

MANGOOLA OPEN CUT

GLENCORE



Air Quality Management Plan

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1. Introduction

1.1 Overview of Approved Operations

Mangoola Coal Operations Pty Limited (Mangoola) operates an open cut coal mine located near Wybong, approximately 20 kilometres west of Muswellbrook and approximately 10 kilometres north of Denman in the Muswellbrook Local Government Area (refer to **Figure 1**). Mangoola has operated Mangoola Coal Mine under Project Approval (PA) 06_0014 since mining commenced at the site in September 2010.

In April 2021, Mangoola was granted Development Consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for State Significant Development (SSD) 8642 by the NSW Independent Planning Commission (IPC) for continued operations at the Mangoola Coal Mine. SSD 8642 enables the continuation of mining at Mangoola Coal Mine at up to 13.5 million tonnes per annum (Mtpa) of Run of Mine (ROM) coal through to 2030. The Project Boundary for Mangoola Coal Mine is presented in **Figure 1**.

In accordance with SSD 8642, operations permitted to be undertaken at Mangoola Coal Mine generally comprise:

- Open cut mining at up to 13.5 Mtpa ROM coal using truck and excavator mining methods through to 2030.
- Continued operations within the existing Mangoola Coal Mine including the use of existing infrastructure facilities.
- Mining operations in a new mining area located north of the existing Mangoola Coal Mine, Wybong Road, south of Ridgeland Road and east of the 500 kilovolt (kV) Electricity Transmission Line (ETL).
- Construction of a haul road overpass over Big Flat Creek and Wybong Road.
- During the construction of the Wybong Road/Big Flat Creek Overpass it is proposed to provide a temporary bypass of Wybong Road.
- Establishment of an out-of-pit overburden emplacement area.
- Realignment of a portion of Wybong Post Office Road or equivalent financial contribution to Council.

Mining operations, coal handling and washing, rail load out and all associated activities operate on a 24 hours per day, seven days per week basis with the exception of the mobile gravel crushing plant which is restricted to 7am to 6pm Monday to Friday and 8am to 1pm on Saturdays with no operations on public holidays or Sundays. Blasting is typically undertaken between the hours of 9am and 5pm Monday to Saturday. No blasting is undertaken on Sundays or public holidays.

A detailed description of the approved operations at Mangoola Coal Mine, is provided in Chapter 3 of the *Mangoola Coal Continued Operations (MCCO) Project Environmental Impact Statement* (EIS) (Umwelt 2019). An overview of the air quality assessment findings can be found in Chapter 6.5 of the EIS.

Figure 2 illustrates the key features of the Mangoola operation as approved by SSD 8642.

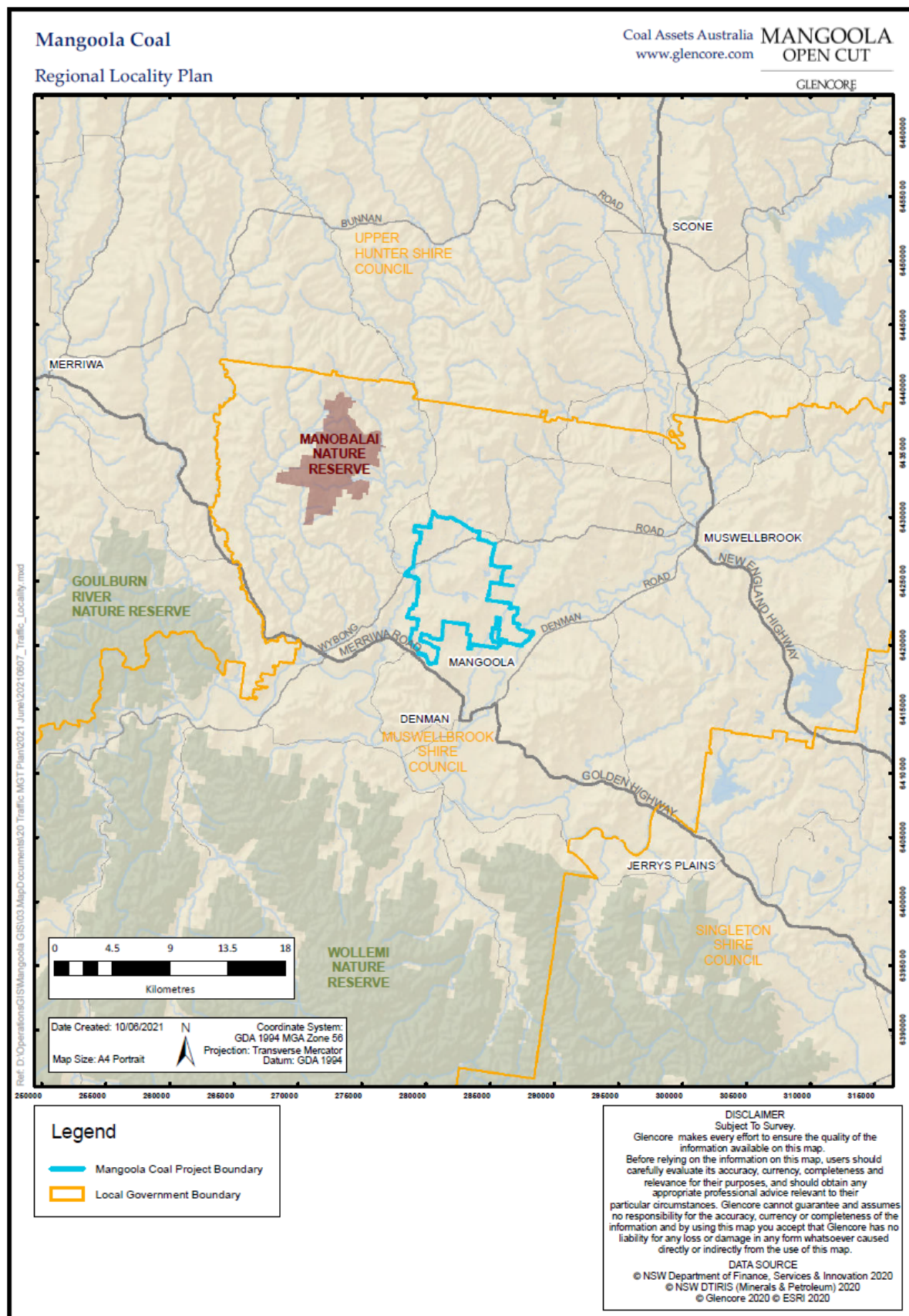


Figure 1 Regional Context

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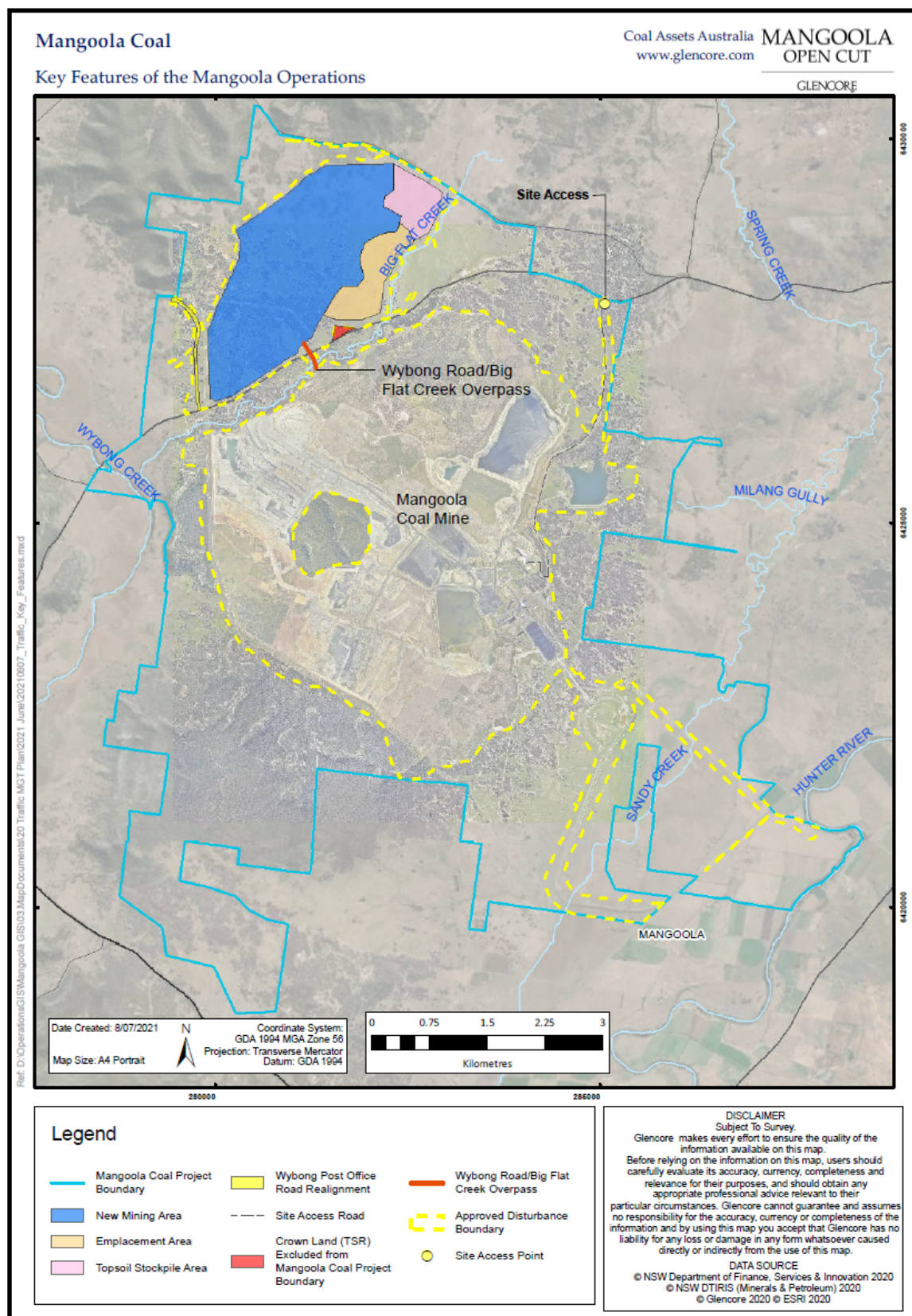


Figure 2 Key Features of the Mangoola Operation

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1.2 Purpose and Scope

As stated in **Section 1.1**, Mangoola was issued Development Consent for SSD 8642 on 26 April 2021. Condition A24(a) of SSD 8642 provides that, with approval from the Planning Secretary, Mangoola may prepare any strategy, plan or program required by SSD 8642 on a staged basis if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy plan or program. In addition, A24(c) of SSD 8642 provides that any strategy required by SSD 8642 may be combined with that strategy required under PA 06_0014.

Furthermore, in accordance with Condition A25 of SSD 8642, management plans requiring minor administrative amendments may be completed without consultation being undertaken with all parties required to be consulted in the relevant condition.

In this regard, Mangoola sought, and was granted approval, from a delegate of the Planning Secretary for the approach to consultation and the staged development of the Air Quality and Greenhouse Gas Management Plan (AQGGMP) required in accordance with SSD 8642 (see **Appendix A**) and outlined in **Table 1-1**.

In summary, this AQMP has been subjected to minor administrative updates to include approved activities and commitments linked to the commencement of development and construction of SSD 8642. This AQMP will be consolidated into the AQGGMP to be prepared to address SSD 8642 Condition B31 which is required to be approved by the Planning Secretary prior to the commencement of mining operations north of Wybong Road.

Further detail regarding the staged approach is discussed in **Section 2**.

Table 1-1 Staged Approach to Air Quality Management Plan Revision

| Management Plan | Approach Prior to Commencement of Construction under SSD 8642 | Approach Prior to Mining North of Wybong Road |
|--|--|--|
| Air Quality Management Plan/ Air Quality and Greenhouse Gas Management Plan | Minor administrative updates to the existing AQMP – This Document | Development of an Air Quality and Greenhouse Gas Management Plan to address requirements of SSD 8642 Condition B31 |
| | No consultation associated with minor administrative update* | Consultation in accordance with Condition B31(b) of SSD 8642 |

*As agreed with the Planning Secretary (see **Appendix A**).

1.3 Objectives

The objectives of the AQMP include the following:

- establish and maintain an air quality monitoring system to assess the air quality impact on surrounding sensitive receivers and performance of Mangoola Open Cut against the specific air quality impact assessment criteria (refer to **Section 4**);
- implement best practice management to minimise the off-site odour, fume and dust emissions of the project (refer to **Section 3.1** to **3.5**);
- implement predictive meteorological forecasting and real-time air quality monitoring to guide the day to day planning of mining operations (refer to **Section 3.2**);

- minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (refer to *Section 3.2*);
- minimise any visible off-site air pollution (refer to *Section 3*);
- minimise the surface disturbance of the site, as far as practicable, generated by the project (refer to *Section 3.2*); and
- manage air quality related community complaints in a timely and effective manner (refer to *Section 5.2*).

1.4 Regulatory Requirements

1.4.1 Project Approval & Development Consent

PA 06_0014 for Mangoola Open Cut was granted by the Minister for Planning and Infrastructure under the EP&A Act on 7 June 2007. Eight modifications to PA 06_0014 have since been granted. The requirement for this AQMP arises from Schedule 3, Condition 27 23 of PA 06_0014. This AQMP was originally approved by the Department of Planning Industry and Environment (DPIE) in January 2008. A detailed list of PA 06_0014 conditions and where they are addressed in this document is included in *Appendix B*.

As required by Condition A15 of SSD 8642, PA 06_0014 will be surrendered within 12 months of the date of commencement of development under SSD 8642, or other timeframe agreed by the Planning Secretary. In accordance with Condition A16, upon the commencement of development under SSD 8642, and before the surrender of PA 06_0014, conditions of SSD 8642 will prevail to the extent of any inconsistency.

1.4.2 Environment Protection Licence

Mangoola Open Cut was issued Environment Protection Licence (EPL) 12894 on 7 July 2008. A full list of the current EPL 12894 conditions relating to air quality monitoring and where they are addressed within this document are included in *Appendix B*.

1.5 Roles and Responsibilities

The roles and responsibilities of Mangoola Open Cut employees and contractors in relation to air quality management and monitoring are outlined in *Table 1-2*.

Table 1-2 Roles and Responsibilities

| Role | Responsibilities |
|-----------------------------------|--|
| Operations Manager | <ul style="list-style-type: none"> • providing that sufficient resources are allocated for the implementation of this AQMP. |
| Mine / CHPP / Maintenance Manager | <ul style="list-style-type: none"> • implementation of this plan via site procedures for mining operations to ensure compliance with project approval requirements; • implementation of air quality management controls as per this plan; and • inform personnel of air quality management obligations. |

| Role | Responsibilities |
|---|---|
| Environment and Community Manager (ECM) | <ul style="list-style-type: none"> • coordinate training to communicate requirements of this AQMP to relevant personnel; • provide resourcing and support to allow effective implementation of this AQMP; • coordinate, advise and assist with the implementation of air quality monitoring in accordance with the AQMP; • identify potential air quality impacts and implement actions to mitigate the identified risks; • notify regulatory authorities and affected landholders of any air quality related exceedance and undertake associated reporting; • ensure external reporting requirements associated with this plan are met; • coordinate incident investigation processes including associated reporting requirements and the implementation of corrective actions and evaluate their effectiveness; • coordinate complaints recording & investigation processes including associated reporting requirements; and • coordinate the implementation of corrective actions and evaluate their effectiveness associated with community complaints. • complete reporting requirements for Annual Review and Annual Return regarding air quality management; • update monitoring data on the Mangoola Open Cut website; • coordinate maintenance, replacement and repair of monitoring equipment as required in a regular and/or timely manner; • coordinate regular inspections to check air quality monitoring units are operating effectively to assess dust emissions; • effective maintenance of monitoring records on site; and • review air quality monitoring data against criteria as per the specified frequency of management plans. |
| All employees and contractors | <ul style="list-style-type: none"> • undertake all activities in accordance with this AQMP. |

1.6 Definitions

The terminology utilised within this AQMP is defined in **Table 1-3**.

Table 1-3 Terminology utilised within the AQMP

| Term | Definition |
|------------------------|--|
| BAM | Beta Attenuation Monitor |
| EMS | Environmental Management Strategy |
| Dust Deposition | Dust particles that settle out from the air - measured in grams per square metre per unit time (g/m ² /month) |
| HVAS | High Volume Air Sampler |

| Term | Definition |
|-----------------------------|--|
| Incident | A set of circumstances that causes or threatens to cause material harm to the environment and/or breaches or exceeds the limits of performance measures/criteria in PA 06_0014. SSD 8642 - An occurrence or set of circumstances that cause or threaten to cause material harm and which may or may not be or cause a non-compliance. |
| Mangoola mine owned | Land owned by Mangoola Open Cut |
| Other mine owned | Land owned by another mining company |
| PM₁₀ | Particulate matter less than 10 micrometers (µm) in size |
| PM_{2.5} | Particulate matter less than 2.5 micrometers (µm) in size |
| Project Approval | PA 06_0014 consolidated project approval |
| Residence | An occupied dwelling (criteria does not apply to unoccupied dwellings) |
| SSD 8642 | New Development Consent granted by NSW IPC for State Significant Development 8642 on 26 April 2021 |
| Privately-owned land | Land that is not owned by a public agency, or a mining company (or its subsidiary) |
| TSP | Total Suspended Particulates (µg/m ³). The nominal size of this fraction has particles with a diameter of up to 50 micrometers (µm) |
| TEOM | Tapered Element Oscillating Microbalance dust sampling unit |
| µg/m³ | Micrograms per cubic metre |
| UHAQMN | Upper Hunter Air Quality Monitoring Network |

2. Impact Assessment Criteria

2.1 Staged Implementation of Approval Conditions

Implementation of the AQMP will be staged to account for the transition from approved operations under PA 06_0014 (Stage 1) to SSD 8642 through the development and construction phase of the MCCO Project (Stage 2). The relevant stages are described together with applicable air quality criteria in **Table 2-1**. In accordance with A13(a) of SSD 8642 the Department will be notified at least two weeks prior to the commencement of development under SSD 8642.

The implementation relevant criteria for each stage is outlined in further detail in the following sections.

Table 2-1 Applicable criteria for staged implementation of AQMP

| Stage | Plan | Description | Applicable Air Quality Criteria |
|-------|-----------|---|--|
| 1 | This AQMP | Approved operations as per PA 06_0014 and prior to commencement of Development associated with SSD 8642 | Criteria as per PA 06_0014, Schedule 3 Condition 2 |
| 2 | This AQMP | Following the commencement of Development under SSD 8642 | Criteria as per SSD 8642 Condition B27 |
| 3 | AQGHGMP* | Prior to the commencement of mining north of Wybong Road under SSD 8642 | Criteria as per SSD 8642 Condition B27 |

*Staging of the AQGHGMP is discussed in **Section 1.2**.

2.2 Stage 1 – PA 06_0014

Schedule 3, Condition 19 of PA 06_0014 outlines the impact assessment criteria related to Mangoola Open Cut. The Project Approval conditions relating to impact assessment criteria for air quality are provided in **Appendix B**.

Criteria for dust concentration are referred to as long term (annual average) and short term (24 hour maximum) criteria. Relevant criteria for total suspended particulates (TSP) and particulate matter less than 10µm (PM₁₀) are outlined in **Table 2-2** and **Table 2-3** in relation to both project specific and cumulative criteria applied at a regional level. The TSP and PM₁₀ annual average criteria relate to the total dust in the air and not just the dust from Mangoola Open Cut operations.

Dust deposition levels refer to the quantity of dust particles which settle out of the air as measured in grams per square metre per month (g/m²/month) at a particular location. PA 06_0014 expresses dust deposition criteria in terms of an acceptable increase in dust deposition over the existing background deposition levels. For example, in residential areas with annual average dust deposition levels of between 0 and 2 g/m²/month, an increase of up to 2 g/m²/month would be permitted before it would be considered that a significant degradation of air quality had occurred. PA 06_0014 criteria for dust deposition are included in **Table 2-4**.

Table 2-2 Long term impact assessment criteria for particulate matter

| Pollutant | Averaging Period | ^d Criterion |
|--|------------------|-----------------------------------|
| Total Suspended Particulate (TSP) Matter | Annual | ^a 90 µg/m ³ |
| Particulate Matter < 10 µm (PM ₁₀) | Annual | ^a 30 µg/m ³ |

Table 2-3 Short term impact assessment criteria for particulate matter

| Pollutant | Averaging period | ^d Criterion |
|--|------------------|-----------------------------------|
| Particulate matter < 10 µm (PM ₁₀) | 24 hour | ^a 50 µg/m ³ |

Table 2-4 Long term impact assessment criteria for deposited dust

| Pollutant | Averaging Period | Maximum Increase in deposited dust level | Maximum total deposited dust level |
|-----------------------------|------------------|--|--|
| ^c Deposited Dust | Annual | ^b 2 g/m ² /month | ^a 4 g/m ² /month |

Notes to Tables 2.2 – 2.4:

- a* Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources);
- b* Incremental impact (i.e. incremental increase in concentrations due to the development on its own);
- c* Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and
- d* Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary.

There are no specific air quality criteria included in PA 06_0014 for particulate matter less than 2.5 µm (PM_{2.5}) for Mangoola Open Cut. However, in accordance with Schedule 3, Condition 23 of PA 06_0014, Mangoola Open Cut will continue to undertake PM_{2.5} particulate monitoring, in order to understand the project specific and cumulative air quality impacts of the operations.

2.3 Stage 2 – SSD 8642

The criteria described in Stage 1 will continue to apply to Mangoola Open Cut until the commencement of Development activities associated with SSD 8642. Following commencement of Development under SSD 8642 the air quality criteria outlined in Condition B27 of SSD 8642 will prevail and apply to all operations associated with Mangoola Open Cut including both existing mining operations south of Wybong Road and include construction activities associated with the establishment of the new mining area to the north of Wybong Road. The air quality criteria as outlined in Condition B27 of SSD 8642 are reproduced in **Table 2-5**.

Following commencement of Stage 2 PM_{2.5} particulate monitoring against the criteria listed in **Table 2-5** will be required.

Table 2-5 SSD 8642 Air quality criteria

| Pollutant | Averaging Period | Criterion |
|--|------------------|--------------------------------------|
| Particulate matter < 10 µm (PM ₁₀) | Annual | ^{a, c} 25 µg/m ³ |
| | 24 hour | ^b 50 µg/m ³ |
| Particulate matter < 2.5 µm (PM _{2.5}) | Annual | ^{a, c} 8 µg/m ³ |
| | 24 hour | ^b 25 µg/m ³ |
| Total suspended particulate (TSP) matter | Annual | ^{a, c} 90 µg/m ³ |

Notes:

a Total impacts (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).

b Incremental impact (i.e. incremental increase in concentrations due to the development on its own).

c Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary.

In accordance with SSD 8642 Condition B28 the air quality criteria in **Table 2-5** do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the air quality criteria, and the Applicant has advised the Department in writing of the terms of this agreement.

2.4 Land Acquisition Criteria

2.4.1 Stage 1

PA 06_0014 conditions relating to land acquisition for air quality impacts are provided in **Appendix B**. If the particulate matter emissions generated by the operation of Mangoola Open Cut exceed the land acquisition criteria, or contribute to the exceedances of the relevant cumulative criteria, in **Table 2-6** to

Table 2-8 at any residence on privately owned land, then upon receiving a written request for acquisition from the landowner, Mangoola will follow the land acquisition process outlined in Schedule 4, Condition 10 of PA 06_0014. **Section 4** of the AQMP explains how compliance with the land acquisition criteria is monitored.

Table 2-6 Long Term Land Acquisition Criteria for Particulate Matter

| Pollutant | Averaging Period | ^d Criterion |
|--|------------------|-----------------------------------|
| Total Suspended Particulate (TSP) Matter | Annual | ^a 90 µg/m ³ |
| Particulate Matter < 10 µm (PM ₁₀) | Annual | ^a 30 µg/m ³ |

Table 2-7 Short Term Land Acquisition Criteria for Particulate Matter

| Pollutant | Averaging period | ^{da} Criterion |
|--|------------------|------------------------------------|
| Particulate matter < 10 µm (PM ₁₀) | 24 hour | ^a 150 µg/m ³ |
| Particulate matter < 10 µm (PM ₁₀) | 24 hour | ^b 50 µg/m ³ |

Table 2-8 Short Term Land Acquisition Criteria for Particulate Matter

| Pollutant | Averaging Period | Maximum Increase in deposited dust level | Maximum total deposited dust level |
|-----------------------------|------------------|--|--|
| ^c Deposited Dust | Annual | ^b 2 g/m ² /month | ^a 4 g/m ² /month |

Notes to Tables 2.6 – 2.8:

- a* Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources);
- b* Incremental impact (i.e. incremental increase in concentrations due to the development on its own);
- c* Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method; and
- d* Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary.

2.4.2 Stage 2

Upon commencement of development under Stage 2 as outlined in **Table 2-1** the process for land acquisition in SSD 8642 will be initiated and the criteria in **Table 2-5** will apply. SSD 8642 Condition C1 provides that upon written request for acquisition from the owner of the privately-owned land listed in Table 10 the applicant may acquire the land in accordance with the procedures in SSD 8642 condition C12 to C19. One privately owned property (ID 83) is subject to acquisition upon request due to air quality as per Table 10 of Condition C1. This landowner is also entitled to air quality mitigation in accordance with SSD 8642 Conditions C2-C4 as appropriate.

In accordance with C5 (a)(i) of SSD 8642 letters were sent to the owners of privately owned land listed in C1 Table 10 of SSD 8642 on the 17 May 2021. Should a written request be received the process will be followed as per C12-C19 of SSD 8642.

2.5 Cumulative Emissions

The air quality impact assessment process included in the EIS involved assessments of cumulative dust emissions (TSP, PM₁₀ and PM_{2.5}) associated with the operations at Mangoola Open Cut, surrounding mining operations and other sources of dust generation within the surrounding area. With the nearest mines situated approximately 8 km from Mangoola Open Cut operations, the predicted contribution to cumulative impacts on surrounding properties was considered insignificant. Mangoola will continue to monitor and assess air quality data, including data from the Upper Hunter Air Quality Monitoring Network (UHAQMN), in conjunction with meteorological data to determine Mangoola Open Cut's contribution to recorded dust events. If a cumulative impact issue is identified, a process of investigation and mitigation will be undertaken as required.

3. Air Quality Management Controls

Air quality management controls and mitigation practices have been developed to minimise the impact of Mangoola Open Cut's operations on privately-and mine-owned residences. Specifically, these controls and practices aim to minimise the offsite impacts caused by wind-blown, traffic generated and blast dust. These controls and practices are detailed in **Section 3.1** to **Section 3.3**.

3.1 Design Controls

A number of air quality controls are incorporated into the design of the Mangoola Open Cut mine and infrastructure. The following mine design features were incorporated into the project design:

- overburden emplacement areas have been designed to minimise air quality impact on sensitive receivers to the east and south-east;
- all active roads will be clearly defined and the development of minor roads will be limited;
- unsealed minor roads used regularly for access will be constructed so as to minimise dust generation (for example, by using well-compacted select material);
- the CHPP, coal stockpiles and associated infrastructure is located near the eastern boundary of the proposed disturbance area, within the valley that forms the upper reach of Anvil Creek. This area provides natural topographic shielding which will reduce dust impacts in the surrounding area;
- enclosure of overland raw coal conveyors;
- enclosure of coal handling and preparation plant; and
- retention of buffer lands surrounding operations.

3.2 Operational Controls

Mangoola Open Cut implements a number of controls to minimise dust emissions which may be generated from trafficable areas, coal preparation and handling, pre-strip operations, blasting, drilling and stemming. As part of this system, Mangoola Open Cut will implement proactive and reactive controls to manage dust generation.

3.2.1 Proactive Controls:

A range of proactive measures are implemented by Mangoola Open Cut to manage dust emissions including:

- use of predictive meteorological forecasting to assist with mine planning when adverse meteorological conditions could give rise to dust emissions. This is sent via email as well as discussed in daily production meetings;
- the air quality model, developed during the Modification 6 environmental assessment for Stage 1 (PA 04_0014) and for the MCCO Project EIS Stage 2 (SSD 8642) will be referred to when setting early warning alarms or analysing data;
- use of water carts to suppress dust generation on unsealed surfaces including haul roads, minor unsealed roads, active extraction areas, dump tip heads, rehabilitation areas and drill pads. Chemical treatments / polymer suppressants may also be added to water carts in order to maintain surface moisture at a level that achieves 80 percent dust suppression along haul roads;
- enforcement of speed limits on all roads across the mine site in line with the site Transport Management Plan;
- only the minimum area necessary for mining operations will be disturbed at any time;
- rehabilitation of mining and overburden emplacement areas, and obsolete roads, will be undertaken according to the approved Mine Operations Plan (or equivalent) in order to minimise windblown dust potential;
- temporary revegetation of inactive mining areas, shaped dumps and topsoil stockpiles where there is the potential for excessive dust generation and no plan for use within six months;

- automatic sprays fitted to the dump hopper and coal crushing plant minimise dust from coal processing activities. Any issues of ineffective sprays are to be reported to maintenance for action. Hoppers cannot be operated without sprays unless it is monitored and control over dust emissions is maintained;
- blasting design and operation will be managed to assist with minimising dust generation in the blasting process. This process will include:
- consideration of material and explosives characteristics;
 - hole sizing and stemming material specification;
 - accurate placement and drilling of holes;
 - accurate explosives loading; and
 - correct stemming height of blast holes.
- mine personnel will be provided with training in dust controls for mine operations.
- minimise double handling of material;
- identify material types that contain fine and/or friable fractions;
- prepare work areas prior to commencement of mining activities to minimise dust generation potential, e.g. watering of extraction areas / tip heads where practicable;
- sheltered dumping during periods of high winds (mine planning to include alternative dumping options in mine plans);
- minimise the distance of fall of overburden materials during loading and tipping as far as practical;
- when the mobile gravel crusher is on site, consideration to the use of sprays and to prevailing wind conditions will be given when siting the mobile plant; and
- drill rigs will be fitted with dust control measures and will be regularly maintained for their effective use. If the dust suppressant measures fail, the drill can only continue to operate if it is monitored and work ceases immediately if dust goes above deck height. Whenever defects are detected which could cause further harm to the equipment, people or the environment, the drill is isolated and tagged 'Out of Service'.

3.2.2 Reactive Controls:

Mangoola will implement a range of reactive dust control measures in addition to proactive measures outlined in **Section 3.2.1**. These include:

- an alarm is sent to CHPP/Mining/Construction Supervisors when wind speeds reach >8m/s. This is a trigger for Supervisors to review the performance of current dust controls under high wind speeds and implement further controls where required;
- an automatic alarm system fitted to the Tapered Element Oscillating Microbalance (TEOM) monitors and e-samplers will inform CHPP/Mining Supervisors when real time dust monitoring indicates dust levels are approaching, or exceeding relevant criteria as defined in **Section 2**. This will trigger a review of current operations and enable appropriate operational response to further mitigate emissions as required;
- water sprays will be used at coal handling transfer points and on permanent raw and product coal stockpiles, with enhanced stockpile watering undertaken as required. Coal stockpile sprays will be activated if visual inspections identify that the moisture content of the coal is not sufficient to manage dust levels without additional application of water;
- modification of operations and other activities under adverse meteorological conditions as identified by field observations and/or the sites continuous meteorological monitoring stations. This includes restricting or ceasing uncontrolled dust-generating activities, targeted use of water carts, defining of trafficked areas and driving to the conditions (reduced vehicle speed limits);

- topsoil stripping and handling activities will cease during adverse meteorological conditions when dust controls are ineffective (e.g. use of water as suppressant); and
- development of a spontaneous combustion management strategy to monitor potential causes of spontaneous combustion events, and actions that can be implemented in the event of spontaneous combustion occurring (refer to *Section 3.5*); and

The potential air quality impact of specific activities such as drilling and stemming, coal handling and trafficable exposed areas will be managed in accordance with this AQMP and relevant operational procedures. The effectiveness of dust controls will continue to be evaluated throughout the life of the mine. Additional dust management controls, including new technologies, will be investigated and implemented where practicable (refer to *Section 3.4*).

3.2.3 Construction:

Air quality impacts during construction will largely result from dust generated during earthworks and other activities associated with the establishment of the construction of the haul road overpass over Big Flat Creek and Wybong Road and the construction of water management infrastructure.

The quantity of material handled during the construction phase will be much lower than the quantity handled during the operational phase of the MCCO Project. Subsequently the implementation of standard proactive (*Section 3.2.1*) and reactive operational controls (*Section 3.2.2*) will be applied to construction as appropriate.

3.3 Community Mitigation

Mangoola Open Cut will offer specific mitigation measures to members of the community in accordance with the Modification 6 Environmental Assessment commitment. This commitment was maintained in the MCCO Project EIS (Umwelt 2019) and will be further detailed in the AQGHGMP required to be approved prior to the commencement of mining north of Wybong Road (see *Section 2.1*). Mitigation measures have been advertised in the Mangoola Open Cut Community Newsletter and include:

- those private landowners living within a 4 km radius of the active mining area will be offered the following mitigation options upon request:
 - cleaning of solar power panels; and
 - cleaning of residential rainwater tanks once per year.
- private landowner living within a 4 – 6 km radius of active mining operations will be offered cleaning of residential rainwater tanks every two years, upon written request;
- private landowner living within a 6 km radius of the active mining area will be offered installation of a first flush system on residential rainwater tanks upon request.

3.3.1 Mine owned residences

Particulate matter emissions generated by Mangoola Coal Mine must not exceed the criteria listed in *Table 2-5* at any occupied residence on mine-owned land (including land owned by another mining company) unless conditions B29 of SSD 8642 are complied with.

All mine owned residences have had the following information provided to them as part of their general tenancy agreement and rental information:

- The tenants have been provided the NSW Government ‘Mine Dust and You’ fact sheet;
- Advice on how to access air quality monitoring results through the company website; and

- Have been advised of their ability to terminate the tenancy agreement without penalty at any time.

The monitoring data is also available in a format where advice can be sought from a medical practitioner to assist the tenant in making informed decisions on the health risks associated with occupying the property.

The rental information also includes the offer to provide hard copies of monitoring results for those tenants who do not have internet access.

3.3.2 Other mine owned residences

All other mine owned properties will be treated as sensitive receptors in line with requirements for private properties. In accordance with B29 of SSD 8642 particulate matter emissions generated by Mangoola Coal Mine must not exceed the criteria listed in **Table 2-5** at any occupied residence on mine-owned land (including land owned by another mining company) until the residence is aware of the rights they would have under the development consent.

3.4 Continuous Improvement

The basis for continuous improvement of air quality mitigation measures will be through the ongoing monitoring of dust impacts and corrective/preventative actions. Any new mitigation measures that are implemented as a result of these investigations will be reported in the Annual Review. Glencore Coal Assets Australia will also maintain awareness of new technologies for air quality mitigation through participation in relevant industry groups.

3.5 Off-site Odours, Blast Emissions and Spontaneous Combustion

In accordance with Schedule 3, Condition 22 of PA 06_0014, B26 and B27 of SSD 8642 and Section 129 of the POEO Act, Mangoola Open Cut is required to implement best practice air quality management, including all reasonable and feasible measures to minimise off-site odours, fume and dust emissions and spontaneous combustion from the site. Corrective actions for the abovementioned will be undertaken as necessary, in accordance with **Section 5.4**.

Mangoola Open Cut's Spontaneous Combustion Management Plan details the monitoring and control measures used by Mangoola Open Cut to reduce the incidence and impact of spontaneous combustion.

Blast fume is managed in accordance with Mangoola Open Cut's Blast Fume Management Procedure. This document outlines the monitoring and control measures for minimising blast fume potential and impact at Mangoola Open Cut.

Mangoola Open Cut's Blast Management Plan details the control measures used by Mangoola Open Cut to reduce the incidence and impact of blast related dust emissions from the operation.

3.6 Training

All Mangoola Open Cut personnel and contractors will undertake air quality awareness training as part of the Mangoola Open Cut general induction and additional toolbox talks where required to emphasise the importance of dust mitigation.

In accordance with Condition A31 of SSD 8642 all employees, contractors (and their sub-contractors) will be made aware of, and are instructed to comply with, the applicable conditions of SSD 8642 relevant to activities they carry out in respect of the development.

4. Air Quality Monitoring Methodology

4.1 Monitoring Standards

Air quality monitoring will be undertaken in accordance with the relevant Australian Standards and EPA approved methods for sampling including:

- EPA 'Approved methods for the sampling and analysis of air pollutants in NSW' (EPA 2007); The dust deposition gauges will be operated in accordance with AS/NZS 3580.10.1:2003 Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method.
- The dust deposition gauges will be operated in accordance with AS/NZS 3580.10.1:2003 Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method.
- The High Volume Air Sampler (HVAS) will be operated in accordance with AS/NZ 3580.9.3-2015 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - Total suspended particulate matter (TSP) - High volume sampler gravimetric method.
- The continuous monitoring network will be operated in accordance with AS 3580.9.8:2008 Methods for Sampling and Analysis of Ambient Air - Determination of Suspended Particulate Matter - PM₁₀ Continuous Direct Mass Method Using a Tapered Element Oscillating Microbalance Analyser).
- The weather stations will be maintained and operated in accordance with AS 3580.14:2014 Methods for sampling and analysis of ambient air – Meteorological monitoring for ambient air quality monitoring applications.

4.2 Air Quality Monitoring Program

The Mangoola Open Cut air quality monitoring program includes a combination of dust deposition gauges, high volume air samplers (TSP and PM₁₀), real-time continuous dust monitoring devices (PM₁₀ and PM_{2.5}) and meteorological stations. All monitoring locations are shown on **Figure 3** and summarised in **Table 4-1** to **Table 4-4**. These tables differentiate the compliance monitors representing private receptors, mine owned receptors, other mine owned receptors and complementary monitors.

In accordance with Schedule 3, Condition 23 of PA 06_0014, the air quality monitoring network must suitably represent air quality conditions at surrounding privately owned, mine owned and other mine owned land. Particulate emissions measured on mine owned and other mine owned land must be compliant with PA 06_0014 criteria limits established for privately owned land.

The real-time TEOM data, including from the Upper Hunter Air Quality Monitoring Network, will be used to compliment HVAS data and will assist by means of the following:

- provide an understanding of regional episodic dust events;
- provide an understanding of local episodic dust events; and
- provide an understanding of potential dust episodes resulting from mining activities.

- The real-time TEOM and E-samplers will be used to alert Mangoola Open Cut personnel so that the operation can be adjusted accordingly (refer to **Section 3**).

To account for commencement of development and air quality criteria contained within SSD 8642 advice regarding an amendment to the air quality network was provided by Todoroski Air Sciences. This advice has recommended a series of amendments to the air quality monitoring network to facilitate the commencement of development, and to monitor compliance against criteria contained in SSD 8642 at representative locations (Stage 2). A summary of the revised air quality monitoring network is included in **Table 4-1** while the existing and amended monitoring network is presented on **Figure 3**.

Following approval of this AQMP, EPL variation and the commencement of development of SSD 8642 the amendments to the network as described below will be implemented over a period of approximately three months. Where monitors are being located this may result in a short period of data loss (24-48 hrs) to accommodate the transition to the new location.

Table 4-1 Amendments to the air quality monitoring network

| Current Site Name | Description of Change | Revised Site Name |
|---------------------------------------|--|-------------------|
| WSN | Will be decommissioned and the infrastructure relocated to the west of the mining area north of Wybong Road | WSN1 |
| D7-DC | Will be decommissioned and the infrastructure relocated to the north-west of the current location | D9-DC |
| D05-PM10 | Will be decommissioned and the infrastructure relocated to the north of the Project Boundary to be reflective of the nearest private receivers located on Ridgeland's Road | D08-PM10 |
| D07-PM10 | Will be decommissioned and the infrastructure relocated adjacent to the revised location of WSN1 | D09-PM10 |
| DG09 | Remove and replace with DG25 already installed | DG25 |
| DG04 | Remove and replace with DG23 already installed | DG23 |
| DG20 | Remove and replace with DG24 already installed | DG24 |
| DG15 | Remove and replace with new site | DG26 |
| DG19 | Remove and replace with new site located adjacent to the relocated position of D08-PM10 | DG27 |
| DG10 | Remove and replace with new site located on Hidden Valley Right of Way | DG28 |
| DG06; DG18, DG03, DG01, DG14 and DG13 | Depositional dust site to be decommissioned | N/A |
| D02-DC | A PM _{2.5} monitor will be installed at D02-DC to further enhance the coverage of the PM _{2.5} monitoring capabilities of the network | No Change |

Table 4-2 Compliance Monitoring Points – Private Receptors

| Monitoring Site | Type of Monitoring | Frequency* |
|--|--------------------------|------------|
| DG02, DG07, DG09, DG12, DG 16, DG17, DG23, DG24, DG25, DG26, DG27, DG28, | Depositional Dust Gauges | Monthly |
| D02-DC to D06-DC | TEOM: PM ₁₀ | Continuous |

| Monitoring Site | Type of Monitoring | Frequency* |
|----------------------|------------------------|--------------|
| D08-PM ₁₀ | HVAS: PM ₁₀ | Every 6 days |
| D02-TSP to D04-TSP | HVAS: TSP | Every 6 days |

* Units may not operate at this frequency 100% of the time due to maintenance and calibration requirements, power outages, prevention of access by landowner, no access due safety concerns of personnel and other external events outside the control of Mangoola Coal.

Table 4-3 Compliance Monitoring Points – Mine Owned and Other Mine Owned Receptors

| Monitoring Site | Type of Monitoring | Frequency* |
|---|------------------------|--------------|
| D02-DC to D06-DC | TEOM: PM ₁₀ | Continuous |
| D01-PM ₁₀ , D06-PM ₁₀ , D08-PM ₁₀ D09-PM ₁₀ | HVAS: PM ₁₀ | Every 6 days |

* Units may not operate at this frequency 100% of the time due to maintenance and calibration requirements, power outages, prevention of access by landowner, no access due safety concerns of personnel and other external events outside the control of Mangoola Coal.

Table 4-4 Other Monitoring

| Monitoring Site | Type of Monitoring | Frequency* | Purpose |
|---|-----------------------------|------------|---|
| DG11 | Depositional Dust Gauges | Monthly | Compliments compliance monitoring network for determination at mine owned and other mine owned. |
| D9-DC, D8-DC | E-sampler: PM ₁₀ | Continuous | EPL Points 19 and 20 – situated immediately to the north and south of mining operations respectively. Alarms will be established based on air quality modelling contours. |
| D04-PM _{2.5} , D06-PM _{2.5} | BAM: PM _{2.5} | Continuous | Schedule 3, Condition 23 of PA 06-0014. Support regional monitoring network. An additional PM _{2.5} monitor (BAM) be installed at D02-DC to further enhance the coverage of PM _{2.5} monitoring by the monitoring network. |
| WSN1 | Meteorological | Continuous | Schedule 3, Condition 24 of PA 06_0014. EPL Point 5 Meteorological Station (North). |
| WSS | Meteorological | Continuous | EPL Point 18 Meteorological Station (South). |

* Units may not operate at this frequency 100% of the time due to maintenance and calibration requirements, power outages, prevention of access by landowner, no access due safety concerns of personnel and other external events outside the control of Mangoola Coal.

Air quality monitoring locations will be reviewed and where necessary, modified over the life of operations according to progressive monitoring results, physical changes in mining operations, or following the acquisition of private property by Mangoola. Locations may also be reviewed where access to a private property is unavailable or a landowners written request to remove the gauge is received. These are unforeseeable over the life of the project.

The meteorological station (North) will be operated for the life of mining activities in accordance with Schedule 3, Condition 24 of the Project Approval. Both meteorological station (North) and meteorological station (South) will be operated in accordance with EPL 12894.

Both meteorological stations consist of instruments and a data-logging system attached to a 10 metre mast. Logged meteorological parameters include:

- wind speed at 10 metres above ground;
- wind direction at 10 metres above ground;
- sigma-theta from sampled wind direction measurements;
- temperature at 2 metres and 10 metres above ground;
- solar radiation; and
- rainfall.

4.3 Independent Review and Land Acquisition Process

In the event that a landowner considers that Mangoola Open Cut is exceeding air quality criteria at his or her property, the landowner may request an independent review of the air quality impacts at the property. The independent review will be conducted in accordance with the procedure described in Schedule 4 Condition 4 - 11 of the Project Approval and Conditions C9 to C11 of SSD 8642 (refer to *Appendix B*).

As noted in *Section 2.4.2* notifications in accordance with SSD 8642 have been made to the applicable landowners.

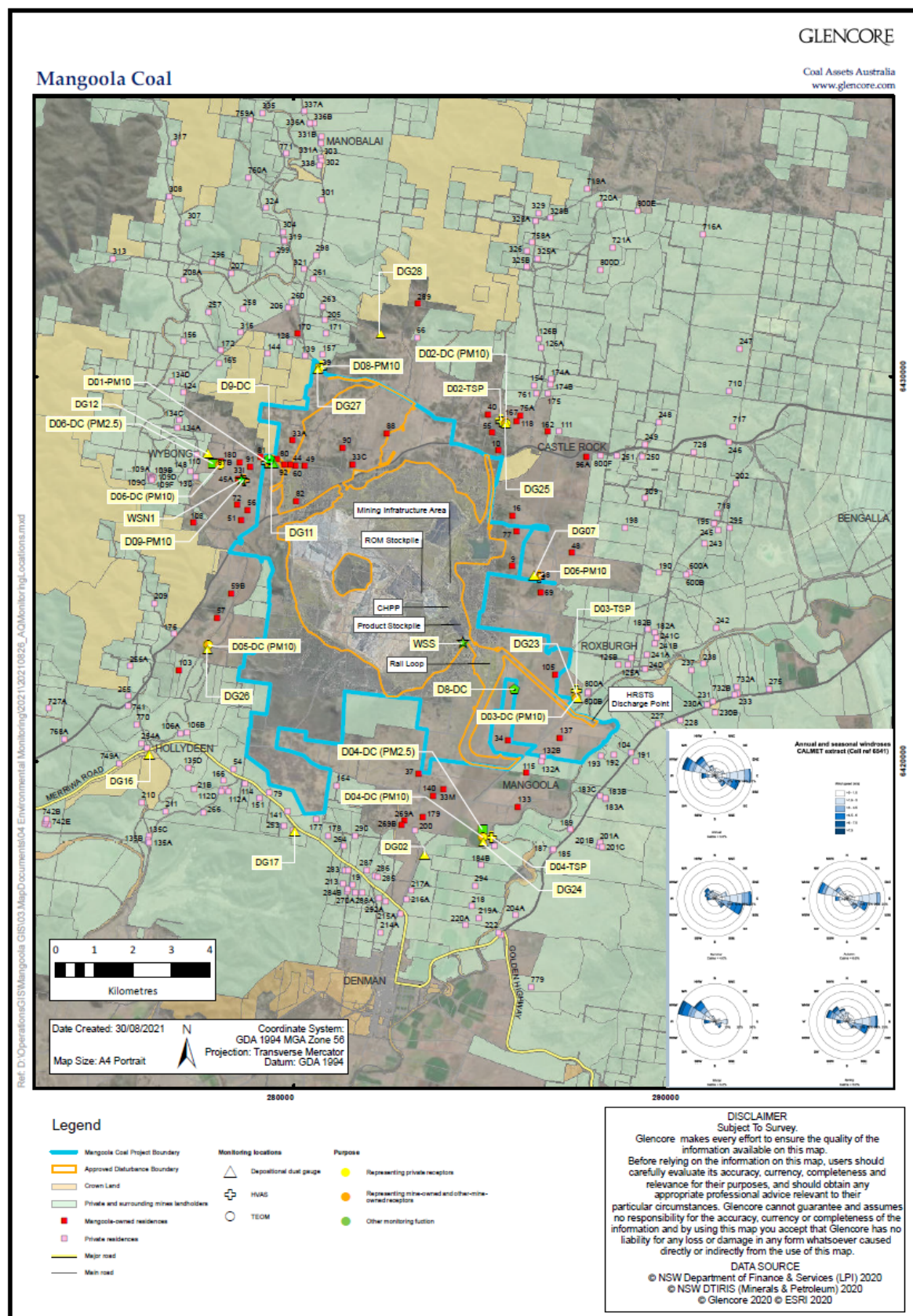


Figure 3 Compliance Monitoring

Number: MANOC-1276546935-5
Owner: [Owner (Office)]

Status: Draft
Version: 1

Effective: [Effective Date]
Review: [Planned Review Date]

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Uncontrolled unless viewed on the intranet

5. Reporting and Reviewing

5.1 Reporting

5.1.1 Stage 1

Reporting conditions for the Mangoola Open Cut AQMP relevant to Stage 1 are summarised in **Table 5-1**.

Table 5-1 Reporting Conditions (Stage 1)

| Condition | Requirement | Frequency |
|--|---|-----------|
| Project Approval Schedule 5 Condition 6 | <p>By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent must submit a report to the Department reviewing the environmental performance of the project to the satisfaction of the Secretary. This review must:</p> <ul style="list-style-type: none"> (a) describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the next year; (b) include a comprehensive review of monitoring results and complaints records of the project over the previous calendar year, which includes a comparison of these results against the: <ul style="list-style-type: none"> ☐ relevant statutory requirements, limits or performance measures/criteria; ☐ monitoring results of previous years; and ☐ relevant predictions in the documents listed in condition 2 of Schedule 2; (c) identify any non-compliance over the last year, and describe what actions were(or are being) taken to ensure compliance; (d) identify any trends in monitoring data over the life of the project; (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and (f) describe what measures will be implemented over the next year to improve the environmental performance of the project. | Annually |
| Project Approval Schedule 5 Condition 11 | A summary of air quality monitoring results to be made publicly available on the Mangoola Open Cut website. | Quarterly |
| Project Approval Schedule 5 Condition 11 | <p>The Proponent must:</p> <ul style="list-style-type: none"> (a) make the following information publicly available on its website: <ul style="list-style-type: none"> ☐ the documents listed in condition 2 of Schedule 2; ☐ current statutory approvals for the project; ☐ approved strategies, plans or programs required under the conditions of this approval; ☐ a comprehensive summary of the compliance monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval; ☐ a complaints register, which is to be updated on a monthly basis; ☐ minutes of CCC meetings; | Monthly |

| | | |
|-----------|--|----------|
| | <ul style="list-style-type: none"> ☐ the last five annual reviews; ☐ any independent environmental audit; and the Proponent's response to the recommendations in any audit; and <p>(b) keep this information up to date; to the satisfaction of the Secretary.</p> | |
| EPL R1 | A summary of air quality monitoring points results for the previous reporting period to be provided to the EPA within the Annual Return. | Annually |

5.1.2 Stage 2

Reporting conditions for the Mangoola Open Cut AQMP relevant to Stage 2 are summarised in **Table 5-2**.

Table 5-2 Reporting Conditions (Stage 2)

| Condition | Requirement | Frequency |
|---------------------------|---|-----------|
| SSD 8642 Condition D11 | <p>By the end of March each year after the commencement of development, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. This review must:</p> <ul style="list-style-type: none"> (a) describe the development (including any rehabilitation) that was carried out in the previous calendar, and the development that is proposed to be carried out over the current calendar year; (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the: <ul style="list-style-type: none"> (i) relevant statutory requirements, limits or performance measures/criteria; (ii) requirements of any plan or program required under this consent; (iii) monitoring results of previous years; and (iv) relevant predictions in the document/s listed in condition A2(c); (c) identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence; (d) evaluate and report on: <ul style="list-style-type: none"> (i) the effectiveness of the noise and air quality and greenhouse gas management systems; (ii) compliance with the performance measures, criteria and operating conditions of this consent; and (iii) the status of translocated plants and vegetation quadrat data from orchid monitoring sites; (e) identify any trends in the monitoring data over the life of the development; (f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies.; and (g) describe what measures will be implemented over the next calendar year to improve the environmental performance of the development. | Annually |

| Condition | Requirement | Frequency |
|------------------------------|---|-----------|
| SSD 8642 Condition D17(a) | Before the commencement of construction until the completion of all rehabilitation required under this consent, the Applicant must: | |
| | (a) make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this consent) publicly available on its website: | |
| | (iii) all approved strategies, plans and programs required under the conditions of this consent; | This AQMP |
| | (vi) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent; | Annually |
| | (vii) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; | Annually |
| SSD 8642 Condition D34(c) | The Applicant must: (c) Report on greenhouse gas monitoring and abatement measures in the Annual Review | Annually |
| EPL R1 | A summary of air quality monitoring points results for the previous reporting period to be provided to the EPA within the Annual Return. | Annually |

5.2 Community Complaints Response

Mangoola Open Cut will maintain a centralised location to record details of relevant external stakeholder communications. A Community Response Line (1800 014 339) will be in operation 24 hours per day, seven days a week and will be regularly advertised in a local newspaper. Complaints will be recorded and investigated. Follow up communication with the complainant will be undertaken to explain the outcome of complaint investigations where requested. A monthly summary of complaints will be uploaded to the website.

5.3 Exceedance Reporting

5.3.1 Stage 1

In accordance with Schedule 5, Condition 2 of PA 06_0014 (Refer to **Appendix B**), Mangoola Open Cut must assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures outlined in **Section 2**.

If air quality monitoring results identify an exceedance of the air quality impact assessment criteria on Privately-owned or other mine owned land then DPIE will be informed:

- verbally immediately to DPIE compliance officer; and
- in writing within seven days.

The written report in accordance with Schedule 5, Condition 4 of PA 06_0014 (refer to **Appendix B**) shall follow a detailed investigation of the exceedance and include the following:

- date, time and nature of the exceedance/incident;
- the cause (or likely cause) of the exceedance/incident;

- actions taken to date; and
- proposed measures to address the exceedance/incident and to prevent a re-occurrence.

As per Schedule 4, Condition 3 of PA 06_0014 (refer to **Appendix B**), in the event an exceedance of the air quality impact assessment criteria is identified at a Private residence or other mine owned land, Mangoola will notify any affected landowner and provide them with monitoring results in an appropriate format as per Schedule 3, Condition 21.

For tenants of mine owned land no additional exceedance reporting will occur as all information required for Schedule 3, Condition 21 and Schedule 4 Condition 3 is provided through the tenancy agreement and all monitoring data is available on the company website in an appropriate format.

Where land acquisition assessment criteria (**Section 2.2**) are exceeded and a landowner provides written request, Mangoola Open Cut will commence an independent review and the land acquisition process as outlined in **Section 4.3**.

In addition to reporting required by PA 06_0014, incidents resulting or having the potential to result in material harm to the environment (as defined by Section 147 of the POEO Act) shall be reported and may require initiation of the Pollution Incident Response Management Plan (PIRMP).

When an extraordinary event such as bushfires, prescribed burning, dust storms, fire incidents or any other activity, is suspected to be the cause of the exceedance of air quality criteria the DPIE will be contacted to confirm an extraordinary event has taken place and subsequent reporting required under Schedule 4, Condition 6 of PA 06_0014. This will also confirm any further reporting required under Schedule 4, Condition 3 of PA 06_0014.

5.3.2 Stage 2

In accordance with SSD 8642 Condition B27 (Refer to **Appendix B**), Mangoola Open Cut must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the developed do not cause exceedances of the criteria listed **Table 2-5** at any residence on privately owned land.

Particulate matter emissions generated by Mangoola Coal Mine must not exceed the criteria listed in **Table 2-5** at any occupied residence on mine-owned land (including land owned by another mining company) unless conditions B29 of SSD 8642 are complied with (see **Section 3.3.1**).

In the event of a non-compliance with conditions of SSD 8642 Mangoola will within seven days of becoming aware of a non-compliance will notify the Department of the non-compliance. The notification will be in writing through the Department's Major Projects Website and will identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it doesn't comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance. In accordance with SSD 8642 Condition D10 a non-compliance which has been notified as an incident does not need to be also notified as a non-compliance.

In accordance with SSD 8642 Condition C7, as soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any air quality criterion, the Applicant must provide the details of the exceedance to any affected landowners, tenants and the CCC. For any exceedance of any air quality criterion criteria listed in **Table 2-5**, Mangoola will also provide to any affected land owners and/or tenants a copy of the fact sheet entitled "Mine Dust and You" (NSW Health, 2017).

Where land acquisition assessment criteria are exceeded and a landowner provides written request, Mangoola Open Cut will commence an independent review and the land acquisition process as outlined in **Section 2.4.2**.

In addition to reporting required by SSD 8642, incidents resulting or having the potential to result in material harm to the environment (as defined by Section 147 of the POEO Act) shall be reported and may require initiation of the PIRMP.

When an extraordinary event such as bushfires, prescribed burning, dust storms, fire incidents or any other activity, is suspected to be the cause of the exceedance of air quality criteria the DPIE will be contacted to confirm an extraordinary event has taken place and subsequent exceedance reporting required under SSD 8642 is not required.

5.4 Corrective Action

5.4.1 Stage 1

Table 5-3 summarises the potential Stage 1 air quality related issues that may arise and the appropriate corrective action to be taken.

Table 5-3 Corrective Actions (Stage 1)

| Problem | Corrective Action |
|--|--|
| Exceedance of Project Approval air quality conditions at private and other mine-owned receptors. | <p>Report exceedance verbally immediately to DPIE compliance officer</p> <p>Investigation of exceedance, implementing reactive control measures where applicable.</p> <p>Provision of relevant monitoring data and notification of health risks associated with such exceedances to the affected resident as soon as practicable.</p> <p>Provide regular monitoring results until the results show that the operation is again complying with the relevant criteria.</p> <p>Report exceedance to DPIE in writing within seven days.</p> <p>Review this AQMP within 3 months of submission of incident as per Schedule 5, Condition 9 of PA 06_0014.</p> |
| Exceedance of Project Approval air quality conditions at tenanted Mangoola mine-owned receptors. | Investigation of exceedance, implementing reactive control measures. |
| Exceedance of Project Approval air quality land acquisition criteria. | <p>Report exceedance verbally immediately to DPIE compliance officer.</p> <p>Investigation of exceedance, implementing reactive control measures where applicable.</p> <p>Provision of relevant monitoring data and notification of health risks associated with such exceedances to the affected resident as soon as practicable.</p> <p>Provide regular monitoring results until the results show that the operation is again complying with the relevant criteria.</p> <p>Report exceedance to DPIE in writing within seven days.</p> <p>Review this AQMP within 3 months of submission of incident as per Schedule 5, Condition 9 of PA 06_0014.</p> <p>Initiation of land acquisition process detailed in Section 4.3.</p> |
| Emission of odour, fume, blast dust or spontaneous combustion from site. | <p>Report emission / incident verbally immediately to DPIE compliance officer and via the EPA Environment Line</p> <p>Investigation of emission / incident, implementing reactive control measures where applicable.</p> |

| Problem | Corrective Action |
|---|--|
| | <p>Provision of relevant monitoring data and notification of health risks associated with such exceedances to the affected resident as soon as practicable.</p> <p>Report exceedance to DPIE and EPA in writing within seven days.</p> <p>Review this AQMP within 3 months of submission of incident as per Schedule 5, Condition 9 of PA 06_0014.</p> |
| Community complaints. | <p>Upon receiving a complaint, Mangoola will contact the complainant to acknowledge receipt of the complaint and to discuss details of the complaint. Contact will be made in accordance with the timeframe requested by the complainant in the notification text/email.</p> <p>Investigation of complaint implementing reactive control measures where applicable.</p> <p>Assessment of impacts at the residence against air quality impact assessment criteria and land acquisition criteria, if required.</p> <p>Provide feedback to the complainant in agreed timeframe. Report complaint to senior management. Provide feedback to mine planning and production personnel, where relevant.</p> <p>Record and include in complaint reports published on the Mangoola Coal website.</p> |
| Landholder prevents access and has formally advised Mangoola that they no longer want monitoring to be conducted on their property. | <p>Report prevention of access verbally to DPIE compliance officer prior to next sampling event.</p> <p>Suitably qualified air specialist to provide technical review on air quality monitoring point and need for further monitoring or relocation.</p> <p>Based on the above technical review, submit a revised AQMP to DPIE for approval.</p> |

5.4.2 Stage 2

Table 5-4 summarises the potential Stage 2 air quality related issues that may arise and the appropriate corrective action to be taken.

Table 5-4 Corrective Actions (Stage 2)

| Problem | Corrective Action |
|---|---|
| Exceedance of SSD 8642 air quality conditions at any residence on privately-owned land (see <i>Section 2</i>). | <p>Investigation of exceedance, implementing reactive control measures where applicable.</p> <p>In the event of a non-compliance with conditions of SSD 8642 Mangoola will within seven days of becoming aware of a non-compliance will notify the Department of the non-compliance.</p> <p>As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any air quality criterion, the Applicant must provide the details of the exceedance to any affected landowners and the CCC.</p> <p>Provide to any affected land owners a copy of the fact sheet entitled "Mine Dust and You" (NSW Health, 2017).</p> <p>If deemed an incident, Mangoola will immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. Review this AQMP within 3 months of submission of incident as per SSD 8642 Condition D9.</p> |
| Exceedance of the applicable SSD 8642 air quality conditions at any occupied residence on mine-owned land (including land | <p>Investigation of exceedance, implementing reactive control measures where applicable.</p> <p>In the event of a non-compliance with conditions of SSD 8642 Mangoola will within seven days of becoming aware of a non-compliance will notify the Department of the non-compliance.</p> |

| Problem | Corrective Action |
|---|--|
| owned by another mining company). | <p>As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any air quality criterion, the Applicant must provide the details of the exceedance to any affected landowners, tenants and the CCC.</p> <p>Provide to any affected land owners and/or tenants a copy of the fact sheet entitled "Mine Dust and You" (NSW Health, 2017).</p> <p>Provision of applicable information as per SSD 8642 Condition B29.</p> <p>If deemed an incident, Mangoola will immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. Review this AQMP within 3 months of submission of incident as per SSD 8642 Condition D9.</p> |
| Emission of odour, fume, blast dust or spontaneous combustion from site. | <p>Report emission / incident verbally immediately to DPIE compliance officer and via the EPA Environment Line</p> <p>Investigation of emission / incident, implementing reactive control measures where applicable.</p> <p>Provision of relevant monitoring data and notification of health risks associated with such exceedances to the affected resident as soon as practicable.</p> <p>Report exceedance to DPIE and EPA in writing within seven days.</p> <p>If deemed an incident, review this AQMP within 3 months of submission of incident as per SSD 8642 Condition D9.</p> |
| Community complaints. | <p>Upon receiving a complaint, Mangoola will contact the complainant to acknowledge receipt of the complaint and to discuss details of the complaint. Contact will be made in accordance with the timeframe requested by the complainant in the notification text/email.</p> <p>Investigation of complaint implementing reactive control measures where applicable.</p> <p>Assessment of impacts at the residence against air quality impact assessment criteria and land acquisition criteria, if required.</p> <p>Provide feedback to the complainant in agreed timeframe. Report complaint to senior management. Provide feedback to mine planning and production personnel, where relevant.</p> <p>Record and include in complaint reports published on the Mangoola Coal website.</p> |
| Landholder prevents access and has formally advised Mangoola that they no longer want monitoring to be conducted on their property. | <p>Report prevention of access verbally to DPIE compliance officer prior to next sampling event.</p> <p>Suitably qualified air specialist to provide technical review on air quality monitoring point and need for further monitoring or relocation.</p> <p>Based on the above technical review, submit a revised AQMP to DPIE for approval.</p> |

5.5 Records

In accordance with Condition M1.2 of EPL 12894, monitoring records will be maintained on site for at least four years.

5.6 Access to Information

In accordance SSD 8642 Condition D17, before the commencement of construction until the completion of all rehabilitation required under the consent Mangoola will make this AQMP available on the Mangoola website.

5.7 Review

5.7.1 Stage 1

In accordance with Schedule 5, Condition 9 of PA 06_0014 Mangoola Open Cut will review and where necessary revise the AQMP within three months of the submission of an audit, Annual Review, an incident report, or any modification to the conditions of the Project Approval. The AQMP will further be subject to a 3 year periodic review. The review of the AQMP will reflect changes in environmental requirements, technology and operational procedures. In addition, the document review table is to be completed as part of each review (refer to **Section 5.8**).

5.7.2 Stage 2

As outlined in **Section 1.4** this AQMP will be consolidated into the AQGGMP to be prepared to address SSD 8642 Condition B31 which is required to be approved by the Planning Secretary prior to the commencement of mining operations north of Wybong Road (Stage 3). However in the interim period following commencement of Stage 2 this AQMP will be subject to periodic review as per Conditions D7 and D8 of SSD 8642. The suitability of this AQMP must be reviewed within three months of:

- The submission of an incident report;
- The submission of an Annual Review;
- The submission of an Independent Environmental Audit;
- The approval of any modification of the conditions of SSD 8642; or
- Notification of a change in development phase (as per Condition A13 of SSD 8642).

Review of the AQMP is also required to either improve the environmental performance of the development or comply with a direction as per Condition A3 of SSD 8642.

In accordance with Condition D8, the revised AQMP must be submitted to the Planning Secretary for approval within six weeks of the review. A summary of the AQMP review history is maintained as per the Review History contained in this AQMP.

Mangoola has sought a variation to Mangoola's exiting EPL 12894 to accommodate the commencement of development. As required by Condition D6 of SSD 8642 this AQMP may be required to be updated to ensure consistency with EPL 12894.

5.8 Document review history

Full details of the document history are recorded in the document control register, by version. A summary of the current change is provided in **Table 5-5**.

Table 5-5 AQMP document history

| Version | Date Reviewed | Reviewed By | Amendment |
|---------|----------------|-----------------------------|--|
| 1 | 2007 | Centennial Coal/ Umwelt | Initial development of document. |
| 2 | September 2008 | Xstrata Mangoola | First Draft sent to DoPI and EPA for review. |
| 3 | May 2008 | Xstrata Mangoola | Updated following receiving EPL and sent to DoPI. |
| 4 | January 2009 | DoPI | First approved document. |
| 5 | June 2011 | Xstrata Mangoola/ Umwelt | Development of AQMP to detail the air quality management and monitoring activities associated with the construction and operational phase of the mine. |
| 6 | October 2012 | Xstrata Mangoola/ Umwelt | Updates to AQMP following Project Approval modification. |
| 7 | April 2013 | Xstrata Mangoola | Reviewed in light of DP&I feedback and re-submitted June 2013 for approval. |
| 8 | September 2013 | Mangoola / DP&I | AQMP approved 11th September 2013. Added evidence of this to appendix and updated document date to reflect approval date. |
| 9 | July 2014 | Mangoola / DPE | Review following Modification 6 to Project Approval (PA) 06_0014. |
| 10 | July 2016 | Mangoola | <ul style="list-style-type: none"> Relocation D01-DC to 393 Wybong PO Road, Wybong, to reflect a new nearest private sensitive receptor in this locality following acquisition of the property at 275 Wybong PO Road. As a result of this relocation, D01-DC shall be renamed D06-DC here-on; Conversion of D01-TSP to D01-PM10 at 275 Wybong PO Road, in order to monitor air quality on mine-owned property; Installation of D07-PM10 at 2530 Wybong Road and D06-PM10 at 1171 Mangoola Road in order to monitor air quality on the mine-owned property; Remove DG05 and DG08 from monitoring network due to position within approved disturbance boundary; and EPL12894 Variation dated 14/12/2015: <ul style="list-style-type: none"> Removed requirement for TSP and dust deposition from license D7-DC and D8-DC installed to monitor at near edge of mine site both upwind and downwind in alignment with the predominant wind direction. |
| 11 | August 2017 | Mangoola | Address comments from DPE dated 17 August 2017. |
| 12 | December 2017 | Mangoola | <ul style="list-style-type: none"> Removal of DG21 as per technical review following new property owner refusing access to site. Updated Table 4.1-4.3 note, acknowledging risk of data loss due to external events outside the control of Mangoola Coal. Updated 5.4 Corrective action to include prevention of access by landowner. |
| 13 | January 2018 | Mangoola | Minor formatting for publishing to Mangoola website. |
| 14 | February 2018 | Mangoola | <ul style="list-style-type: none"> Removal of requirement to provide 7 day report to EPA as it is not required under EPL 12894. |

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| Version | Date Reviewed | Reviewed By | Amendment |
|---------|----------------|-------------|---|
| | | | <ul style="list-style-type: none"> • Correction of air quality criteria Table notes and Appendix condition. • Updated Figure 4.1. • Updated Section 5.3 Exceedance reporting to include occurrence of extraordinary event. |
| 15 | December 2019 | Mangoola | <ul style="list-style-type: none"> • Added new definition to differentiate between Mangoola mine owned residences and other mine owned residences. • Updated figures • Changed reporting requirements for mine owned residence in line with recommendation contained in the IEA submitted to DPIE 16 October 2019. |
| 16 | September 2021 | Mangoola | <ul style="list-style-type: none"> • Review and completion of minor administrative updates to permit construction activities associated with SSD 8642. • Added air quality criteria (<i>Table 2-5</i>) as applicable for SSD 8642 and updated monitoring locations <i>Figure 3</i> to include relocated monitoring locations. |

6. References

Australian Standard AS 3580.14:2014 Methods for sampling and analysis of ambient air – Meteorological monitoring for ambient air quality monitoring applications.

Australian Standard AS/NZS 3580.10.1:2003 Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method.

Australian Standard AS 3580.9.8-2008 Methods for Sampling and Analysis of Ambient Air – Determination of Suspended Particulate Matter – PM₁₀ Continuous Direct Mass Method Using a Tapered Element Oscillating Microbalance Analyser.

AS/NZ 3580.9.3-2015 Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – Total suspended particulate matter (TSP) – High volume sampler gravimetric method.

AS/NZS 3580.9.6:2015 Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM10 high volume sampler with size-selective inlet-gravimetric method.

EMGA Mitchell McLennan, 2013. Mangoola Open Cut Modification 6 Environmental Assessment, Report prepared for Xstrata Mangoola Pty Limited.

Mangoola Open Cut, Blast Fume Management Procedure as revised from time to time.

Mangoola Open Cut, Blast Management Plan as revised from time to time.

Mangoola Open Cut, Spontaneous Combustion Management Plan as revised from time to time.

NSW Environment Protection Authority (EPA), 2007. Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales.

Jacobs 2019 Mangoola Coal Continued Operations Project Air Quality Impact Assessment completed for the Mangoola Coal Continued Operations Project Environmental Impact Statement

Todoroski Air Sciences 2021, Mangoola Coal Air Quality Monitoring Network Review - Mangoola Coal Continued Operations Project

Umwelt 2019 Mangoola Coal Continued Operations Project Environmental Impact Statement

Mangoola Open Cut Environmental Management Strategy as revised from time to time.

Appendix A - Authority Correspondence



Planning,
Industry &
Environment

Mr Nathan Lane
Environment and Community Manager
Mangoola Coal Pty Ltd
PO Box 495
Muswellbrook NSW 2333

18/02/2020

Dear Mr Lane

Mangoola Coal Project (MP 06_0014)
Air Quality Management Plan

I refer to the revised Air Quality Management Plan dated December 2019, which was submitted in accordance with condition 23 of Schedule 3 of the approval for the Mangoola Coal Project (MP 06_0014).

The Department has carefully reviewed the document and is satisfied that it adequately meets the relevant requirements of the approval.

Accordingly, the Secretary has approved the Air Quality Management Plan (Revision 15, dated December 2019). Please ensure that the approved plan is placed on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Melanie Hollis on 8217 2043.

Yours sincerely

A handwritten signature in black ink, appearing to read 'M Sprott'.

Matthew Sprott
A/Director
Resource Assessments (Coal & Quarries)

As nominee of the Planning Secretary



Planning,
Industry &
Environment

Planning & Assessment
Resource Assessments
Contact: Joe Fittell
Phone: 02 4908 6896
Email: joe.fittell@planning.nsw.gov.au

Mr Brian Pease
Glencore Coal Assets Australia
PO Box 495
Muswellbrook NSW 2333

16/07/2021

Dear Mr Pease

**Mangoola Coal Continued Operations Project (SSD 8642)
Staging of Management Plans**

I refer to your letter dated 15 July 2021 regarding the proposed staged approach to updating the management plans required under the Mangoola Coal Continued Operation Project development consent (SSD 8642).

The Department has reviewed the approach to updating the management plans provided in Attachment 1 of your letter and confirms it is satisfied that the staged approach is appropriate and would ensure compliance with the relevant conditions of consent. The Department also considers that the proposed approach to consultation with relevant parties detailed in your letter is appropriate.

Further to the above, the Department considers that implementation of the existing Environmental Management Strategy (EMS), prepared in accordance with the condition 1, Schedule 5 of PA 06_0014, during the construction period is appropriate, and agrees that a revised EMS is only required to be prepared and approved prior to commencing mining operations north of Wybong Road in accordance with condition D2 of Schedule 2 of SSD 8642.

If you wish to discuss the matter further, please contact Joe Fittell at the details above.

Yours sincerely,

Matthew Sprott
Director
Resource Assessments
as the Planning Secretary's nominee

4 Parramatta Square, 12 Darcy Street, Parramatta 2150 | dpie.nsw.gov.au | 1

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Appendix B – Approvals Summary

B1 Approval Conditions

| Condition | Project Approval Condition | Section of Document | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|------------------------|--|--------|-----------------------------------|---|--------|-----------------------------------|-----------|------------------|------------------------|---|---------|-----------------------------------|-----------|------------------|--|------------------------------------|-----------------------------|--------|--|--|------------|
| Schedule 3 Condition 18 | Odour The Proponent must ensure that no offensive odours, as defined under the POEO Act, are emitted from the site. | 3.5 | | | | | | | | | | | | | | | | | | | | | | | |
| Schedule 3 Condition 19 | Impact Assessment Criteria The Proponent must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not cause exceedances of the criteria listed in Tables 5, 6 and 7 at any residence on privately-owned land (excluding the dust affected properties listed in Table 1). <i>Table 5: Long term impact assessment criteria for particulate matter</i> <table><tr><th>Pollutant</th><th>Averaging period</th><th>^d Criterion</th></tr><tr><td>Total suspended particulate (TSP) matter</td><td>Annual</td><td>^a 90 µg/m³</td></tr><tr><td>Particulate matter < 10µm (PM₁₀)</td><td>Annual</td><td>^a 30 µg/m³</td></tr></table> <i>Table 6: Short term impact assessment criterion for particulate matter</i> <table><tr><th>Pollutant</th><th>Averaging period</th><th>^d Criterion</th></tr><tr><td>Particulate matter < 10µm (PM₁₀)</td><td>24 hour</td><td>^a 50 µg/m³</td></tr></table> <i>Table 7: Long term impact assessment criteria for deposited dust</i> <table><tr><th>Pollutant</th><th>Averaging period</th><th>Maximum increase in deposited dust level</th><th>Maximum total deposited dust level</th></tr><tr><td>^c Deposited dust</td><td>Annual</td><td>^b 2 g/m²/month</td><td>^a 4 g/m²/month</td></tr></table> <i>Notes to Tables 5-7:</i> <i>a</i> Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources); <i>b</i> Incremental impact (i.e. incremental increase in concentrations due to the development on its own); <i>c</i> Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter- Deposited Matter – Gravimetric Method; and <i>d</i> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary. | Pollutant | Averaging period | ^d Criterion | Total suspended particulate (TSP) matter | Annual | ^a 90 µg/m ³ | Particulate matter < 10µm (PM ₁₀) | Annual | ^a 30 µg/m ³ | Pollutant | Averaging period | ^d Criterion | Particulate matter < 10µm (PM ₁₀) | 24 hour | ^a 50 µg/m ³ | Pollutant | Averaging period | Maximum increase in deposited dust level | Maximum total deposited dust level | ^c Deposited dust | Annual | ^b 2 g/m ² /month | ^a 4 g/m ² /month | 2, 3.1-3.4 |
| Pollutant | Averaging period | ^d Criterion | | | | | | | | | | | | | | | | | | | | | | | |
| Total suspended particulate (TSP) matter | Annual | ^a 90 µg/m ³ | | | | | | | | | | | | | | | | | | | | | | | |
| Particulate matter < 10µm (PM ₁₀) | Annual | ^a 30 µg/m ³ | | | | | | | | | | | | | | | | | | | | | | | |
| Pollutant | Averaging period | ^d Criterion | | | | | | | | | | | | | | | | | | | | | | | |
| Particulate matter < 10µm (PM ₁₀) | 24 hour | ^a 50 µg/m ³ | | | | | | | | | | | | | | | | | | | | | | | |
| Pollutant | Averaging period | Maximum increase in deposited dust level | Maximum total deposited dust level | | | | | | | | | | | | | | | | | | | | | | |
| ^c Deposited dust | Annual | ^b 2 g/m ² /month | ^a 4 g/m ² /month | | | | | | | | | | | | | | | | | | | | | | |

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| Condition | Project Approval Condition | Section of Document | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|------------------------|--|--------|-----------------------------------|--|--------|-----------------------------------|-----------|------------------|-------------------------|-----------------------------------|---------|------------------------|-----------------------------------|---------|-----------------------|-----------|------------------|--|------------------------------------|-----------------------------|--------|--|--|----------|
| Schedule 3 Condition 20 | <p>Land Acquisition Criteria</p> <p>If particulate matter emissions generated by the project exceed the criteria, or contribute to the exceedances of the relevant cumulative criteria, in Tables 8, 9 and 10 at any residence on privately-owned land then upon receiving a written request for acquisition from the landowner, the Proponent must acquire the land in accordance with the procedures in conditions 10-11 of schedule 4.</p> <p><i>Table 8: Long term land acquisition criteria for particulate matter</i></p> <table><tr><th>Pollutant</th><th>Averaging period</th><th>^d Criterion</th></tr><tr><td>Total suspended particulate (TSP) matter</td><td>Annual</td><td>^a 90 µg/m³</td></tr><tr><td>Particulate matter < 10 µm (PM₁₀)</td><td>Annual</td><td>^a 30 µg/m³</td></tr></table> <p><i>Table 9: Short term land acquisition criteria for particulate matter</i></p> <table><tr><th>Pollutant</th><th>Averaging period</th><th>^{da} Criterion</th></tr><tr><td>Particulate matter < 10 µm (PM10)</td><td>24 hour</td><td>^a 150 µg/m3</td></tr><tr><td>Particulate matter < 10 µm (PM10)</td><td>24 hour</td><td>^b 50 µg/m3</td></tr></table> <p><i>Table 10: Long term land acquisition criteria for deposited dust</i></p> <table><tr><th>Pollutant</th><th>Averaging period</th><th>Maximum increase in deposited dust level</th><th>Maximum total deposited dust level</th></tr><tr><td>^c Deposited dust</td><td>Annual</td><td>^b 2 g/m²/month</td><td>^a 4 g/m²/month</td></tr></table> <p><i>Notes to Tables 8-10:</i></p> <p><i>a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources);</i></p> <p><i>b Incremental impact (i.e. incremental increase in concentrations due to the development on its own);</i></p> <p><i>c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method; and</i></p> <p><i>d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Secretary.</i></p> <p>If the air quality acquisition criteria in Tables 8, 9 and 10 are being exceeded, and more than one mine is responsible for this non-compliance, then the Proponent must, together with the relevant mine/s acquire the land on as equitable a basis as possible with the relevant mine/s, in accordance with the procedures in conditions 10-11 of schedule 4.</p> <p>If the Proponent cannot agree on the arrangements for the acquisition of the land with the relevant/ mine/s within 3 months of the written request from the landowner, then the Proponent must refer the matter to the Secretary for resolution.</p> | Pollutant | Averaging period | ^d Criterion | Total suspended particulate (TSP) matter | Annual | ^a 90 µg/m ³ | Particulate matter < 10 µm (PM ₁₀) | Annual | ^a 30 µg/m ³ | Pollutant | Averaging period | ^{da} Criterion | Particulate matter < 10 µm (PM10) | 24 hour | ^a 150 µg/m3 | Particulate matter < 10 µm (PM10) | 24 hour | ^b 50 µg/m3 | Pollutant | Averaging period | Maximum increase in deposited dust level | Maximum total deposited dust level | ^c Deposited dust | Annual | ^b 2 g/m ² /month | ^a 4 g/m ² /month | 2.2, 4.3 |
| Pollutant | Averaging period | ^d Criterion | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total suspended particulate (TSP) matter | Annual | ^a 90 µg/m ³ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Particulate matter < 10 µm (PM ₁₀) | Annual | ^a 30 µg/m ³ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pollutant | Averaging period | ^{da} Criterion | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Particulate matter < 10 µm (PM10) | 24 hour | ^a 150 µg/m3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Particulate matter < 10 µm (PM10) | 24 hour | ^b 50 µg/m3 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pollutant | Averaging period | Maximum increase in deposited dust level | Maximum total deposited dust level | | | | | | | | | | | | | | | | | | | | | | | | | |
| ^c Deposited dust | Annual | ^b 2 g/m ² /month | ^a 4 g/m ² /month | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Schedule 3 Condition 21 | Mine-owned Land The Proponent must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not cause exceedances of the criteria listed in Tables 8, 9 and 10 at any occupied residence on mine-owned land (including land owned by another mine) unless: <ul style="list-style-type: none"> (a) the tenant and landowner has been notified of any health risks associated with such exceedances in accordance with the notification requirements under schedule 4 of this approval; (b) the tenant of any land owned by the Proponent can terminate their tenancy agreement without penalty at any time, subject to giving reasonable notice; (c) air quality monitoring is regularly undertaken to inform the tenant and landowner of the actual particulate emissions; and (d) data from this monitoring is presented to the tenant in an appropriate format, for a medical practitioner to assist the tenant in making informed decisions on the health risks associated with occupying the property, to the satisfaction of the Secretary. | 3.1-3.4, 5.1, 5.3, 5.4 Mangoola Tenant Pack |
| Schedule 3 Condition 22 | Operating Conditions The Proponent must: <ul style="list-style-type: none"> (a) implement all reasonable and feasible measures to minimise the off-site odour, fume and dust emissions of the project; (b) implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site; (c) minimise any visible off-site air pollution generated by the project; (d) minimise the surface disturbance of the site; (e) operate a comprehensive air quality management system that uses a combination of predictive meteorological forecasting and real-time air quality monitoring data to guide the day to day planning of mining operations and the implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this approval; (f) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see Noted above under Table 10), to the satisfaction of the Secretary. | 3.5 3 4.2 3.3, 3.2 |
| Schedule 3 Condition 23 | Air Quality Management Plan The Proponent must prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must: <ul style="list-style-type: none"> a) describe the measures that would be implemented to ensure compliance with the relevant air quality criteria and operating conditions of this approval; b) describe the project air quality management system; c) include an air quality monitoring program that: <ul style="list-style-type: none"> • uses a combination of real-time monitors and supplementary monitors, to evaluate the performance of the project against the air quality criteria in this approval; • adequately supports the proactive and reactive noise management system; • includes PM_{2.5} monitoring (although this obligation could be satisfied by the regional air quality monitoring network if sufficient justification is provided); • evaluates and reports on the effectiveness of the air quality management system; and • defines what constitutes an air quality incident, and includes a protocol for determining and notifying the Department and relevant stakeholders of any air quality incidents; and d) describe the management process and apply the necessary mitigation measures to minimise the effect of dust deposits on the performance of rainwater filtration for human consumption and electronic solar systems on private residential properties. <p>The proponent must implement the approved management plan as approved from time to time by the Secretary.</p> | Entire Document 3.3, 3.2 3.3 4.2 3.3.2 4.2 5.1 5.3 3.3 |

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| Schedule 3 Condition 24 | Meteorological Monitoring During the life of the project, the Proponent must ensure that there is a suitable meteorological station in the vicinity of the site that: <ul style="list-style-type: none"> (a) complies with the requirements in the <i>Approved Methods for Sampling of Air Pollutants in New South Wales guideline</i>; and (b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the <i>NSW Industrial Noise Policy</i>, unless a suitable alternative is approved by the Secretary following consultation with the EPA. | 4.2 |
| Schedule 4 Condition 1 | Notification of Landowners 1. Within 1 month of this approval, the Proponent must: <ul style="list-style-type: none"> (a) notify in writing the owners of: <ul style="list-style-type: none"> • any residence on the land listed in Table 2 of schedule 3 that they have the right to request the Proponent to ask for additional noise mitigation measures to be installed at their residence at any stage during the project; and • any privately-owned land within 2 kilometres of the approved open cut mining pit/s that they are entitled to ask for an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous property inspection report updated; (b) notify the tenants of any mine-owned land of their rights under this approval; and (c) send a copy of the NSW Health fact sheet entitled “Mine Dust and You” (as may be updated from time to time) to the owners and/or existing tenants of any land (including mine-owned land) where the predictions in the EA identify that dust emissions generated by the project are likely to be greater than the relevant air quality criteria in schedule 3 at any time during the life of the project. | N/A |
| Schedule 4 Condition 2 | Prior to entering into any tenancy agreement for any land owned by the Proponent that is predicted to experience exceedances of the recommended dust and/or noise criteria, or for any of the land listed in Table 2 that is subsequently purchased by the Proponent, the Proponent must: <ul style="list-style-type: none"> (a) advise the prospective tenants of the potential health and amenity impacts associated with living on the land, and give them a copy of the NSW Health fact sheet entitled “Mine Dust and You” (as may be updated from time to time); and (b) advise the prospective tenants of the rights they would have under this approval, to the satisfaction of the Secretary. | 3.3 |
| Schedule 4 Condition 3 | As soon as practicable after obtaining monitoring results showing: <ul style="list-style-type: none"> (a) an exceedance of any relevant criteria in schedule 3, the Proponent must notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the project is again complying with the relevant criteria; and (b) an exceedance of the relevant air quality criteria in schedule 3, the Proponent must send a copy of the NSW Health fact sheet entitled “Mine Dust and You” (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land). | 5.3, 5.4 Mangoola Tenant Pack |

| Condition | Project Approval Condition | Section of Document |
|---|---|--------------------------|
| Schedule 4 Condition 4 | <p>Independent Review</p> <p>If a landowner considers the project to be exceeding the impact assessment criteria in schedule 3, except where this is predicted in the EA, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land.</p> <p>If the Secretary is satisfied that an independent review is warranted, the Proponent must within 3 months of the Secretary 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 Secretary, to conduct monitoring on the land, to determine whether the project 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 project's contribution to this impact; and (c) give the Secretary and landowner a copy of the independent review. | 4.3 |
| Schedule 4 Condition 5 | If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary. | 4.3 |
| Schedule 4 Condition 6 | <p>If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent must:</p> <ul style="list-style-type: none"> (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and (b) conduct further monitoring to determine whether these measures ensure compliance; or (c) secure a written agreement with the landowner to allow exceedances of the criteria in schedule 3, <p>to the satisfaction of the Secretary.</p> <p>If the additional monitoring referred to above subsequently determines that the project is complying with the relevant criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary.</p> <p>If the Proponent is unable to finalise an agreement with the landowner, then the Proponent or landowner may refer the matter to the Secretary for resolution.</p> <p>If the matter cannot be resolved within 21 days, the Secretary shall refer the matter to an Independent Dispute Resolution Process (see Appendix 8).</p> <p>If the measures referred to in (a) do not achieve compliance with the air quality and/or noise land acquisition criteria in schedule 3, and the Proponent cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then the Proponent shall, upon receiving a written request from the landowner, acquire all or part of the landowner's land in accordance with the procedures in conditions 10-11 below.</p> | 4.3 5.2 |

| Condition | Project Approval Condition | Section of Document |
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| Schedule 4 Condition 7 | <p>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 Proponent must, together with the relevant mine/s:</p> <ul style="list-style-type: none"> (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the relevant criteria are complied with; and (b) conduct further monitoring to determine whether these measures ensure compliance; or (c) secure a written agreement with the landowner and other relevant mines to allow exceedances of the criteria in schedule 3, to the satisfaction of the Secretary. <p>If the additional monitoring referred to above subsequently determines that the projects are complying with the relevant criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Secretary.</p> <p>If the Proponent is unable to finalise an agreement with the landowner and/or other mine/s, then the Proponent or landowner may refer the matter to the Secretary for resolution.</p> <p>If the matter cannot be resolved within 21 days, the Secretary shall refer the matter to an Independent Dispute Resolution Process (see Appendix 9).</p> <p>If the measures referred to in (a) do not achieve compliance with the air quality and/or noise land acquisition criteria in schedule 3, and the Proponent together with the relevant mine/s 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 Proponent must 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 10-11 below.</p> | 4.3 |
| Schedule 4 Condition 8 | If the landowner disputes the results of the independent review, either the Proponent or the landowner may refer the matter to the Secretary for resolution. If the matter cannot be resolved within 21 days, the Secretary shall refer the matter to an Independent Dispute Resolution Process. | 4.3 |
| Schedule 4 Condition 9 | If, following the Independent Dispute Resolution Process, the Secretary decides that the Proponent shall acquire all or part of the landowner's land, then the Proponent shall acquire this land in accordance with the procedures in conditions 10-11 below. | 4.3 |

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| <p>Schedule 4</p> <p>Condition 10</p> | <p>LAND ACQUISITION</p> <p>Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent must 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 project the subject of the project application, 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 implementation of the 'additional noise mitigation measures' in condition of schedule 3; <p>(b) the reasonable costs associated with:</p> <ul style="list-style-type: none"> relocating within the Muswellbrook local government area, or to any other local government area determined by the Secretary; obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and <p>(c) reasonable compensation for any disturbance caused by the land acquisition process.</p> <p>However, if at the end of this period, the Proponent and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.</p> <p>Upon receiving such a request, the Secretary shall request the President of the NSW Division of the Australian Property Institute (API) to appoint a qualified independent valuer to:</p> <p>(a) consider submissions from both parties;</p> <p>(b) determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above;</p> <p>(c) prepare a detailed report setting out the reasons for any determination; and</p> <p>(d) provide a copy of the report to both parties.</p> <p>Within 14 days of receiving the independent valuer's report, the Proponent must make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.</p> <p>However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary shall determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report and the detailed report of the party that disputes the independent valuer's determination.</p> <p>Within 14 days of the Secretary determination, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination.</p> <p>If the landowner refuses to accept the Proponent's binding written offer under this condition within 6 months of the offer being made, then the Proponent's obligations to acquire the land shall cease, unless the Secretary determines otherwise.</p> | <p>4.3</p> |
| <p>Schedule 4</p> <p>Condition 11</p> | <p>The Proponent must pay all reasonable costs associated with the land acquisition process described in condition 10 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of Registrar-General.</p> | <p>4.3</p> |

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| Schedule 5 Condition 2 | ADAPTIVE MANAGEMENT The Proponent must assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures in schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this approval and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation. Where any exceedance of these criteria and/or performance measures has occurred, the Proponent must, at the earliest opportunity: (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur; (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and (c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary. | 5.3, 5.4 |
| Schedule 5 Condition 3 | The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include: (d) detailed baseline data (where available); (e) a description of: <ul style="list-style-type: none"> the relevant statutory requirements (including any relevant approval, licence or lease conditions); any relevant limits or performance measures/criteria; the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; (f) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (g) a program to monitor and report on the: <ul style="list-style-type: none"> impacts and environmental performance of the project; effectiveness of any management measures (see c above); (h) a program to investigate and implement ways to improve the environmental performance of the project over time; (i) a protocol for managing and reporting any: <ul style="list-style-type: none"> incidents; complaints; non-compliances with statutory requirements; and exceedances of the impact assessment criteria and/or performance criteria; and (j) a protocol for periodic review of the plan. | Appendix B 2 3 4 5 |
| Relevant Conditions of SSD 8642 | | |
| A3 | Consistent with the requirements in this consent, the Planning Secretary may make written directions to the Applicant in relation to: (a) The content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary; and (b) The implementation of any actions or measures contained in any such document referred to in condition A3(a). | 5.7 |

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|--|---|--------------------------------------|------------------|-----------|--|--------|--------------------------------------|---------|-----------------------------------|--|--------|-------------------------------------|---------|-----------------------------------|--|--------|--------------------------------------|-------------|
| A13 | The date of commencement of each of the following phases of the development must be notified to the Department in writing, at least two weeks before that date: <ul style="list-style-type: none"> (a) commencement of development under the consent; (b) commencement of construction under the consent; (c) commencement of mining operations under the, consent; (d) cessation of mining operations (i.e. mine closure); and (e) any period of suspension of mining operations (i.e. care and maintenance). | 2.1 | | | | | | | | | | | | | | | | |
| A24 | With the approval of the Planning Secretary, the Applicant may: <ul style="list-style-type: none"> (a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program); (b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); (c) combine any strategy, plan, program or Annual Review required by this consent with any similar strategy, plan, program or Annual Review required under the Mangoola Coal Project (PA 06_0014); and (d) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development). | 1.2 | | | | | | | | | | | | | | | | |
| A25 | If the Planning Secretary agrees, a strategy, plan or program may be staged or updated with minor administrative amendments without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent. | 1.2 | | | | | | | | | | | | | | | | |
| A31 | The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development. | 3.6 | | | | | | | | | | | | | | | | |
| B26 | The Applicant must ensure that no offensive odours, as defined under the POEO Act, are emitted from the site. | 3.5 | | | | | | | | | | | | | | | | |
| B27 | <p>The Applicant must ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not cause exceedances of the criteria listed in Table 4 at any residence on privately-owned land.</p> <p>Table 4: Air quality criteria</p> <table> <tr> <th>Pollutant</th><th>Averaging period</th><th>Criterion</th></tr> <tr> <td rowspan="2">Particulate matter < 10 µm (PM₁₀)</td><td>Annual</td><td>^{a, c} 25 µg/m³</td></tr> <tr> <td>24 hour</td><td>^b 50 µg/m³</td></tr> <tr> <td rowspan="2">Particulate matter < 2.5 µm (PM_{2.5})</td><td>Annual</td><td>^{a, c} 8 µg/m³</td></tr> <tr> <td>24 hour</td><td>^b 25 µg/m³</td></tr> <tr> <td>Total suspended particulate (TSP) matter</td><td>Annual</td><td>^{a, c} 90 µg/m³</td></tr> </table> <p>Notes:</p> <p>^a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).</p> <p>^b Incremental impact (i.e. incremental increase in concentrations due to the development on its own).</p> <p>^c Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed by the Planning Secretary.</p> | Pollutant | Averaging period | Criterion | Particulate matter < 10 µm (PM ₁₀) | Annual | ^{a, c} 25 µg/m ³ | 24 hour | ^b 50 µg/m ³ | Particulate matter < 2.5 µm (PM _{2.5}) | Annual | ^{a, c} 8 µg/m ³ | 24 hour | ^b 25 µg/m ³ | Total suspended particulate (TSP) matter | Annual | ^{a, c} 90 µg/m ³ | 2.4 and 3.3 |
| Pollutant | Averaging period | Criterion | | | | | | | | | | | | | | | | |
| Particulate matter < 10 µm (PM ₁₀) | Annual | ^{a, c} 25 µg/m ³ | | | | | | | | | | | | | | | | |
| | 24 hour | ^b 50 µg/m ³ | | | | | | | | | | | | | | | | |
| Particulate matter < 2.5 µm (PM _{2.5}) | Annual | ^{a, c} 8 µg/m ³ | | | | | | | | | | | | | | | | |
| | 24 hour | ^b 25 µg/m ³ | | | | | | | | | | | | | | | | |
| Total suspended particulate (TSP) matter | Annual | ^{a, c} 90 µg/m ³ | | | | | | | | | | | | | | | | |
| B28 | The air quality criteria in Table 4 do not apply if the Applicant has an agreement with the owner/s of the relevant residence or land to exceed the air quality criteria, and the Applicant has advised the Department in writing of the terms of this agreement. | 2.3 | | | | | | | | | | | | | | | | |

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| B29 | <p>Mine-owned Land</p> <p>Particulate matter emissions generated by the development must not exceed the criteria listed in Table 4 at any occupied residence on mine-owned land (including land owned by another mining company) unless:</p> <ul style="list-style-type: none"> (a) the tenant and landowner (if the residence is owned by another mining company) have been notified of any health risks associated with such exceedances in accordance with the notification requirements under PART C of this consent; (b) the tenant of any land owned by the Applicant, can terminate their tenancy agreement without penalty at any time, subject to giving 14 days notice; (c) air quality monitoring is regularly undertaken to inform the tenant and landowner (if the residence is owned by another mining company) of the likely particulate matter emissions at the residence; and (d) data from this monitoring is presented to the tenant and landowner in an appropriate format for a medical practitioner to assist the tenant and landowner in making informed decisions on the health risks associated with occupying the property. | 3.3.1 |
| B30 | <p>Air Quality Operating Conditions</p> <p>The Applicant must:</p> <ul style="list-style-type: none"> a) take all reasonable steps to: <ul style="list-style-type: none"> (i) minimise odour, fume and particulate matter (including PM10 and PM2.5) emissions of the development, paying particular attention to minimising wheel-generated haul road emissions; (ii) manage and minimise the risk of spontaneous combustion; (iii) improve energy efficiency and reduce greenhouse gas emissions of the development; (iv) minimise visible off-site air pollution generated by the development; and (v) minimise the extent of potential dust emanating surfaces exposed on the site at any given point in time; (b) ensure that all 'non-road' mobile diesel equipment used in undertaking the development includes reasonable and feasible diesel emissions reduction technology; (c) operate a comprehensive air quality management system that uses a combination of predictive meteorological forecasting and real-time air quality monitoring data to guide the day to day planning of mining operations and the implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this consent; (d) minimise the air quality impacts of the development during adverse meteorological conditions and extraordinary events (see Note c to Table 4 above); (e) minimise air quality impacts of the development on air quality-affected land referred to in Table 10 and Table 11 for as long as the land remains privately-owned (i.e. until it is acquired); (f) make all reasonable efforts to co-ordinate air quality management on the site with the air quality management at nearby mines to minimise cumulative air quality impacts; (g) carry out regular air quality monitoring to determine whether the development is complying with the relevant conditions of this consent; and (h) regularly assess meteorological and air quality monitoring data, and modify operations on the site to ensure compliance with the relevant conditions of this consent. | 3 |

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| B31 | <p>The Applicant must prepare an Air Quality and Greenhouse Gas Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:</p> <ul style="list-style-type: none">(a) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary;(b) prepared in consultation with the CCC;(c) describe the measures to be implemented to ensure:<ul style="list-style-type: none">(i) compliance with the air quality criteria and operating conditions of this consent;(ii) best practice management is being employed to:<ul style="list-style-type: none">• minimise the development's air quality impacts;• minimise the development's Scope 11 and 2 greenhouse gas emissions; and• improve the development's energy efficiency; and(iii) the air quality impacts of the development are minimised during adverse meteorological conditions and extraordinary events;(d) describe the air quality management system in detail; and(e) include an air quality monitoring program, undertaken in accordance with the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007), that:<ul style="list-style-type: none">(i) establishes a diesel combustion emissions baseline;(ii) uses monitors to evaluate the performance of the development against the air quality criteria in this consent and to guide day to day planning of mining operations;(iii) adequately supports the air quality management system; and(iv) includes a protocol for identifying any air quality-related exceedance, incident or non-compliance and for notifying the Department and relevant stakeholders of these events. | Not triggered. see Section 1.2 | | | | | | |
| B32 | The Applicant must not commence mining operations north of Wybong Road until the Air Quality and Greenhouse Gas Management Plan is approved by the Planning Secretary. | 2.1 | | | | | | |
| B33 | The Applicant must implement the Air Quality and Greenhouse Gas Management Plan as approved by the Planning Secretary | Not triggered. see Section 1.2 | | | | | | |
| B35 | <p>Prior to the commencement of construction and for the life of the development, the Applicant must ensure that there is at least one suitable meteorological station operating in the vicinity of the site that:</p> <ul style="list-style-type: none">(a) complies with the requirements in the Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales (DEC, 2007); and(b) is capable of measuring meteorological conditions in accordance with the NSW Noise Policy for Industry (EPA, 2017), unless a suitable alternative is approved by the Planning Secretary following consultation with the EPA. | 4 | | | | | | |
| C1 | <p>Upon receiving a written request for acquisition from the owner of the privately-owned land listed in Table 10, the Applicant must acquire the land in accordance with the procedures in conditions C12 to C19, inclusive.</p> <p>Table 10: Land subject to acquisition upon request</p> <table><tr><th>Acquisition Basis</th><th>Land</th></tr><tr><td>Noise</td><td>R25, R66, R110, R130, R139, R148, R205</td></tr><tr><td>Noise and Air Quality</td><td>R83</td></tr></table> | Acquisition Basis | Land | Noise | R25, R66, R110, R130, R139, R148, R205 | Noise and Air Quality | R83 | 2.4.2 |
| Acquisition Basis | Land | | | | | | | |
| Noise | R25, R66, R110, R130, R139, R148, R205 | | | | | | | |
| Noise and Air Quality | R83 | | | | | | | |

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| C2 | <p>Upon receiving a written request for mitigation from the owner of any residence on the privately-owned land listed in Table 10 or Table 11, the Applicant must implement additional mitigation measures at or in the vicinity of the residence in consultation with the landowner. These measures must be consistent with the measures outlined in the Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Development (NSW Government, 2018). They must also be reasonable and feasible, proportionate to the level of predicted impact and directed towards reducing the noise and/or air quality impacts of the development. The Applicant must also be responsible for the reasonable, costs of ongoing maintenance of these additional mitigation measures until the cessation of mining operations.</p> <p>Table 11: Land subject to additional mitigation upon request</p> <table><tr><th>Mitigation Basis</th><th>Land</th></tr><tr><td>Noise</td><td>R128, R144, R154, R171, R176, R193, R261, R263, R109A, R109B, R109C, R109D, R109E, R109F, R125A, R134A, R182B, R164, R177, R251, R174A, R174B</td></tr></table> | Mitigation Basis | Land | Noise | R128, R144, R154, R171, R176, R193, R261, R263, R109A, R109B, R109C, R109D, R109E, R109F, R125A, R134A, R182B, R164, R177, R251, R174A, R174B | 2.4.2 |
| Mitigation Basis | Land | | | | | |
| Noise | R128, R144, R154, R171, R176, R193, R261, R263, R109A, R109B, R109C, R109D, R109E, R109F, R125A, R134A, R182B, R164, R177, R251, R174A, R174B | | | | | |
| C3 | If within 3 months of receiving this request from the owner, the Applicant and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Planning Secretary for resolution. | 2.4.2 | | | | |
| C4 | For the life of the development, the Applicant must continue to contribute to reasonable maintenance and recurrent operating costs associated with the noise mitigation measures installed at privately-owned residences under the Mangoola Coal Project and as described in the documents listed in condition A2(c). The contribution to ongoing maintenance and recurrent operating costs must be consistent with any existing agreement between the Applicant and the relevant landowner. | 2.4.2 | | | | |
| C5 | <p>Within one month of the date of this consent, the Applicant must:</p> <ul style="list-style-type: none">(a) notify in writing the owner of:<ul style="list-style-type: none">(i) the land listed in Table 10 that they have the right to require the Applicant to acquire their land at any stage during the development;(ii) the residences on the land listed in Table 10 and Table 11 that they are entitled to ask the Applicant to install additional mitigation measures at the residence; and(iii) any privately-owned land within 3 kilometres of the approved open cut mining pit/s that they are entitled to ask the Applicant for an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous property inspection report updated;(b) notify the tenants of any mine-owned land of their rights under this consent; and(c) send a copy of the fact sheet entitled "Mine Dust and You" (NSW Health, 2017) to the owners and/or existing tenants of any land (including mine-owned land) where the predictions in the documents listed in condition A2(c) identify that dust emissions generated by the development are likely to be greater than the relevant air quality criteria identified in condition B27 at any time during the life of the development. | 2.4 | | | | |
| C6 | <p>Prior to entering into any tenancy agreement for any land owned by the Applicant that is predicted to experience exceedances of the recommended dust and/or noise criteria, the Applicant must:</p> <ul style="list-style-type: none">(a) advise the prospective tenants of the potential health and amenity impacts associated with living on the land, and give them a copy of the fact sheet entitled "Mine Dust and You" (NSW Health, 2017); and(b) advise the prospective tenants of the rights they would have under this consent, to the satisfaction of the Planning Secretary. | 5.4 | | | | |
| C7 | As soon as practicable and no longer than 7 days after obtaining monitoring results showing an exceedance of any noise, blasting or air quality criterion in PART B of this consent, the Applicant must provide the details of the exceedance to any affected landowners, tenants and the CCC. | 5.3 | | | | |
| C8 | For any exceedance of any air quality criterion in PAIRT B of this consent, the Applicant must also provide to any affected land owners and/or tenants a copy of the fact sheet entitled "Mine Dust and You" (NSW Health, 2017). | 5.3 | | | | |

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| C9 | If a landowner considers the development to be exceeding any relevant noise, blasting or air quality criterion in PART B of this consent, they may ask the Planning Secretary in writing for an independent review of the impacts of the development on their residence or land. | 4.3 |
| C10 | If the Planning Secretary is not satisfied that an independent review is warranted, the Planning Secretary will notify the landowner in writing of that decision, and the reasons for that decision, within 21 days of the request for a review | 4.3 |
| C11 | <p>If the Planning Secretary is satisfied that an independent review is warranted, within 3 months of the Planning Secretary's decision, or other timeframe agreed by the, Planning Secretary, the Applicant must:</p> <ul style="list-style-type: none"> (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Planning Secretary, to: <ul style="list-style-type: none"> (i) consult with the landowner to determine their concerns; (ii) conduct monitoring to determine whether the development is complying with the relevant criteria in PART B of this consent; and (iii) if the development is not complying with the relevant criterion, identify measures that could be implemented to ensure compliance with the relevant criterion; and (b) give the Planning Secretary and landowner a copy of the independent review; and (c) comply with any written requests made by the Planning Secretary to implement any findings of the review. | 4.3 |
| C12 | <p>C12. Within 3 months of receiving a written request for acquisition from a landowner with acquisition rights, the Applicant must make a binding written offer to the landowner based on:</p> <ul style="list-style-type: none"> (a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the development, having regard to the: <ul style="list-style-type: none"> (i) existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and (ii) presence of improvements on the land and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the additional noise and/or air quality mitigation measures in condition C2; (b) the reasonable costs associated with: <ul style="list-style-type: none"> (i) relocating within the Muswellbrook local government area, or to any other local government area agreed to by the Planning Secretary; and (ii) obtaining independent legal advice and ,expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and (c) reasonable compensation for any disturbance caused by the land acquisition process. | 2.4.2 |
| C13 | If, within two months of the binding written offer being made under condition C12, 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 Planning Secretary for resolution. | 2.4.2 |

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| C14 | <p>Upon receiving a request, under condition C 13, the Planning Secretary will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to:</p> <ul style="list-style-type: none"> (a) consider submissions from both parties; (b) determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in condition C 12; (c) prepare a detailed report setting out the reasons for any determination; and (d) provide a copy of the report to both parties. | 2.4.2 |
| C15 | Within 14 days of receiving the independent valuer's report, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination. | 2.4.2 |
| C16 | However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, either party may refer the matter to the Planning Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the, independent valuer and both parties, the Planning Secretary will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in condition C12, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions. | 2.4.2 |
| C17 | Within 14 days of this determination, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the Planning Secretary's determination. | 2.4.2 |
| C18 | If the landowner refuses to accept the Applicant's binding written offer under this condition within 6 months of the offer being made, then the Applicant's obligations to acquire the land shall cease, unless the Planning Secretary determines otherwise. | 2.4.2 |
| C19 | The Applicant must pay all reasonable costs associated with the land acquisition process described in conditions C12 to C18 inclusive, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the: Office of the Registrar-General. | 2.4.2 |
| D4 | <p>The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and performance measures in this consent. Any exceedance of these criteria or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.</p> <p>Where any exceedance of these criteria or performance measures has occurred, the Applicant must, at the earliest opportunity:</p> <ul style="list-style-type: none"> (a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur; (b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and (c) implement reasonable remediation measures as directed by the Planning Secretary. | 5.3 |

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| D5 | <p>Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:</p> <ul style="list-style-type: none"> (a) summary of relevant background or baseline data; (b) details of: <ul style="list-style-type: none"> (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions); (ii) any relevant limits or performance measures and criteria; and (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; (c) any relevant commitments or recommendations identified in the document/s listed in condition A2(c); (d) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria; (e) a program to monitor and report on the: <ul style="list-style-type: none"> (i) impacts and environmental performance → of the development; and (ii) effectiveness of the management measures set out pursuant to condition D4(c); (f) a contingency plan to manage any unpredicted! impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; (g) a program to investigate and implement ways to improve the environmental performance of the development over time; (h) a protocol for managing and reporting any: <ul style="list-style-type: none"> (i) incident, non-compliance or exceedance of any impact assessment criterion or performance criterion; (ii) complaint; or (iii) failure to comply with other statutory requirements; (i) public sources of information and data to assist stakeholders in understanding environmental impacts of the development; and (j) a protocol for periodic review of the plan. <p><i>Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</i></p> | Not triggered see Section 2.1 |
| D6 | The Applicant must ensure that management plans prepared for the development are consistent with the conditions of this consent and any EPL issued for the site. | 1.4.1 and 5.7.2 |
| D7 | <p>Within three months of:</p> <ul style="list-style-type: none"> (a) the submission of an incident report under condition D9; (b) the submission of an Annual Review under condition D11; (c) the submission of an Independent Environmental Audit under condition D12; (d) the approval of any modification of the conditions of this consent (unless the conditions require otherwise); or (e) notification of a change in development phase under conditions A13; <ul style="list-style-type: none"> • the suitability of existing strategies, plans and programs required under this consent must be review by the Applicant. | 5.7.2 |

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| D8 | If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required document must be submitted to the Planning Secretary for approval within six weeks of the review. | 5.7.2 |
| D9 | The Applicant must immediately notify the Department and any other relevant agencies immediately after it becomes aware of an incident. The notification must be in writing through the Department's Major Projects Website and identify the development (including the development applicant number and name) and set out the location and nature of the incident. | 5.3 |
| D10 | Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing through the Department's Major Projects Website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it doesn't comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance. Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance. | 5.3 |
| D11 | By the end of March each year after the commencement of development, or other timeframe agreed by the Planning Secretary, a report must be submitted to the Department reviewing the environmental performance of the development, to the satisfaction of the Planning Secretary. This review must: (a) describe the development (including any rehabilitation) that was carried out in the previous calendar, and the development that is proposed to be carried out over the current calendar year; (b) include a comprehensive review of the monitoring results and complaints records of the development over the previous calendar year, including a comparison of these results against the: (i) relevant statutory requirements, limits or performance measures/criteria; (ii) requirements of any plan or program required under this consent; (iii) monitoring results of previous years; and (iv) relevant predictions in the document/s listed in condition A2(c); (c) identify any non-compliance or incident which occurred in the previous calendar year, and describe what actions were (or are being) taken to rectify the non-compliance and avoid reoccurrence; (d) evaluate and report on: (i) the effectiveness of the noise and air quality and greenhouse gas management systems; (ii) compliance with the performance measures, criteria and operating conditions of this consent; and (iii) the status of translocated plants and vegetation quadrat data from orchid monitoring sites; (e) identify any trends in the monitoring data over the life of the development; (f) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies.; and (g) describe what measures will be implemented over the next calendar year to improve the environmental performance of the development. | 5 |
| D16 | Noise, blast and/or air quality monitoring under this consent may be undertaken at suitable representative monitoring locations instead of at privately-owned residences or other locations listed in Part B, providing that these representative monitoring locations are set out in the respective management plants. | 4.2 |

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| D17 | <p>Before the commencement of construction until the completion of all rehabilitation required under this consent, the Applicant must:</p> <p>(a) make the following information and documents (as they are obtained, approved or as otherwise stipulated within the conditions of this consent) publicly available on its website:</p> <ul style="list-style-type: none"> (i) the documents referred to in condition A2(c) of this consent; (ii) all current statutory approvals for the development; (iii) all approved strategies, plans and programs required under the conditions of this consent; (iv) the proposed staging plans for the development if the construction, operation or decommissioning of the development is to be staged; (v) minutes of CCC meetings; (vi) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent; (vii) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; (viii) a summary of the current phase and progress of the development; (ix) contact details to enquire about the development or to make a complaint; (x) a complaints register, updated monthly; (xi) the Annual Reviews of the development; (xii) audit reports prepared as part of any Independent Environmental Audit of the development and the Applicant's response to the recommendations in any audit report; (xiii) any other matter required by the Planning Secretary; and <p>(b) keep such information up to date, to the satisfaction of the Planning Secretary.</p> | 5.6 |

B2 Environmental Protection Licence (EPL) 12894 Conditions

| EPL Conditions | | | | Section of Document |
|---|-------------------------------|----------------------------|---|---------------------|
| P1 Location of Monitoring Points and Areas | | | | 4.2 |
| P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and / or the setting of limits for the emission of pollutants to the air from the point. | | | | |
| Air | | | | |
| EPA identi- fication no. | Type of Monitoring Point | Type of Discharge Point | Location Description | |
| 5 | Meteorological Monitoring | | Weather Station North (WSN) defined as "Monitoring Point 5 in plan titled "Mangoola Coal EPL 12894 - HRSTS discharge point, air quality, blast, surface water and groundwater monitoring locations" dated 21/08/2017. EPA Reference Doc17/288912-02 | |
| 18 | Meteorological Monitoring | | Weather Station South (WSS), defined as "Monitoring Point 18 in plan titled "Mangoola Coal EPL 12894 - HRSTS discharge point, air quality, blast, surface water and groundwater monitoring locations" dated 21/08/2017. EPA Reference Doc17/288912-02 | |
| 19 | Particulate Matter Monitoring | | Monitoring Point 19 coordinates 279920 6426993 (Easting Northing) defined as "Monitoring Point 19 in plan titled "Mangoola Coal EPL 12894 - HRSTS discharge point, air quality, blast, surface water and groundwater monitoring locations" dated 21/08/2017. | |
| 20 | Particulate Matter Monitoring | | Monitoring point 20 at coordinates 285715 6421858 (Easting Northing) defined as "Monitoring Point 31 in plan titled "Mangoola Coal EPL 12894 - HRSTS discharge point, air quality, blast, surface water and groundwater monitoring locations" dated 21/08/2017. | |
| These points are: | | | | |
| <ul style="list-style-type: none">Point 5, meteorological monitoring at Wybong Road (Weather Station North, WSN);Point 18, meteorological monitoring south of the Coal Handling and Preparation Plant (WSS);Point 19, Dust monitoring north-west of the site; andPoint 20, Dust monitoring south-east of the site; | | | | |

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| <div><p>M2 Requirement to monitor concentration of pollutants discharged</p><p>M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:</p><p>M2.2 Air Monitoring Requirements</p><div><p>POINT 19,20</p><table><tr><th>Pollutant</th><th>Units of measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>PM10</td><td>micrograms per cubic metre</td><td>Continuous</td><td>Special Method 1</td></tr></table></div><p>Note: Special Method 1 requires the Licensee to undertake the monitoring of PM10 concentration in strict accordance with the manufacturer's operating manual supplied with the continuous monitoring equipment and titled "E-Sampler-9800 Particulate Monitor Operation Manual Revision K", or any updated version as published by the maufacturer.</p></div> | Pollutant | Units of measure | Frequency | Sampling Method | PM10 | micrograms per cubic metre | Continuous | Special Method 1 | 4.2 |
| Pollutant | Units of measure | Frequency | Sampling Method | | | | | | |
| PM10 | micrograms per cubic metre | Continuous | Special Method 1 | | | | | | |
| <div><p>M3 Testing methods – concentration limits</p><p>M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:</p><div><div>a)</div><div>any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or</div></div><div><div>b)</div><div>if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or</div></div><div><div>c)</div><div>if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.</div></div><p>Note: <i>The Protection of the Environment Operations (Clean Air) Regulation 2010</i> requires testing for certain purposes to be conducted in accordance with test methods contained in the publication “Approved Methods for the Sampling and Analysis of Air Pollutants in NSW”.</p></div> | 4.1 | | | | | | | | |

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| EPL Conditions | | | | | Section of Document |
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| M4 Weather monitoring M4.1 For each monitoring point specified in the table below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sample method, units of measure, averaging period and sample at the frequency, specified opposite in the columns: Point 5 and Point 18 | | | | | 4.2 |
| Parameter | Units of Measure | Frequency | Averaging Period | Sampling Method | |
| Rainfall | mm | Continuous | 1 hour | AM-4 | |
| Wind speed @ 10 metres | m/s | Continuous | 15 minutes | AM-2 & AM-4 | |
| Wind direction @ 10 metres | 0 | Continuous | 15 minutes | AM-2 & AM-4 | |
| Temperature @ 2 metres | 0C | Continuous | 15 minutes | AM-4 | |
| Temperature @ 10 metres | 0C | Continuous | 15 minutes | AM-4 | |
| Sigma theta @ 10 metres | 0 | Continuous | 15 minutes | AM-2 & AM-4 | |
| Solar radiation | W/m2 | Continuous | 15 minutes | AM-4 | 4.2 |
| Additional requirements - siting - measurement | | | | AM-2 & AM-4 AM-2 & AM-4 | |
| M8 Other monitoring and recording conditions M8.6 Requirement to Monitor Particulate Matter The Licensee must record the average PM ₁₀ concentration at Monitoring Points 19 and 20 at intervals of 10 minutes. This data must be made available upon request by any Authorised Officer of the EPA who asks to see them. | | | | | 4.2 |
| O3 Dust control O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises. O3.2 Activities occurring in or on the premises must be carried out in a manner that will minimise the generation or emission from the premises, of wind-blown or traffic generated dust. O3.3 All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emissions from the premises, of wind-blown or traffic generated dust. | | | | | 3 |

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