criteria cannot be achieved, following written request from the landholder, XMO will implement additional noise mitigation measures or attempt to reach an alternative agreement with the land owner.

If within three months of receiving this written request, and XMO and the affected landholder cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General of DoPI for resolution in accordance with the procedures outlined in **Appendix 2**.

Response to a Residents Claim of a Non-compliance of Noise Criteria

If a landowner believes that the Mt Owen or Ravensworth East Mine is exceeding noise criteria or predictions in the EIS the landowner may ask, in writing, for an independent review of the noise impacts on his/her land. If the Director-General of DoPI is satisfied that an independent review is warranted, then within three months of the Director-General advising, a review will be undertaken in accordance with conditions outlined in Schedule 5 of the Mt Owen and Ravensworth East Development Consents.

If a landowner believes that the Glendell Mine is exceeding noise criteria or noise predictions in the EA the landowner may ask in writing for an independent review of the noise impacts on his/her land. If the Director-General of DoPI is satisfied that an independent review is warranted, then within two months of the Director-General advising, a review will be undertaken in accordance with conditions outlined in Schedule 4 of the Glendell Development Consent. Further information regarding this process is provided in **Appendix 2**.

Land Acquisition

If the independent review process outlined above or monitoring results show that there is an exceedance of the relevant land acquisition criteria due to the operation of Mt Owen, Ravensworth East or Glendell Mine, the affected landholder will be entitled to request acquisition. XMO will follow the Land Acquisition process outlined in Schedule 5 of the Mt Owen and Ravensworth East Development Consents and Schedule 4 of the Glendell Development Consent. Further information regarding this process is provided in **Appendix 2**.

7.0 Auditing and Review

The Noise Monitoring Program is to be reviewed at least every three years or as otherwise directed by the Director-General of DoPI. The review process is to reflect changes in environmental legislation and guidelines and changes in technology or operational procedures.

In accordance with Consent Conditions for Mt Owen, Ravensworth East and Glendell, every three years, XMO will commission an Independent Environmental Audit to the satisfaction of DoPI. The Audit will include an assessment of the adequacy of the Noise Monitoring Program. Where necessary following the audit, the Program will be updated and action taken to improve performance and management practices.

The original Noise Monitoring Program required under the Mt Owen and Ravensworth East development consents was submitted for the approval of DoPI in June 2005. The first review of the Noise Monitoring Program has coincided with the modification of the plan to include the requirements of the Glendell development consent and following the independent audit conducted in December 2007. This review is undertaken in November 2011.

XMO are currently undertaking an extensive validation process for the use of the continuous noise monitoring system as a tool to assess compliance with relevant noise criteria. This validation process is being undertaken in consultation with DoPI and OEH. The outcomes of this validation process will be incorporated into the next review of this monitoring program.

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8.0 References

ERM Mitchell McCotter Pty Ltd, 1999. *The Ravensworth East Mine Environmental Impact Statement*.

Environment Protection Authority, 2000. *New South Wales Industrial Noise Policy*.

Umwelt Australia Pty Ltd, 2003. *The Mt Owen Operations Environmental Impact Statement*.

Umwelt (Australia) Pty Limited, 2007. *Environmental Assessment for Modification of Glendell Mine Operations*.

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APPENDIX 1

Development Consent and Licence Conditions

APPENDIX 1a - Mt Owen Development Consent (DA 14-1-2004) – Noise Conditions

Condition Number	Condition Title	Condition Detail	Section of Plan																		
Schedule 4, Condition 1	Acquisition Upon Request	<p>Upon receiving a written request for acquisition from the landowner of the land listed in Table 1, the Applicant shall acquire the land in accordance with the procedures in conditions 10-12 of schedule 5:</p> <p align="center">Table 1: Land subject to acquisition upon request (project specific)</p> <table border="1" data-bbox="667 499 1780 1241"> <tbody> <tr> <td align="center">64 – Richards</td> <td align="center">84 - Lawlor</td> </tr> <tr> <td align="center">66 – Cramp</td> <td align="center">85 - Frost</td> </tr> <tr> <td align="center">67 – Robinson and Brandl</td> <td align="center">87 - Westcott</td> </tr> <tr> <td align="center">68 - Deaves</td> <td align="center">88 - Flynn</td> </tr> <tr> <td align="center">69 - Fairfull</td> <td align="center">89 - White</td> </tr> <tr> <td align="center">70 – Johnson</td> <td align="center">91 - Lancaster</td> </tr> <tr> <td align="center">72 – Baker and Ellis</td> <td align="center">108 – Gardener (north of Glennies Creek Road)</td> </tr> <tr> <td align="center">73 - Cole</td> <td align="center">109 - Noble</td> </tr> <tr> <td align="center">83 – Rose</td> <td align="center">110 - Donellan</td> </tr> </tbody> </table> <p><i>Note: For more information on the numbering and identification of properties used in this consent, see Appendix 5 of the Applicant's Primary Submission to the Commission of Inquiry, dated June 2004.</i></p>	64 – Richards	84 - Lawlor	66 – Cramp	85 - Frost	67 – Robinson and Brandl	87 - Westcott	68 - Deaves	88 - Flynn	69 - Fairfull	89 - White	70 – Johnson	91 - Lancaster	72 – Baker and Ellis	108 – Gardener (north of Glennies Creek Road)	73 - Cole	109 - Noble	83 – Rose	110 - Donellan	Section 6.4.3
64 – Richards	84 - Lawlor																				
66 – Cramp	85 - Frost																				
67 – Robinson and Brandl	87 - Westcott																				
68 - Deaves	88 - Flynn																				
69 - Fairfull	89 - White																				
70 – Johnson	91 - Lancaster																				
72 – Baker and Ellis	108 – Gardener (north of Glennies Creek Road)																				
73 - Cole	109 - Noble																				
83 – Rose	110 - Donellan																				

Condition Number	Condition Title	Condition Detail	Section of Plan																				
Schedule 4, Condition 2	Noise Impact Assessment Criteria	<p>The Applicant shall ensure that the noise generated by the development does not exceed the noise impact assessment criteria in Table 2.</p> <p style="text-align: center;">Table 2: Noise impact assessment criteria dB(A)</p> <table border="1" data-bbox="629 432 1780 791"> <thead> <tr> <th data-bbox="629 432 801 491">Day <i>L_{Aeq(15 minute)}</i></th> <th data-bbox="801 432 1025 491">Evening/Night <i>L_{Aeq(15 minute)}</i></th> <th data-bbox="1025 432 1196 491">Night <i>L_{A1(1 minute)}</i></th> <th data-bbox="1196 432 1780 491">Land Number</th> </tr> </thead> <tbody> <tr> <td data-bbox="629 491 801 550">37</td> <td data-bbox="801 491 1025 550">37</td> <td data-bbox="1025 491 1196 550">45</td> <td data-bbox="1196 491 1780 550">29 - Nagle and Partridge</td> </tr> <tr> <td data-bbox="629 550 801 609"></td> <td data-bbox="801 550 1025 609"></td> <td data-bbox="1025 550 1196 609"></td> <td data-bbox="1196 550 1780 609">55 - Bodiam</td> </tr> <tr> <td data-bbox="629 609 801 703">36</td> <td data-bbox="801 609 1025 703">36</td> <td data-bbox="1025 609 1196 703">45</td> <td data-bbox="1196 609 1780 703">40 - Holmes 53 - Cullinan 54 - Reid 93 - Scott 90 - Wilson</td> </tr> <tr> <td data-bbox="629 703 801 791">35</td> <td data-bbox="801 703 1025 791">35</td> <td data-bbox="1025 703 1196 791">45</td> <td data-bbox="1196 703 1780 791">All other privately owned land, excluding the land listed in Table 1 apart from 91 - Lancaster</td> </tr> </tbody> </table> <p>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 the DECC, then the Applicant may exceed the noise limits in Table 2 in accordance with the negotiated noise agreement.</p> <p>Notes:</p> <p>(a) Noise from the development is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary, to determine compliance with the <i>L_{Aeq(15 minute)}</i> noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DEC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.</p> <p>(b) Noise from the development is to be measured at 1 metre from the dwelling façade to determine compliance with the <i>L_{A1(1 minute)}</i> noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DEC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).</p> <p>(c) The noise emission limits identified in the above table apply under meteorological conditions of:</p> <ul style="list-style-type: none"> • Wind speeds of up to 3 m/s at 10 metres above ground level; or • Temperature inversion conditions of up to 3°C/100m, and wind speeds of up to 2 m/s at 10 metres above ground level. 	Day <i>L_{Aeq(15 minute)}</i>	Evening/Night <i>L_{Aeq(15 minute)}</i>	Night <i>L_{A1(1 minute)}</i>	Land Number	37	37	45	29 - Nagle and Partridge				55 - Bodiam	36	36	45	40 - Holmes 53 - Cullinan 54 - Reid 93 - Scott 90 - Wilson	35	35	45	All other privately owned land, excluding the land listed in Table 1 apart from 91 - Lancaster	Section 3.3 & 6.2
Day <i>L_{Aeq(15 minute)}</i>	Evening/Night <i>L_{Aeq(15 minute)}</i>	Night <i>L_{A1(1 minute)}</i>	Land Number																				
37	37	45	29 - Nagle and Partridge																				
			55 - Bodiam																				
36	36	45	40 - Holmes 53 - Cullinan 54 - Reid 93 - Scott 90 - Wilson																				
35	35	45	All other privately owned land, excluding the land listed in Table 1 apart from 91 - Lancaster																				

Condition Number	Condition Title	Condition Detail	Section of Plan				
Schedule 4, Condition 3	Noise Impact Assessment Criteria	While the land listed in Table 1 (excluding 91 – Lancaster) is privately owned, the Applicant shall ensure that the noise generated by the development does not exceed the noise predictions in the EIS for any residence on this land.	Section 3.3 & 6.2				
Schedule 4, Condition 4	Additional Noise Mitigation Measures	<p>Upon receiving a written request from:</p> <ul style="list-style-type: none"> a landowner of the land listed in Table 1 (excluding 91 – Lancaster); or a landowner of the land numbered 29 (Nagle and Partridge) and 55 (Bodiam) in the EIS; or the owner of any residence where subsequent noise monitoring shows the noise generated by the development is greater than, or equal to, $L_{Aeq(15\text{ minute})}$ 37 dB(A), <p>the Applicant shall implement additional noise mitigation measures in the form of 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 Director-General for resolution.</p>	Section 6.4				
Schedule 4, Condition 5	Land Acquisition Criteria	<p>If the noise generated by the development exceeds the criteria in Table 3, the Applicant shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 10-12 of schedule 5.</p> <p style="text-align: center;">Table 3: Land acquisition criteria dB(A)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><i>Day/Evening/Night</i> $L_{Aeq(15\text{ minute})}$</th> <th style="text-align: center;"><i>Land</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">40</td> <td style="text-align: center;"><i>All privately owned land, excluding the land listed in Table 1</i></td> </tr> </tbody> </table> <p><i>Note: Noise generated by the development is to be measured in accordance with the notes presented below Table 2.</i></p>	<i>Day/Evening/Night</i> $L_{Aeq(15\text{ minute})}$	<i>Land</i>	40	<i>All privately owned land, excluding the land listed in Table 1</i>	Section 3.3 & 6.4
<i>Day/Evening/Night</i> $L_{Aeq(15\text{ minute})}$	<i>Land</i>						
40	<i>All privately owned land, excluding the land listed in Table 1</i>						
Schedule 4, Condition 6	Cumulative Noise Criteria	<p>The Applicant shall 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 on any privately owned land, excluding the land listed in Table 1 (excluding 91 – Lancaster):</p> <ul style="list-style-type: none"> $L_{Aeq(11\text{ hour})}$ 50 dB(A) – Day; $L_{Aeq(4\text{ hour})}$ 45 dB(A) – Evening; and $L_{Aeq(9\text{ hour})}$ 40 dB(A) – Night. 	Section 3.3 & 6.2				

Condition Number	Condition Title	Condition Detail	Section of Plan
Schedule 4, Condition	Cumulative Noise Criteria	<p>If the cumulative noise generated by the development combined with the noise generated by other mines exceeds the following amenity criteria on any privately owned land, excluding the land listed in Table 1, then upon receiving a written request from the landowner, the Applicant shall acquire the land on as equitable basis as possible with the relevant mines, in accordance with the procedures in conditions 10-12 of schedule 5:</p> <ul style="list-style-type: none"> • $L_{Aeq(11\text{ hour})}$ 53 dB(A) – Day; • $L_{Aeq(4\text{ hour})}$ 48 dB(A) – Evening; and • $L_{Aeq(9\text{ hour})}$ 43 dB(A) – Night. 	Section 3.3 & 6.2
Schedule 4, Condition 8	Monitoring	<p>Within 6 months of this consent, the Applicant shall prepare and implement a Noise Monitoring Program for the development, to the satisfaction of the Director-General. The Noise Monitoring Program shall include a combination of real-time and supplementary attended monitoring measures, and a noise monitoring protocol for evaluating compliance with the noise impact assessment and land acquisition criteria in this consent.</p>	All
Schedule 4, Condition 9	Continuous Improvement	<p>The Applicant shall:</p> <ol style="list-style-type: none"> a) investigate ways to reduce the noise generated by the development, including maximum noise levels which may result in sleep disturbance; b) implement all reasonable and feasible best practice noise mitigation measures on the site; and c) report on these investigations and the implementation of any new noise mitigation measures on site in the AEMR, <p>to the satisfaction of the Director-General.</p>	All

APPENDIX 1b - Ravensworth East Development Consent (DA 52-03-99) – Noise Conditions

Condition Number	Condition Title	Condition Detail	Section of Plan								
Schedule 4, Condition 1	Noise Impact Assessment Criteria	<p>The applicant shall ensure that the noise generated by the development does not exceed the noise impact assessment criteria in Table 1.</p> <p align="center">Table 1: Noise impact assessment criteria dB(A)</p> <table border="1" data-bbox="629 499 1778 655"> <thead> <tr> <th data-bbox="629 499 840 592"><i>Day</i> <i>L_{Aeq}(15 minute)</i></th> <th data-bbox="840 499 1064 592"><i>Evening/Night</i> <i>L_{Aeq}(15 minute)</i></th> <th data-bbox="1064 499 1254 592"><i>Night</i> <i>L_{A1}(1 minute)</i></th> <th data-bbox="1254 499 1778 592"><i>Land Number</i></th> </tr> </thead> <tbody> <tr> <td align="center" data-bbox="629 592 840 655">35</td> <td align="center" data-bbox="840 592 1064 655">35</td> <td align="center" data-bbox="1064 592 1254 655">45</td> <td align="center" data-bbox="1254 592 1778 655">All privately owned land</td> </tr> </tbody> </table> <p>However, if the Applicant has a written negotiated noise agreement with any landowner of the land listed in Table 1, and a copy of this agreement has been forwarded to the Department and the DECC, then the Applicant may exceed the noise limits in Table 2 in accordance with the negotiated noise agreement.</p> <p><i>Notes:</i></p> <p>(a) Noise from the development is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary, to determine compliance with the <i>L_{Aeq}(15 minute)</i> noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DEC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.</p> <p>(b) Noise from the development is to be measured at 1 metre from the dwelling façade to determine compliance with the <i>L_{A1}(1 minute)</i> noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DEC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).</p> <p>(c) The noise emission limits identified in the above table apply under meteorological conditions of:</p> <ul style="list-style-type: none"> • Wind speeds of up to 3 m/s at 10 metres above ground level; or • Temperature inversion conditions of up to 3°C/100m, and wind speeds of up to 2 m/s at 10 metres above ground level. 	<i>Day</i> <i>L_{Aeq}(15 minute)</i>	<i>Evening/Night</i> <i>L_{Aeq}(15 minute)</i>	<i>Night</i> <i>L_{A1}(1 minute)</i>	<i>Land Number</i>	35	35	45	All privately owned land	Section 3.3 & 6.0
<i>Day</i> <i>L_{Aeq}(15 minute)</i>	<i>Evening/Night</i> <i>L_{Aeq}(15 minute)</i>	<i>Night</i> <i>L_{A1}(1 minute)</i>	<i>Land Number</i>								
35	35	45	All privately owned land								

Condition Number	Condition Title	Condition Detail	Section of Plan				
Schedule 4, Condition 2	Noise Impact Assessment Criteria	<p>If the noise generated by the development exceeds the criteria in Table 2, the Applicant shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 9 - 11 of schedule 5.</p> <p style="text-align: center;">Table 2: Land acquisition criteria dB(A)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><i>Day/Evening/Night</i> <i>L_{Aeq(15 minute)}</i></th> <th style="text-align: center;"><i>Land</i></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">40</td> <td style="text-align: center;"><i>All privately owned land</i></td> </tr> </tbody> </table> <p><i>Note: Noise generated by the development is to be measured in accordance with the notes presented below Table 1.</i></p>	<i>Day/Evening/Night</i> <i>L_{Aeq(15 minute)}</i>	<i>Land</i>	40	<i>All privately owned land</i>	Section 3.3 & 6.4
<i>Day/Evening/Night</i> <i>L_{Aeq(15 minute)}</i>	<i>Land</i>						
40	<i>All privately owned land</i>						
Schedule 4, Condition 3	Cumulative Noise Criteria	<p>The Applicant shall 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 on any privately owned land:</p> <ul style="list-style-type: none"> • <i>L_{Aeq(11 hour)} 50 dB(A) – Day;</i> • <i>L_{Aeq(4 hour)} 45 dB(A) – Evening; and</i> • <i>L_{Aeq(9 hour)} 40 dB(A) – Night.</i> 	Section 3.3 & 6.0				
Schedule 4, Condition 4	Cumulative Noise Criteria	<p>If the cumulative noise generated by the development combined with the noise generated by other mines exceeds the following amenity criteria on any privately owned land, then upon receiving a written request from the landowner, the Applicant shall acquire the land on as equitable basis as possible with the relevant mines, in accordance with the procedures in conditions 7 - 9 of schedule 5:</p> <ul style="list-style-type: none"> • <i>L_{Aeq(11 hour)} 53 dB(A) – Day;</i> • <i>L_{Aeq(4 hour)} 48 dB(A) – Evening; and</i> • <i>L_{Aeq(9 hour)} 43 dB(A) – Night.</i> 	Section 3.3 & 6.0				
Schedule 4, Condition 5	Monitoring	<p>By the end of June 2005, the Applicant shall prepare and implement a Noise Monitoring Program for the development, to the satisfaction of the Director-General. The Noise Monitoring Program shall include a combination of real-time and supplementary attended monitoring measures, and a noise monitoring protocol for evaluating compliance with the noise impact assessment and land acquisition criteria in this consent.</p>	All				

Condition Number	Condition Title	Condition Detail	Section of Plan
Schedule 4, Condition 6	Continuous Improvement	<p>The Applicant shall:</p> <ul style="list-style-type: none"> a) investigate ways to reduce the noise generated by the development, including maximum noise levels which may result in sleep disturbance; b) implement all reasonable and feasible best practice noise mitigation measures on the site; and c) report on these investigations and the implementation of any new noise mitigation measures on site in the AEMR, <p>to the satisfaction of the Director-General.</p>	All

APPENDIX 1c - Glendell Development Consent (DA 80/952) – Noise Conditions

Condition Number	Condition Title	Condition Detail	Section of Plan																																				
Schedule 3 Condition 2	Noise Impact Assessment Criteria	<p>The Applicant shall 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.</p> <p>Table 2: Noise impact assessment criteria dB(A)</p> <table border="1"> <thead> <tr> <th>Land Number¹</th> <th>Day L_{Aeq}(15 minute)</th> <th>Evening/Night L_{Aeq}(15 minute)</th> <th>Night L_{A1}(1 minute)</th> </tr> </thead> <tbody> <tr> <td>Camberwell Village A 30 – Ninness 33 – Peachey 37c – Richards 53 – Yates 11 – Chisholm</td> <td align="center">42</td> <td align="center">42</td> <td align="center">45</td> </tr> <tr> <td>22b – Turner 35 – Pugh</td> <td align="center">41</td> <td align="center">41</td> <td align="center">45</td> </tr> <tr> <td>Other privately-owned land in Camberwell Village A</td> <td align="center">40</td> <td align="center">40</td> <td align="center">45</td> </tr> <tr> <td>Camberwell Village B 20 – Foord 21A & 21b – Merchant 38 – Robertson 47 & 50 – Vollebregt & Clarke</td> <td align="center">42</td> <td align="center">42</td> <td align="center">45</td> </tr> <tr> <td>6 – Bennett 24 – Lopes</td> <td align="center">40</td> <td align="center">40</td> <td align="center">45</td> </tr> <tr> <td>4 – Standing 40 - Smiles</td> <td align="center">39</td> <td align="center">39</td> <td align="center">45</td> </tr> <tr> <td>32 – Green 44 – Stapleton</td> <td align="center">38</td> <td align="center">38</td> <td align="center">45</td> </tr> <tr> <td>Other privately owned land in Camberwell Village B</td> <td align="center">37</td> <td align="center">37</td> <td align="center">45</td> </tr> </tbody> </table>	Land Number¹	Day L _{Aeq} (15 minute)	Evening/Night L _{Aeq} (15 minute)	Night L _{A1} (1 minute)	Camberwell Village A 30 – Ninness 33 – Peachey 37c – Richards 53 – Yates 11 – Chisholm	42	42	45	22b – Turner 35 – Pugh	41	41	45	Other privately-owned land in Camberwell Village A	40	40	45	Camberwell Village B 20 – Foord 21A & 21b – Merchant 38 – Robertson 47 & 50 – Vollebregt & Clarke	42	42	45	6 – Bennett 24 – Lopes	40	40	45	4 – Standing 40 - Smiles	39	39	45	32 – Green 44 – Stapleton	38	38	45	Other privately owned land in Camberwell Village B	37	37	45	Section 3.3 and 6.0
Land Number¹	Day L _{Aeq} (15 minute)	Evening/Night L _{Aeq} (15 minute)	Night L _{A1} (1 minute)																																				
Camberwell Village A 30 – Ninness 33 – Peachey 37c – Richards 53 – Yates 11 – Chisholm	42	42	45																																				
22b – Turner 35 – Pugh	41	41	45																																				
Other privately-owned land in Camberwell Village A	40	40	45																																				
Camberwell Village B 20 – Foord 21A & 21b – Merchant 38 – Robertson 47 & 50 – Vollebregt & Clarke	42	42	45																																				
6 – Bennett 24 – Lopes	40	40	45																																				
4 – Standing 40 - Smiles	39	39	45																																				
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Condition Number	Condition Title	Condition Detail				Section of Plan
		Land Number¹	Day <small>L_{Aeq}(15 minute)</small>	Evening/Night <small>L_{Aeq}(15 minute)</small>	Night <small>L_{A1}(1 minute)</small>	
		Camberwell Village C 27 – McInerney	40	40	45	
		31 - Olofsson	38	38	45	
		Other privately owned land in Camberwell Village C	35	35	45	
		Other Privately Owned Land 37a & 37b – Richards 83 – Westcott 110 – Hall	38	38	45	
		34 – Poulton 87 – Fairfull 9 – Burgess	37	37	45	
		18 – Hall 45 & 46 - Tisdell	36	36	45	
		All other privately owned land	35	35	45	
		Camberwell Hall and St Clements Church	40	40	-	
		1 – Property reference numbers used in the table correspond to those used in the Environmental Assessment for the Modification of Glendell Mine Operations (Umwelt, 2007).				
		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 DECC, then the Applicant may exceed the noise limits in Table 2 in accordance with the negotiated noise agreement.				
		<i>Notes:</i>				
		<ul style="list-style-type: none"> <i>The land numbers and receiver references are as described in the EA, and shown on the figures in Appendix 4.</i> 				
		<ul style="list-style-type: none"> <i>To determine compliance with the LAeq(15 minute) noise limits, noise from the development is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the</i> 				

Condition Number	Condition Title	Condition Detail	Section of Plan										
		<p><i>development is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.</i></p> <ul style="list-style-type: none"> <i>To determine compliance with the LA1(1 minute) noise limits, noise from the development is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the development is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).</i> <i>The noise emission limits identified in the above table apply under meteorological conditions of:</i> <ul style="list-style-type: none"> <i>wind speeds of up to 3 m/s at 10 metres above ground level; or</i> <i>temperature inversion conditions of up to 3°C/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.</i> 											
Schedule 3 Condition 3	Land Acquisition Criteria	<p>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 shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 9-11 of schedule 4.</p> <p><i>Table 3: Land acquisition criteria dB(A)</i></p> <table border="1"> <thead> <tr> <th>Land</th> <th>Day/Evening/Night LAeq(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> <p><i>Note: Noise generated by the development is to be measured in accordance with the notes presented in Table 2.</i></p>	Land	Day/Evening/Night LAeq(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 3.3 and Section 6.4
Land	Day/Evening/Night LAeq(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	<p>The Applicant shall 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 Director-General:</p>	Section 3.3 and Section 6.0										

Condition Number	Condition Title	Condition Detail	Section of Plan
		<ul style="list-style-type: none"> • <i>L_{Aeq}(11 hour) 50 dB(A) – Day;</i> • <i>L_{Aeq}(4 hour) 45 dB(A) – Evening; and</i> • <i>L_{Aeq}(9 hour) 40 dB(A) – Night.</i> 	
Schedule 3 Condition 5	Cumulative Noise Criteria	<p>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 shall 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 Director-General:</p> <ul style="list-style-type: none"> • <i>L_{Aeq}(11 hour) 53 dB(A) – Day;</i> • <i>L_{Aeq}(4 hour) 48 dB(A) – Evening; and</i> • <i>L_{Aeq}(9 hour) 43 dB(A) – Night.</i> <p><i>Note: The cumulative noise generated by the development combined with the noise generated by other mines is to be measured in accordance with the relevant procedures in the NSW Industrial Noise Policy.</i></p>	Section 3.3 and Section 6.0
Schedule 3 Condition 6	Additional Noise Mitigation Measures	<p>Upon receiving a written request from:</p> <ul style="list-style-type: none"> • 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 shall 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. <p>These additional mitigation measures must be reasonable and feasible.</p> <p>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 Director-General for resolution.</p>	Section 3.3 and Section 6.4

Condition Number	Condition Title	Condition Detail	Section of Plan																						
		<p>By the end of April 2008, the Applicant shall notify all applicable landowners that they are entitled to receive additional noise mitigation measures, to the satisfaction of the Director-General.</p> <p><i>Table 4: Land subject to additional noise mitigation upon request</i></p> <table border="1" data-bbox="875 491 1648 715"> <tbody> <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> </tbody> </table> <p><i>Table 5: Additional noise mitigation criteria dB(A)</i></p> <table border="1" data-bbox="936 807 1588 1086"> <thead> <tr> <th>Land</th> <th>Day/Evening/Night LAeq(15 minute)</th> </tr> </thead> <tbody> <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> </tbody> </table> <p><i>Note: Noise generated by the development is to be measured in accordance with the notes presented below Table 2.</i></p>	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 LAeq(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	
6 – Bennett	37a – Richards																								
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All other privately-owned land, excluding the land listed in Table 1.	38																								
Schedule 3 Condition 7	Continuous Improvement	<p>The Applicant shall:</p> <p>(a) implement all reasonable and feasible best practice noise mitigation measures;</p> <p>(b) investigate ways to reduce the noise generated by the development, including maximum noise levels which may result in sleep disturbance; and</p> <p>(c) report on these investigations and the implementation and effectiveness of these measures in the AEMR.</p>	Section 6.3.2.4																						

Condition Number	Condition Title	Condition Detail	Section of Plan
Schedule 3 Condition 8	Monitoring	<p>The Applicant shall prepare and implement a Noise Monitoring Program for the development to the satisfaction of the Director-General. This program must:</p> <p>(a) be prepared in consultation with DECC;</p> <p>(b) be submitted to the Director-General for approval by the end of April 2008; and</p> <p>(c) include a:</p> <ul style="list-style-type: none"> • 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. 	Section 6.0

APPENDIX 1d - Mt Owen Environmental Protection Licence (EPL No: 4460) – Noise Conditions

Condition Number	Condition Title	Condition Detail	Section of Plan																								
Condition L6.1	Noise Limits	<p>Noise generated at the premises must not exceed the noise limits presented in the table below:</p> <table border="1" data-bbox="680 437 1800 916"> <thead> <tr> <th data-bbox="689 443 1115 512" rowspan="2">Location</th> <th data-bbox="1122 443 1285 480">Day</th> <th data-bbox="1292 443 1456 480">Evening</th> <th colspan="2" data-bbox="1462 443 1792 480">Night</th> </tr> <tr> <th data-bbox="1122 485 1285 512">L_{Aeq}(15 minute)</th> <th data-bbox="1292 485 1456 512">L_{Aeq}(15 minute)</th> <th data-bbox="1462 485 1626 512">L_{Aeq}(15 minute)</th> <th data-bbox="1632 485 1792 512">L_{A1}(1 minute)</th> </tr> </thead> <tbody> <tr> <td data-bbox="689 517 1115 585">29 - SP Nagle / PL Partridge 55 - GG Bodiam</td> <td align="center" data-bbox="1122 517 1285 585">37</td> <td align="center" data-bbox="1292 517 1456 585">37</td> <td align="center" data-bbox="1462 517 1626 585">37</td> <td align="center" data-bbox="1632 517 1792 585">45</td> </tr> <tr> <td data-bbox="689 590 1115 766">40 - GL Holmes 53 - RC Cullinan / BA Cullinan 54 - JT Reid / HJ Reid 90 – BG Wilson/ DJ Wilson 93 - BW Scott / YE Scott</td> <td align="center" data-bbox="1122 590 1285 766">36</td> <td align="center" data-bbox="1292 590 1456 766">36</td> <td align="center" data-bbox="1462 590 1626 766">36</td> <td align="center" data-bbox="1632 590 1792 766">45</td> </tr> <tr> <td data-bbox="689 770 1115 909">All other privately owned residences except those listed in Table 1 of the 'Acquisition Upon Request' section of Development Consent DA-14-1-2004 (apart from 91-Lancaster)</td> <td align="center" data-bbox="1122 770 1285 909">35</td> <td align="center" data-bbox="1292 770 1456 909">35</td> <td align="center" data-bbox="1462 770 1626 909">35</td> <td align="center" data-bbox="1632 770 1792 909">45</td> </tr> </tbody> </table> <p data-bbox="645 948 1733 1007">Property reference numbers used in this table correspond to those used in the <i>Mount Owen Operations Environmental Impact Statement</i> prepared by Umwelt dated December 2003.</p>	Location	Day	Evening	Night		L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A1} (1 minute)	29 - SP Nagle / PL Partridge 55 - GG Bodiam	37	37	37	45	40 - GL Holmes 53 - RC Cullinan / BA Cullinan 54 - JT Reid / HJ Reid 90 – BG Wilson/ DJ Wilson 93 - BW Scott / YE Scott	36	36	36	45	All other privately owned residences except those listed in Table 1 of the 'Acquisition Upon Request' section of Development Consent DA-14-1-2004 (apart from 91-Lancaster)	35	35	35	45	Section 3.3 & 6.0
Location	Day	Evening		Night																							
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A1} (1 minute)																							
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All other privately owned residences except those listed in Table 1 of the 'Acquisition Upon Request' section of Development Consent DA-14-1-2004 (apart from 91-Lancaster)	35	35	35	45																							
Condition L6.2	Noise Limits	<p>For the purposes of condition 6.1:</p> <ul data-bbox="645 1059 1836 1224" style="list-style-type: none"> • 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; • Evening is defined as the period 6 pm to 10 pm, and • 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 2.0																								

Condition Number	Condition Title	Condition Detail	Section of Plan
Condition L6.3	Noise Limits	<p>Noise from the premises is to be measured at the most affected point or within the residential boundary or at the most affect point within 30 metres of the dwelling (rural situations) where the dwelling is more than 30 metres from the boundary to determine compliance with the $L_{Aeq(15\text{ minute})}$ noise limits in condition L6.1.</p> <p>Where it can be demonstrated that direct measurement of noise from the premises is impractical, the EPA may accept alternative means of determining compliance. See Chapter 11 of the NSW Industrial Noise Policy.</p> <p>The modification factors presented in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.</p>	Section 6.0
Condition L6.4	Noise Limits	To determine compliance with condition(s) L6.1 noise must be measured at, or computed for, 1 metre from the dwelling facade. A modifying factor correction must be applied for tonal, impulsive or intermittent noise in accordance with the "Environmental Noise Management - NSW Industrial Noise Policy (January 2000)".	Section 6.0
Condition L6.5	Noise Limits	<p>The noise emission limits identified in condition L6.1 apply under meteorological conditions of:</p> <ul style="list-style-type: none"> wind speed up to 3m/s at 10 metres above ground level; or temperature inversion conditions of up to 3°C/100m and wind speed up to 2m/s at 10 metres above the ground. 	Section 3.3

APPENDIX 1e - Glendell Environmental Protection Licence (EPL No: 12840) – Noise Conditions

Condition Number	Condition Title	Condition Detail	Section of Plan																																							
L6.1	Noise limits	<p>Noise from the premises must not exceed the sound pressure level (noise) limits presented in the Table below. Note the limits represent the sound pressure level (noise) contribution, at the nominated receiver locations in the table. Noise limits relate to the noise contribution from the Glendell Coal Mine only.</p> <table border="1"> <thead> <tr> <th rowspan="2">Location</th> <th>Day</th> <th>Evening</th> <th colspan="2">Night</th> </tr> <tr> <th>L_{Aeq}(15 minute)</th> <th>L_{Aeq}(15 minute)</th> <th>L_{Aeq}(15 minute)</th> <th>L_{A1}(1 minute)</th> </tr> </thead> <tbody> <tr> <td>4 Standing</td> <td>39</td> <td>39</td> <td>39</td> <td>45</td> </tr> <tr> <td>6 Bennett</td> <td>40</td> <td>40</td> <td>40</td> <td>45</td> </tr> <tr> <td>9 Burgess</td> <td>36</td> <td>36</td> <td>36</td> <td>45</td> </tr> <tr> <td>27 McInerney</td> <td>40</td> <td>40</td> <td>40</td> <td>45</td> </tr> <tr> <td>83 Westcott</td> <td>38</td> <td>38</td> <td>38</td> <td>45</td> </tr> <tr> <td>110 Hall</td> <td>38</td> <td>38</td> <td>38</td> <td>45</td> </tr> </tbody> </table> <p>Noise limits are specified for selected receivers, with the aim of these receivers being sufficiently representative to ensure that levels predicted in Table 9 of the NIA are not exceeded.</p>	Location	Day	Evening	Night		L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A1} (1 minute)	4 Standing	39	39	39	45	6 Bennett	40	40	40	45	9 Burgess	36	36	36	45	27 McInerney	40	40	40	45	83 Westcott	38	38	38	45	110 Hall	38	38	38	45	Section 3.3
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83 Westcott	38	38	38	45																																						
110 Hall	38	38	38	45																																						
L6.2	Noise limits	<p>For the purpose of Condition 6.1:</p> <ul style="list-style-type: none"> • 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; • Evening is defined as the period from 6 pm to 10 pm; and • 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 2.0																																							

Condition Number	Condition Title	Condition Detail	Section of Plan
L6.3	Noise monitoring	<p>Noise from the premises is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise level limits in Condition L6.1 unless otherwise stated.</p> <p>Noise from the premises is to be measured at 1m from the dwelling façade to determine compliance with the $L_{A1(1 \text{ minute})}$ noise level in L6.1.</p> <p>Where it can be demonstrated that direct measurement of noise from the premises is impractical, the DECC may accept alternative means of determining compliance. See Chapter 11 of the NSW Industrial Noise Policy.</p> <p>The modification factors presented in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.</p>	Section 6.0
L6.4	Noise limits	<p>The noise emission limits identified in condition L6.1 apply under all meteorological conditions of:</p> <ol style="list-style-type: none"> Wind speed up to 3m/s at 10 metres above ground level; or Temperature inversion conditions of up to 3°C/100m and wind speed up to 2m/s at 10 metres above the ground. 	Section 6.0
R4.1	Noise monitoring report	<p>The applicant must assess compliance with the noise limits specified in Condition L6.1 in accordance with the methods outlined in Condition L6.3 on a quarterly basis. A report containing these monitoring results must be submitted annually with the Annual Return as set out in Condition R1.</p>	Section 6.3

APPENDIX 2

Dispute Resolution and Land Acquisition Conditions

APPENDIX 2a - Mt Owen Development Consent Conditions Regarding Dispute Resolution and Land Acquisition

Consent/ Licence	Condition Number	Condition Detail
DA 14-1-2004	Schedule 5	<p>Notification of Landowners</p> <p>2. If the results of the air quality and/or noise monitoring required in schedule 4 identify that the air pollution and/or noise generated by the development is greater than any of the air quality and/or noise criteria in schedule 4, except where this is predicted in the EIS, then the Applicant shall notify the Director-General 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 air quality and/or noise criteria in schedule 4.</p> <p>Independent Review</p> <p>4. If a landowner considers the development to be exceeding the air quality and/or noise criteria in schedule 4, except where this is predicted in the EIS, then he/she may ask the Applicant in writing for an independent review of the air pollution and/or noise impacts of the development on his/her land. If the Director-General is satisfied that an independent review is warranted, the Applicant shall within 3 months of the Director-General advising that an independent review is warranted:</p> <ul style="list-style-type: none"> (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 Director-General, to conduct air quality and/or noise monitoring on the land, to determine whether the development is complying with the relevant air quality and/or noise criteria in schedule 4, and identify the source(s) and scale of any air quality and/or noise impact on the land, and the development's contribution to this impact; (c) give the Director-General and landowner a copy of the independent review. <p>5. If the independent review determines that the development is complying with the relevant air quality and/or noise criteria in schedule 4, then the Applicant may discontinue the independent review with the approval of the Director-General.</p> <p>6. If the independent review determines that the development is not complying with the relevant air quality and/or noise criteria in schedule 4, and that the development is primarily responsible for this non-compliance, then the Applicant shall:</p> <ul style="list-style-type: none"> (a) take all practicable measures, in consultation with the landowner, to ensure that the development complies with the relevant air quality and/or noise criteria; and (b) conduct further air quality and/or noise monitoring to determine whether these measures ensure compliance; or (c) secure a written agreement with the landowner to allow exceedances of the air quality and/or noise criteria in schedule 4, to the satisfaction of the Director-General. If the additional monitoring referred to above subsequently determines that the development is complying with the relevant air quality and/or noise criteria in schedule 4, then the Applicant may discontinue the independent review with the approval of the Director-General. <p>If the measures referred to in (a) do not achieve compliance with the air quality and/or noise land acquisition criteria in schedule 4, and the Applicant cannot secure a written agreement with the landowner to allow these exceedances</p>

Consent/ Licence	Condition Number	Condition Detail
		<p>within 3 months, then the Applicant shall, upon receiving a written request from the landowner, acquire the landowner's land in accordance with the procedures in conditions 10-12 below.</p> <p>7. If the independent review determines that the relevant air quality and/or noise criteria in schedule 4 are being exceeded, but that more than one mine is responsible for this non-compliance, then the Applicant shall:</p> <ol style="list-style-type: none"> (a) take all practicable measures with the relevant mine/s, in consultation with the landowner, to ensure that the relevant air quality and/or noise criteria are complied with; and (b) conduct further air quality and/or noise monitoring to determine whether these measures ensure compliance; or (c) secure a written agreement with the landowner to allow exceedances of the air quality and/or noise criteria in schedule 4, to the satisfaction of the Director-General. <p>8. If the independent review determines that the relevant air quality and/or noise land acquisition criteria in schedule 4 are being exceeded at the residence and/or on the landowner's land, and that more than one mine is responsible for this non-compliance, and the Applicant cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then upon receiving a written request from the landowner, the Applicant shall acquire all or part of the landowner's land on as equitable a basis as possible with the relevant mine/s in accordance with the procedures in conditions 10-12 below.</p> <p>If the Applicant is unable to finalise an agreement with the landowner and/or other mine/s, then the Applicant or landowner may refer the matter to the Director-General for resolution. If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process. If, following the Independent Dispute Resolution Process, the Director-General decides that the Applicant shall acquire all or part of the landowner's land, then the Applicant shall acquire this land in accordance with the procedures in conditions 10-12 below.</p> <p>9. If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the Director-General for resolution. If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process.</p> <p>Land Acquisition</p> <p>10. Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant shall make a binding written offer to the landowner based on:</p> <ol style="list-style-type: none"> (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 DA, having regard to the: <ul style="list-style-type: none"> • 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 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

Consent/ Licence	Condition Number	Condition Detail
		<p>that date, but excluding any improvements that have resulted from the implementation of condition 4 of schedule 4;</p> <p>(b) the reasonable costs associated with:</p> <ul style="list-style-type: none"> • relocating within the Singleton local government area, or to any other local government area determined by the Director-General; • obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and <p>(c) reasonable compensation for any disturbance caused by the land acquisition process.</p> <p>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 Director-General for resolution.</p> <p>Upon receiving such a request, the Director-General shall request the President 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. If either party disputes the independent valuer's determination, then the independent valuer should refer the matter back to the Director-General.</p> <p>Upon receiving such a referral, the Director-General shall appoint a panel comprising the:</p> <p>(i) appointed independent valuer;</p> <p>(ii) Director-General and/or nominee/s; and</p> <p>(iii) President of the Law Society of NSW or nominee,</p> <p>to consider submissions from both parties, including meeting with the parties individually if requested, and to determine a fair and reasonable acquisition price for the land, and/or the terms upon which the land is to be acquired.</p> <p>Within 14 days of receiving the panel's determination, the Applicant shall make a written offer to purchase the land at a price not less than the panel's determination.</p> <p>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 Director-General.</p> <p>11. The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer, panel, or the Director-General and the costs of determination referred above.</p> <p>12. If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision, and registration of the plan at the Office of the Registrar-General.</p>

Consent/ Licence	Condition Number	Condition Detail
DA 14-1-2004	Appendix 2	<div style="text-align: center;"> <p>Independent Dispute Resolution Process (Indicative only)</p> <pre> graph TD A[Matter referred to Independent Dispute Facilitator appointed by DIPNR in consultation with Council] --> B[Independent Facilitator meets with parties concerned to discuss dispute] B --> C[Dispute resolved] B --> D[Dispute not resolved] C --> H[Agreed Outcome] D --> E[Facilitator consults relevant independent experts for advice on technical issues] E --> F[Facilitator meets with relevant parties and experts] F --> G[Dispute resolved] F --> I[Dispute not resolved] G --> H I --> J[Facilitator consults DIPNR and final decision made] J --> H </pre> </div>

**APPENDIX 2b – Ravensworth East Development Consent Conditions Regarding
Dispute Resolution and Land Acquisition**

Consent/ Licence	Condition Number	Condition Detail
DA 52-03-99	Schedule 5	<p>Notification of Landowners</p> <p>1. If the results of the air quality and/or noise monitoring required in schedule 4 identify that the air pollution and/or noise generated by the development is greater than any of the air quality and/or noise criteria in schedule 4, except where this is predicted in the EIS, then the Applicant shall notify the Director-General 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 air quality and/or noise criteria in schedule 4.</p> <p>Independent Review</p> <p>3. If a landowner considers the development to be exceeding the air quality and/or noise criteria in schedule 4, except where this is predicted in the EIS, then he/she may ask the Applicant in writing for an independent review of the air pollution and/or noise impacts of the development on his/her land. If the Director-General is satisfied that an independent review is warranted, the Applicant shall within 3 months of the Director-General advising that an independent review is warranted:</p> <ul style="list-style-type: none"> (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 Director-General, to conduct air quality and/or noise monitoring on the land, to determine whether the development is complying with the relevant air quality and/or noise criteria in schedule 4, and identify the source(s) and scale of any air quality and/or noise impact on the land, and the development's contribution to this impact; (c) give the Director-General and landowner a copy of the independent review. <p>4. If the independent review determines that the development is complying with the relevant air quality and/or noise criteria in schedule 4, then the Applicant may discontinue the independent review with the approval of the Director-General.</p> <p>5. If the independent review determines that the development is not complying with the relevant air quality and/or noise criteria in schedule 4, and that the development is primarily responsible for this non-compliance, then the Applicant shall:</p> <ul style="list-style-type: none"> (a) take all practicable measures, in consultation with the landowner, to ensure that the development complies with the relevant air quality and/or noise criteria; and (b) conduct further air quality and/or noise monitoring to determine whether these measures ensure compliance; or (c) secure a written agreement with the landowner to allow exceedances of the air quality and/or noise criteria in schedule 4, to the satisfaction of the Director-General. If the additional monitoring referred to above subsequently determines that the development is complying with the relevant air quality and/or noise criteria in schedule 4, then the Applicant may discontinue the independent review with the approval of the Director-General. <p>If the measures referred to in (a) do not achieve compliance with the air quality and/or noise land acquisition criteria in schedule 4, and the Applicant cannot secure a written agreement with the landowner to allow these exceedances within</p>

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		<p>3 months, then the Applicant shall, upon receiving a written request from the landowner, acquire the landowner's land in accordance with the procedures in conditions 10-12 below.</p> <p>6. If the independent review determines that the relevant air quality and/or noise criteria in schedule 4 are being exceeded, but that more than one mine is responsible for this non-compliance, then the Applicant shall:</p> <p>(a) take all practicable measures with the relevant mine/s, in consultation with the landowner, to ensure that the relevant air quality and/or noise criteria are complied with; and</p> <p>(b) conduct further air quality and/or noise monitoring to determine whether these measures ensure compliance; or</p> <p>(c) secure a written agreement with the landowner to allow exceedances of the air quality and/or noise criteria in schedule 4, to the satisfaction of the Director-General.</p> <p>7. If the independent review determines that the relevant air quality and/or noise land acquisition criteria in schedule 4 are being exceeded at the residence and/or on the landowner's land, and that more than one mine is responsible for this non-compliance, and the Applicant cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then upon receiving a written request from the landowner, the Applicant shall acquire all or part of the landowner's land on as equitable a basis as possible with the relevant mine/s in accordance with the procedures in conditions 10-12 below.</p> <p>If the Applicant is unable to finalise an agreement with the landowner and/or other mine/s, then the Applicant or landowner may refer the matter to the Director-General for resolution. If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process. If, following the Independent Dispute Resolution Process, the Director-General decides that the Applicant shall acquire all or part of the landowner's land, then the Applicant shall acquire this land in accordance with the procedures in conditions 10-12 below.</p> <p>8. If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the Director-General for resolution. If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process.</p> <p>Land Acquisition</p> <p>9. Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant shall make a binding written offer to the landowner based on:</p> <p>(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 DA, having regard to the:</p> <ul style="list-style-type: none"> • 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 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

Consent/ Licence	Condition Number	Condition Detail
		<p>implementation of condition 4 of schedule 4;</p> <p>(b) the reasonable costs associated with:</p> <ul style="list-style-type: none"> • relocating within the Singleton local government area, or to any other local government area determined by the Director-General; • obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and <p>(c) reasonable compensation for any disturbance caused by the land acquisition process.</p> <p>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 Director-General for resolution.</p> <p>Upon receiving such a request, the Director-General shall request the President 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. If either party disputes the independent valuer's determination, then the independent valuer should refer the matter back to the Director-General.</p> <p>Upon receiving such a referral, the Director-General shall appoint a panel comprising the:</p> <p>(i) appointed independent valuer;</p> <p>(ii) Director-General and/or nominee/s; and</p> <p>(iii) President of the Law Society of NSW or nominee,</p> <p>to consider submissions from both parties, including meeting with the parties individually if requested, and to determine a fair and reasonable acquisition price for the land, and/or the terms upon which the land is to be acquired.</p> <p>Within 14 days of receiving the panel's determination, the Applicant shall make a written offer to purchase the land at a price not less than the panel's determination.</p> <p>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 Director-General.</p> <p>10. The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer, panel, or the Director-General and the costs of determination referred above.</p> <p>11. If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision, and registration of the plan at the Office of the Registrar-General.</p>

Consent/ Licence	Condition Number	Condition Detail
DA 52-02-99	Appendix 2	<div style="text-align: center;"> <p>Independent Dispute Resolution Process (Indicative only)</p> <pre> graph TD A[Matter referred to Independent Dispute Facilitator appointed by DIPNR in consultation with Council] --> B[Independent Facilitator meets with parties concerned to discuss dispute] B --> C[Dispute resolved] B --> D[Dispute not resolved] C --> H[Agreed Outcome] D --> E[Facilitator consults relevant independent experts for advice on technical issues] E --> F[Facilitator meets with relevant parties and experts] F --> G[Dispute resolved] F --> I[Dispute not resolved] G --> H I --> J[Facilitator consults DIPNR and final decision made] J --> H </pre> </div>

Appendix 2c – Glendell Development Consent Regarding Dispute Resolution and Land Acquisition

Consent/ Licence	Condition Number	Condition Detail
DA 80-952	Schedule 4	<p>NOTIFICATION OF LANDOWNERS</p> <p>1. By the end of April 2008, the Applicant shall 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.</p> <p>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, and except where a negotiated agreement has been entered into in relation to that impact, then the Applicant shall notify the Director-General 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.</p> <p>3. The Applicant shall develop a brochure to advise landowners and/or existing or future tenants (including tenants of mine owned properties) of the possible health and amenity impacts associated with exposure to particulate matter, to the satisfaction of the Director-General. The brochure shall be prepared in consultation with NSW Health, and be submitted to the Director-General within 6 months of the date of this consent.</p> <p>The Applicant shall review relevant human health studies and update this brochure every 3 years, to the satisfaction of the Director-General.</p> <p>The Applicant shall provide this brochure (and associated updates) to all landowners and/or existing or future tenants (including tenants of mine owned properties) of properties where:</p> <p>(a) the predictions in the EA identify that the dust emissions generated by the development are likely to be greater than the air quality land acquisition criteria in condition 21 of schedule 3; and</p> <p>(b) monitoring results identify that the mine is exceeding the air quality land acquisition criteria in condition 21 of schedule 3.</p> <p>INDEPENDENT REVIEW</p> <p>4. If a landowner considers the development to be exceeding the impact assessment criteria in schedule 3, then he/she may ask the Director-General in writing for an independent review of the impacts of the development on his/her land.</p> <p>If the Director-General is satisfied that an independent review is warranted, the Applicant shall within 2 months of the Director-General's decision:</p> <p>(a) consult with the landowner to determine his/her concerns;</p> <p>(b) commission a suitably qualified, experienced and independent person, whose appointment has been approved</p>

		<p>by the Director-General, to conduct monitoring on the land, to:</p> <ul style="list-style-type: none"> • 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 <p>(c) give the Director-General and landowner a copy of the independent review.</p> <p>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 Director-General.</p> <p>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 shall:</p> <p>(a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the development complies with the relevant criteria; and</p> <p>(b) conduct further monitoring to determine whether these measures ensure compliance.</p> <p>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 Director-General.</p> <p>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 shall, together with the relevant mine/s:</p> <p>(a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the relevant criteria are complied with; and</p> <p>(b) conduct further monitoring to determine whether these measures ensure compliance; or</p> <p>(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 Director-General.</p> <p>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 Director-General.</p> <p>8. If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the Director-General for resolution.</p> <p>If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process.</p>
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