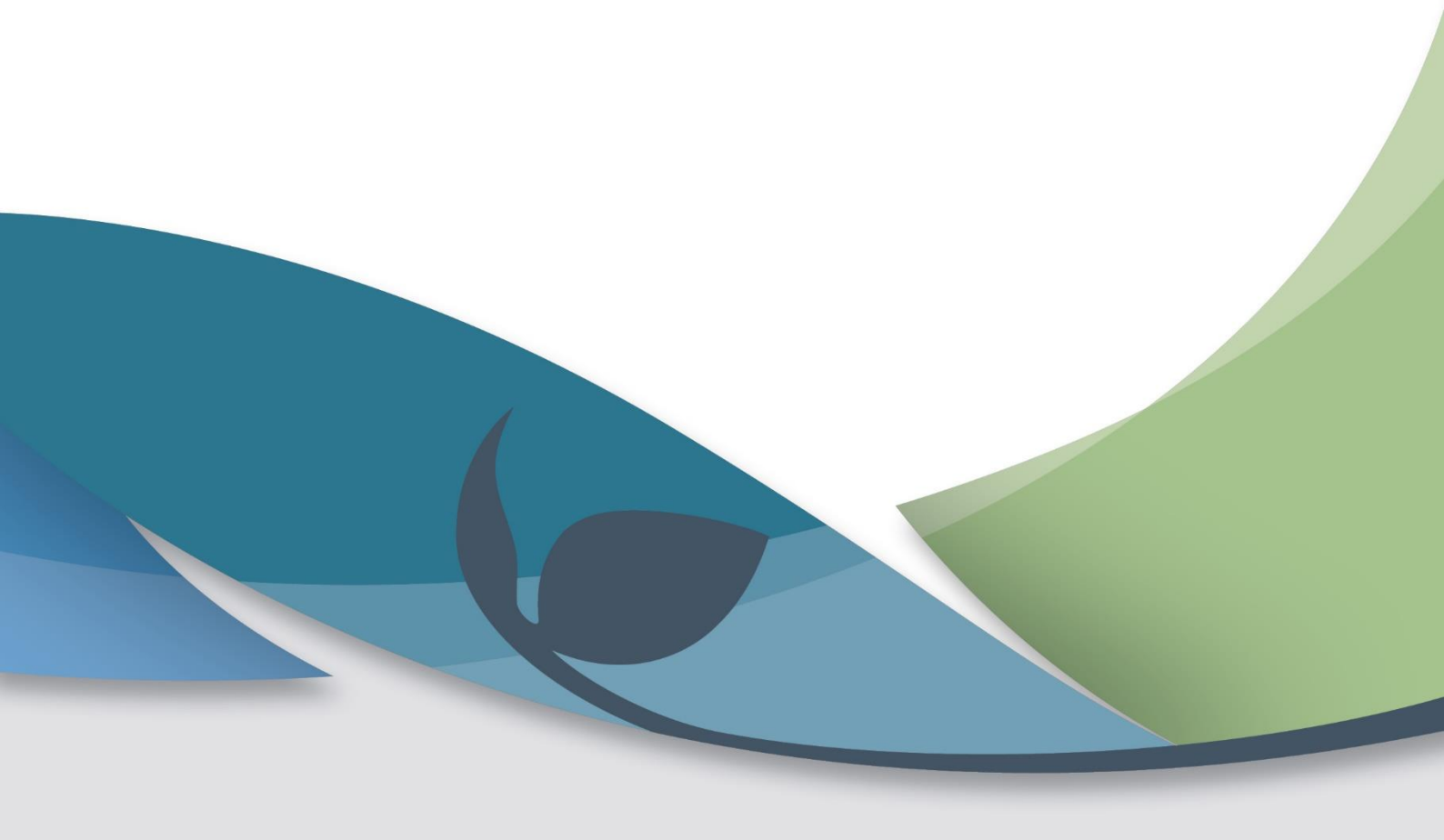
CULLEN VALLEY MINE

AIR QUALITY MANAGEMENT PLAN

for Shoalhaven Coal Pty Ltd

20 April 2022



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1. INTRODUCTION

1.1 BACKGROUND

Cullen Valley Mine (CVM) is located near Cullen Bullen in the Western Coalfields of NSW, approximately 30 km north-west of Lithgow (see Figure 1). Underground mining commenced at CVM (formerly Tyldesley Colliery) around 1904 and continued up until the 1960s when the workings were abandoned. Early open cut operations were conducted on the site between 1948 and 1953.

The current development consent for CVM (DA 200-5-2003) was granted by the Department of Infrastructure and Planning (now the Department of Planning and Environment (DPE)) in August 2004 for a period of 21 years. The conditions of DA 200-5-2003 were subsequently modified in December 2004 to allow for the transportation of product coal from CVM to domestic destinations other than Mount Piper Power Station (MPPS). The conceptual layout of the site as approved under DA 200-5-2003 is shown on **Figure 2**.

Mining of coal at CVM under DA 200-5-2003 commenced in May 2000 using open cut methods following a four-month construction phase and continued until the site was placed in Care and Maintenance in early 2013.

Shoalhaven Coal Pty Ltd (trading as Castlereagh Coal Pty Ltd (Castlereagh Coal)) purchased CVM in May 2015 and has operated the mine under Care and Maintenance since that time. Castlereagh Coal intends to recommence open cut coal mining operations at CVM in early 2022 within the existing disturbance area approved under DA 200-5-2003. The operations are planned to recover approximately 450,000 tonnes of coal and to carry out associated rehabilitation activities, which are scheduled to be undertaken over a period of approximately 9 months. Coal produced from these operations will be transported by road to domestic destinations as currently approved.

1.2 DOCUMENT PURPOSE & SCOPE

This Air Quality Management Plan (AQMP) document has been prepared to describe the operational management of air quality aspects, impacts and performance at CVM. This revision of the AQMP has been prepared in accordance with the requirements of DA 200-5-2003 for use by Castlereagh Coal during the recommencement of mining operations on site.

Other management documents that should be read in conjunction with this AQMP include the:

- CVM Environmental Management Strategy; and
- CVM Environmental Monitoring Program (EMP).

1.3 DOCUMENT OBJECTIVES

The objectives of this document are to:

- Provide an overview of the air quality standards that apply to CVM;
- Identify potential sources of air quality impacts from CVM on local air quality;
- Describe air quality management measures that will be implemented to minimise air quality impacts from site operations; and
- Outline procedures for response to community complaints and the communication of air quality exceedances to relevant stakeholders.

Statutory requirements from DA 200-5-2003 that relate to this AQMP and where they are addressed are provided in **Table 1**.

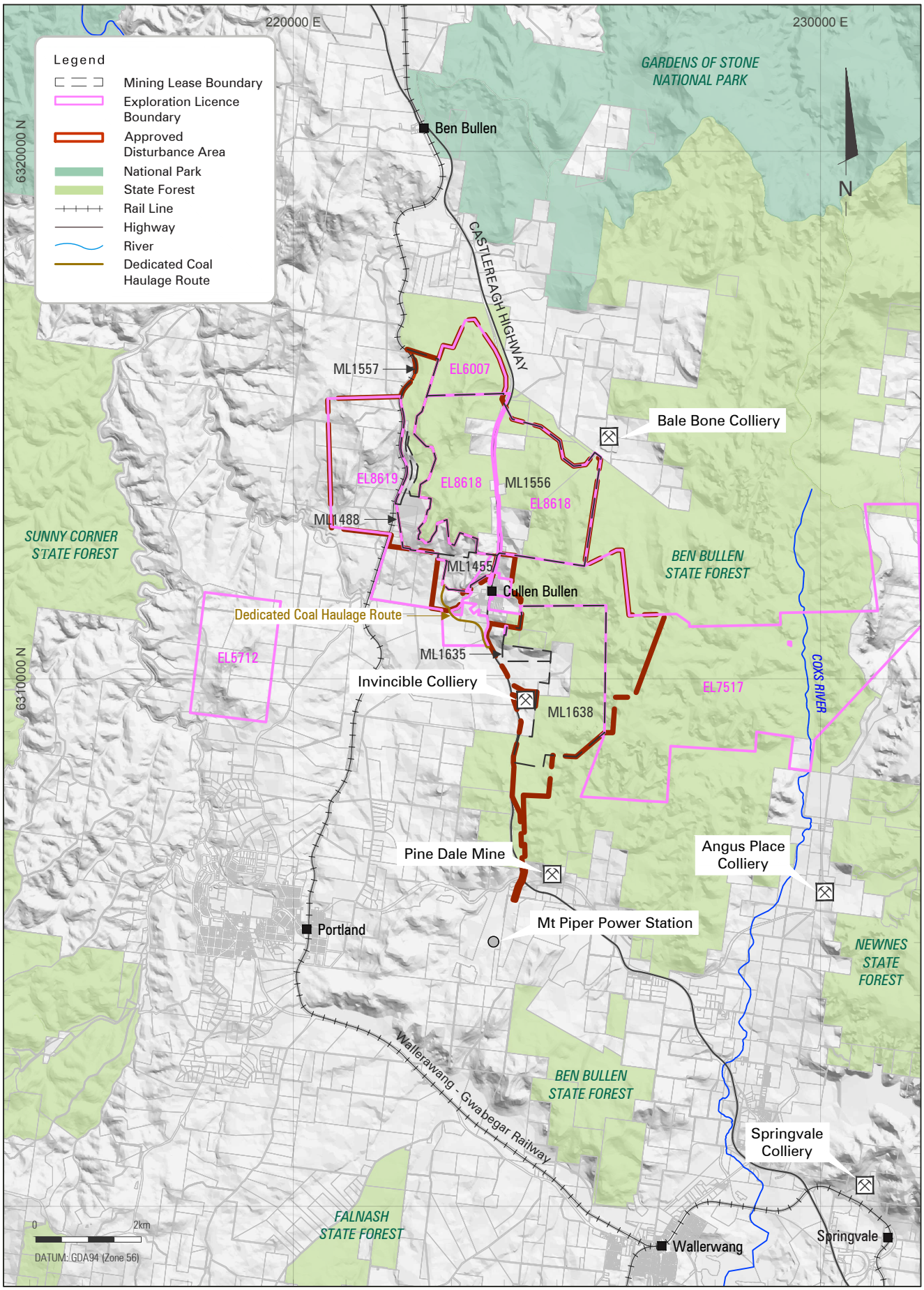
Table 1 AQMP Requirements

DA 200-5-2003 Condition	Requirement	Where Addressed
Schedule 4, Condition 20	The Applicant shall ensure that the air pollution generated by the development does not cause any additional exceedances of the criteria listed in Tables 6, 7, and 8 at any privately owned land.	**2.1**
Schedule 4, Condition 21	Activities at the premises must be carried out in a manner that will minimise emissions of dust from the site.	**2, 3**
Schedule 4, Condition 22	The Applicant shall ensure that all loaded trucks leaving the site are covered at all times.	**3**
Schedule 4, Condition 23	The Applicant shall regularly monitor the development for visible dust; and if visible dust is being generated on-site, then the Applicant shall relocate, modify, and/or stop mining operations to minimise adverse dust impacts occurring on any privately-owned land.	**3**
Schedule 4, Condition 24	The land acquisition criteria for air pollution generated by the development are listed in Tables 9, 10, and 11.	**2.1, 4.2**
Schedule 4, Condition 25	The Applicant shall monitor the air quality impacts of the development at representative locations around the site, using the specified averaging period, frequency, and sampling method in Table 12 to the satisfaction of DEC and the Director-General.	**2.2,** CVM EMP
Schedule 4, Condition 26	Within 3 months of the date of this consent, the Applicant shall prepare, and then implement, an Air Quality Monitoring Program for the development, in consultation with DEC, and to the satisfaction of the Director-General.	**4.1** CVM EMP
Schedule 5, Condition 1	If the results of the monitoring required in Schedule 4 identify exceedances of the air quality and/or noise limits/criteria in Schedule 4, then the Applicant shall notify the Director-General and relevant landowner/s in writing about these exceedances, and provide quarterly monitoring results to these parties until the monitoring results show that the development is complying with the relevant air quality and/or noise limits/criteria.	**4.2**

1.4 DOCUMENT STRUCTURE

This document is structured as follows:

- **Section 1** introduces CVM and outlines the purpose, scope and objectives of this AQMP;
- **Section 2** outlines air quality impact standards that apply to CVM;
- **Section 3** describes the management and mitigation measures that will be implemented to minimise air quality impacts from CVM;
- **Section 4** outlines stakeholder engagement completed in the preparation of this AQMP and procedures for the response to air quality incidents and complaints;
- **Section 5** provides an overview of the roles and responsibilities of CVM personnel in relation to air quality management;
- **Section 6** outlines the reporting requirements for this AQMP; and
- **Sections 7** and **8** provide a list of refence documents and abbreviations used in this AQMP.

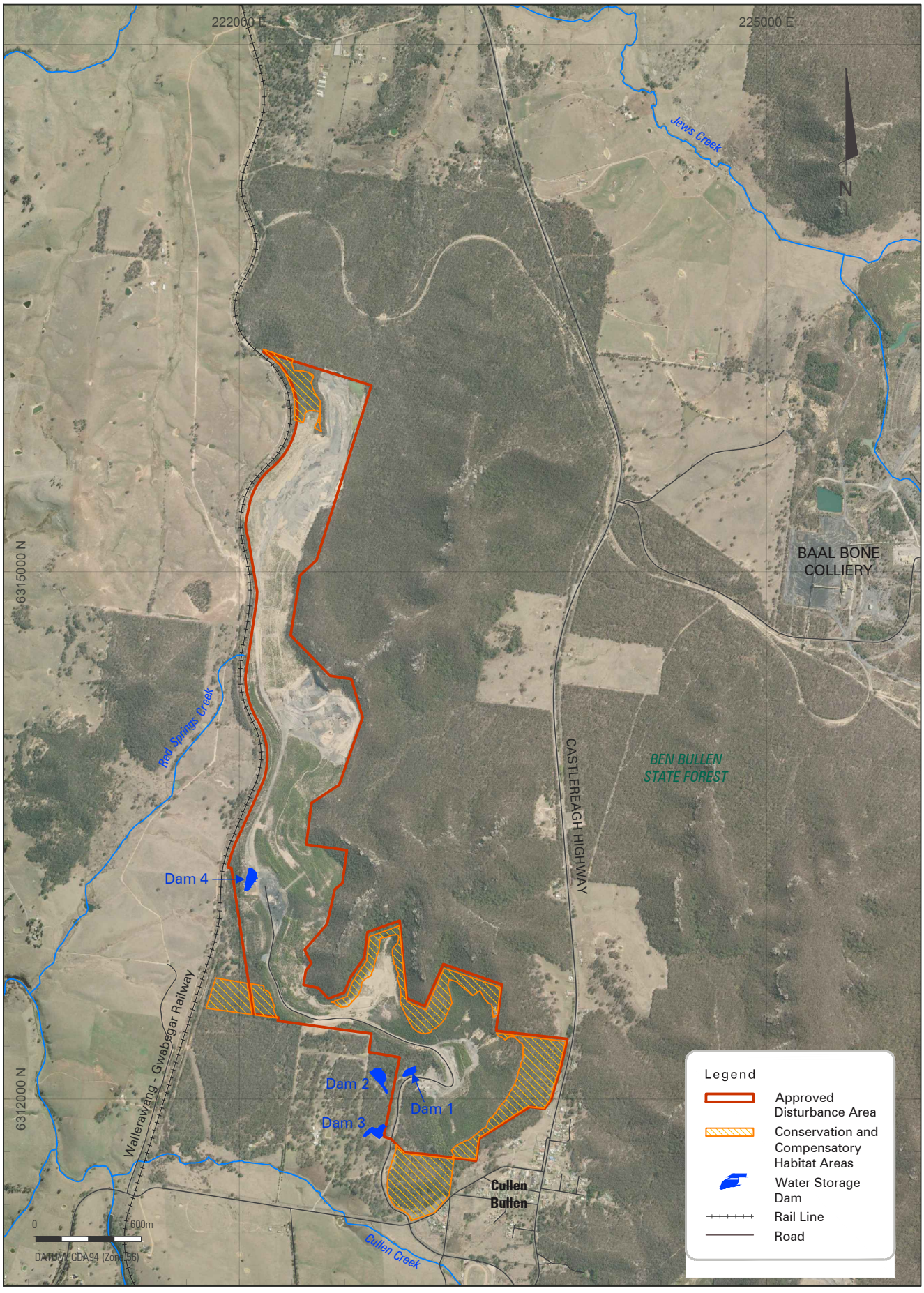


JBA 2187 CVM - F 01 REGIONAL LOCALITY (12/04/2022)

CULLEN VALLEY MINE

Regional Locality

FIGURE 1



JBA 2187 CVM - F 00 CONCEPTUAL PROJECT LAYOUT (9/02/2022)

CULLEN VALLEY MINE

Conceptual Project Layout

FIGURE 2

2. AIR QUALITY MONITORING

2.1 AIR QUALITY STANDARDS

Table 2 summarises the air quality limits for privately owned land that are specified under DA-200-5-2003. The air quality goals relate to the total dust burden in the air and not solely the dust generated from CVM operations. In other words, some consideration of background levels needs to be made when using these goals to assess impacts. Privately owned land surrounding the CVM (to which these criteria relate) is illustrated in **Figure 3**.

Table 2 Limits for Particulate Matter

Pollutant	Averaging period	Criterion
Long term impact assessment criteria for particulate matter		
Total Suspended Particulate (TSP) matter	Annual	90 µg/m³
Particulate matter < 10µm (PM10)	Annual	30 µg/m³
Short term impact assessment criterion for particulate matter		
Particulate matter < 10µm (PM10)	24 hour	50 µg/m³

In addition to health impacts, airborne dust also has the potential to cause nuisance impacts by depositing on surfaces. In order to control dust emissions from a site, criteria for dust fallout levels have also been provided by DA 200-5-2003, as specified in **Table 3**.

Table 3 Long Term Impact Assessment Criteria for Deposited Dust

Pollutant	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited Dust	Annual	2 g/m² month	4 g/m² month

Estimated dust emission totals were modelled as part of the *Cullen Valley Mine Lease Extension Project* (IEC, 2003) (EIS). These estimates assumed some control of dust emissions, which are included in the list of mitigation measures described in **Section 3**.

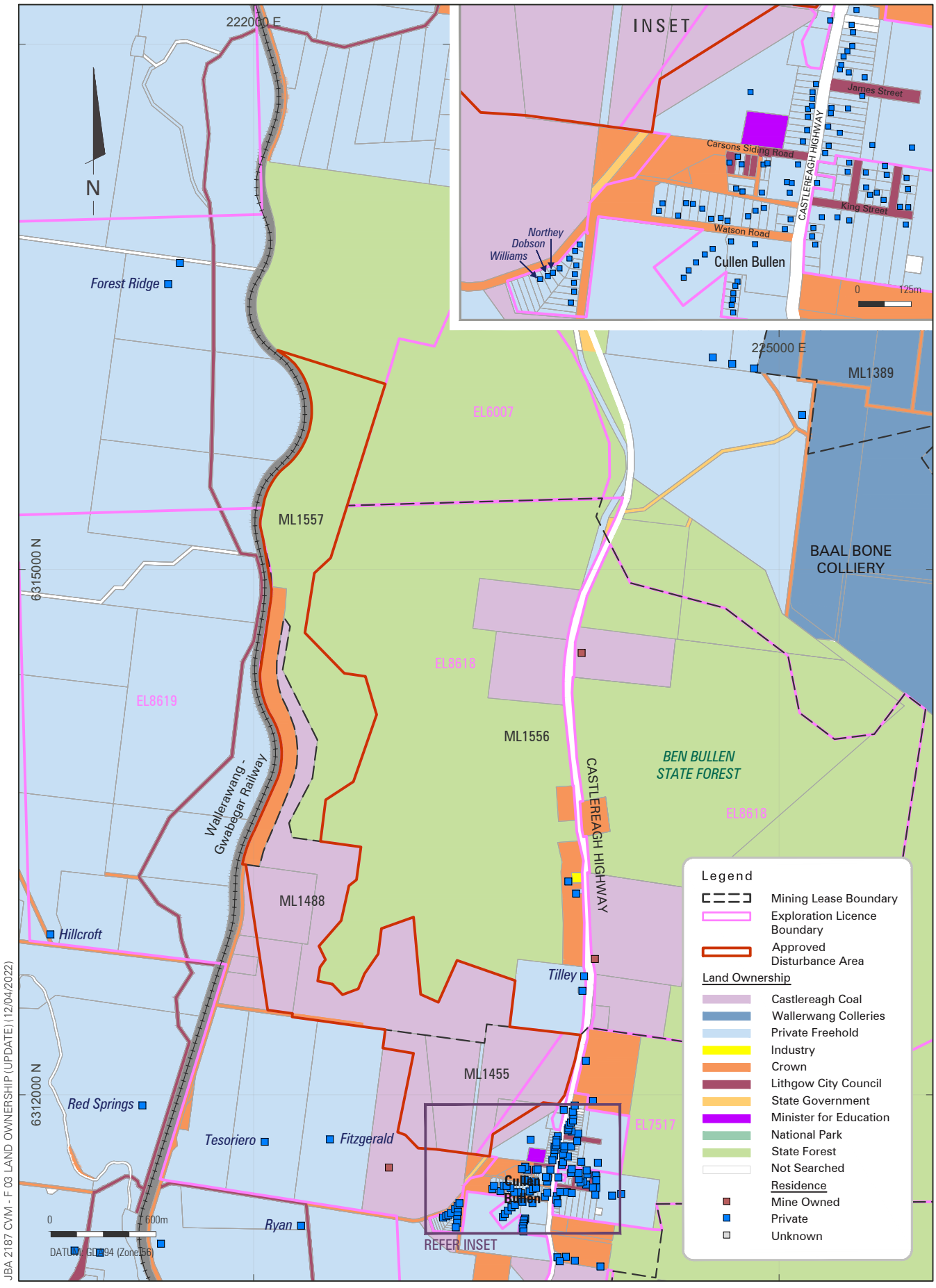
2.2 AIR QUALITY MONITORING PROGRAM

The CVM air quality monitoring network and program required under Schedule 6, Conditions 3 - 4 of DA 200-5-2003 is described in the CVM EMP. A brief overview of the air quality monitoring program is provided below.

CVM operates and manages an air quality monitoring network in accordance with Schedule 4, Condition 20 of DA-200-5-2003, to ensure the air quality impacts generated by the development do not cause additional exceedances of the criteria (as outlined within **Section 2.1** above) at any neighbouring privately owned land. This air quality monitoring network as shown on **Figure 4** and as listed in **Table 4** is comprised of the following sites:

- One High Volume Air Sampler (HVAS) (located at Office); and
- Five Depositional Dust Gauges (located at Doble, Crane, Office, Hillcroft and Railway).

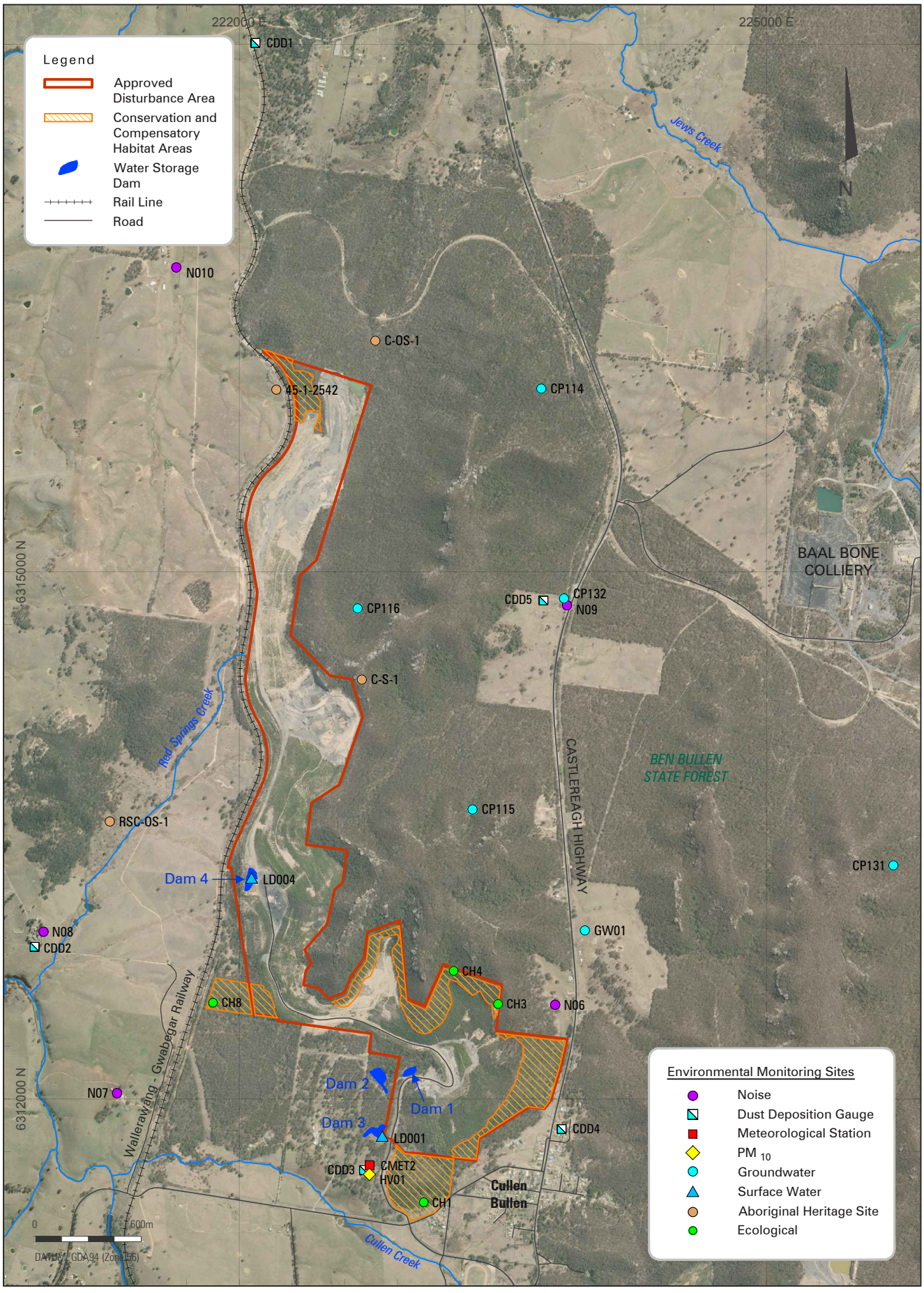
In accordance with Schedule 4, Condition 28 of DA 200-5-2003, Castlereagh Coal operates a Weather Station which is located at the Office. The Weather Station was installed in 2018. Castlereagh Coal will seek approval for the location and setup of the Weather Station from the EPA and DPE in accordance with Schedule 4, Condition 28 of DA 200-5-2003.



CULLEN VALLEY MINE

Land Ownership

FIGURE 3



JBA 2187 CVM - F 02 ENV MONITORING PLAN (9/02/2022)

CULLEN VALLEY MINE

Environmental Monitoring Program

FIGURE 4

All air quality monitoring equipment at CVM is operated and maintained in accordance with the requirements provided in Approved Methods for Sampling of Air Pollutants in New South Wales. In addition, monitoring is conducted in a manner consistent with the Australian Standards and EPA (formerly DECC) requirements as listed in **Table 5**.

Table 4 Air Quality Monitoring Locations

Operation	Monitoring Unit Location	Reference Number	Parameter Sampled	Easting	Northing
CV	DM Railway	CDD01	Depositional Dust	222099	6317974
CV	DM Hillcroft	CDD02	Depositional Dust	220846	6312847
CV	DM Office	CDD03	Depositional Dust	222716	6311599
CV	DM Cranes	CDD04	Depositional Dust	223834	6311813
CV	DM Doble	CDD05	Depositional Dust	223732	6314809
CV	Cullen Valley Office	HV01	PM10	222720	6311590
CV	MET	CMET2	Meteorological Parameters, including lapse rate, rainfall, sigma theta, temperature (at 2 and 10 m), total solar radiation, wind direction and wind speed	222720	6311590

Table 5 Air Quality Monitoring Standards and Methods

Parameter	Australian Standard (AS)	Approved Method (DEC 2005)	Monitoring Frequency
Siting of Units	*AS 2922-1987 (Ambient Air – Guide to the Siting of Sampling Units)*	AM-1	N/A
Total Suspended Particulates (TSP)	*AS 2724.3-1984 (Determination of Total Suspended Particulates (TSP) – High Volume Sampler Gravimetric Method)*	AM-15	Six-daily
Particulate Matter < 10µm (PM10)	*AS 3580.9.6-1990 (Ambient Air - Determination of Suspended Particulate Matter PM10 - High Volume Sampler with Size Selective Inlet Gravimetric Method)*	AM-18	Six-daily
Deposited Dust	*AS 3580.10.1-1991 (Methods for Sampling and Analysis of Ambient Air – Determination of Particulates – Deposited Matter Gravimetric Method)*	AM-19	Monthly

Further to the air quality monitoring network, Castlereagh Coal conducts regular visual inspections to ensure that operations are not generating visible dust at the site. In accordance with Schedule 2, Condition 23 of DA 200-5-2003, if visible dust is observed, Castlereagh Coal will either alter mining operations in order to appropriately manage potential dust impacts to neighbouring privately-owned land (referring to the guidance notes in EPA (2019) as required).

For further information, please refer to the CVM EMP.

3. AIR QUALITY MANAGEMENT

3.1 AIR QUALITY CONTROLS

Predicted air quality impacts were modelled as part of the planning process and included in the EIS (IEC, 2003). The results of the EIS modelling indicated that CVM operations would be able to comply with the relevant air quality criteria if appropriate controls were put in place.

The management controls described in **Table 6** will be implemented during CVM operations ensure that air quality emissions and offensive odours from the site are minimised. The aim of these control procedures is to minimise the emission of dust from the main sources identified in the EIS, which are generally related to:

- Windblown dust from exposed areas; and
- Dust generated by mining and processing activities.

Table 6 Air Quality Management Measures

Source	Control Procedures
Wind Blown Dust and Controls	
Areas disturbed by mining	• Disturb only the minimum area necessary for mining. • Reshape, topsoil and rehabilitate completed overburden emplacement areas as soon as practicable after the completion of overburden dumping. • Daily assessment of the meteorological conditions should be made to identify conditions which would be unfavourable in terms of dust levels off site. • Undertake regular visual inspections of operational areas to assess prevailing weather conditions and sources of visible dust. Make operational changes if required to ensure dust emissions are being managed appropriately (referring to the guidance notes in EPA (2019) as required).
Coal Handling Areas	• Maintain coal-handling areas in a moist condition using water carts to minimise windblown and traffic generated dust.
Coal Stockpiles	• Maintain water sprays on product coal stockpiles and use sprays to reduce dust emissions from stockpile areas.
Mining Generated Dust and Controls	
Trucks	• All trucks leaving site carrying coal will be covered at all times.
Haul Road Dust	• Water all roads and trafficked areas using a water cart to minimise the generation of wheel-generated dust. • Speeds are limited to 60 km/hr on internal haul roads to minimise wheel-generated dust emissions.
Private Haul Road	• The site access road and the private haul road bypassing Cullen are sealed and will not require any additional dust controls. • Road registered trucks transporting product coal from site will have their loads covered to minimise dust emissions.
Topsoil Stripping	• Water all access tracks used by topsoil stripping equipment during their loading and unloading cycle. • If possible, topsoil should be stripped between three days and two weeks following rain when subsoil moisture is elevated but not sodden.

Source	Control Procedures
	• Topsoil stockpiles will be shaped and sown with a cover crop to minimise dust emissions.
Crushing Plant	• The crushing plant is fitted with water sprays. • To be sited in a designated area. • Operated with enclosed screens to reduce dust emissions
Plant and Equipment	• All plant and equipment installed at the mine will be maintained and operated in a proper and efficient condition.
Offensive Odours	
Subsurface heating	• Observed areas of subsurface heating are managed in accordance with the PoW approved by the Resources Regulator, including (but not limited to): – Backfilling/sealing any visible surface cracks observed to be the cause of heating with concrete; – Active Excavation: including salvage of topsoil materials, excavation of heated materials, backfill and compact with inert materials and replace topsoil and seed for revegetation; – Irrigation trial: entailing the irrigation of heating areas with water to extinguish heating.
Spontaneous Combustion	• Placement of ROM and product coal in appropriately designed stockpiles to minimise exposure to oxygen; • Selectively handling and management of any materials identified to be particularly prone to spontaneous combustion; • Monitor and immediately respond to any occurrence of spontaneous combustion, including (but not limited to) cooling of materials with water, excavation and burial of heated materials.
Self heating of Potentially Acid Forming (PAF) Materials	• Selectively handle and manage PAF materials to minimise the long-term exposure to oxygen by including measures such as: – Deep burial within the mining area below the post-mining groundwater table and cover with inert overburden materials (encapsulate within clay materials, if required); – Burial within dedicated PAF containment cells which are encapsulated with clay materials.

3.1.1 Offensive Odours

In accordance with Condition 27 of Schedule 4 of DA 200-5-2003 and Section 129 of the *Protection of Environment Operations Act 1997* (POEO Act), the CVM is required to ensure no offensive odours are emitted from site.

The primary risk for offensive odours being released from the CVM is in relation to the subsurface heating of previously mined and rehabilitated areas. Subsurface heating has previously been observed in rehabilitated areas and has been subject to numerous management practices for over a decade. Castlereagh Coal has developed a Plan of Works (PoW) which establishes a program to contain and extinguish the cause of the subsurface heating and to continually monitor and actively address any areas of subsurface heating on a continual basis. In addition to this PoW, Castlereagh Coal has recently developed a trial program in consultation with the Department of Regional NSW - Resources Regulator (Resources Regulator) which entails the irrigation of areas observed to experience subsurface heating. The outcome of this trial may result in amendments and updates to the PoW which has been implemented at CVM.

Experience to date at CVM has demonstrated that the stockpiled coal and in-situ coal resources have a low propensity to spontaneously combust. However, to ensure that it is not relevant to the subsurface heating issue, a study was undertaken to supplement the existing knowledge of the spontaneous combustion propensity of the coal and overburden in the backfill. The results detailed in a report by RGS Environmental (May 2013) have confirmed that the in- situ coal is 'low-risk' for spontaneous combustion. This has provided a more complete understanding of the very low potential for spontaneous combustion to be a contributing factor to the initiation and spread of subsurface heating at CVM.

Proactive management measures are implemented during operations to control the potential for spontaneous combustion. These measures generally involve reducing the interaction of potentially reactive materials with water and oxygen by appropriate dumping practices, profiling and capping any materials likely to heat, and reducing the time coal faces are exposed prior to mining. Various corrective actions are also implemented in the event that spontaneous combustion is observed at the CVM.

Self-heating of Potentially Acid Forming (PAF) materials also has the potential to generate odours. Should such materials be identified, they are selectively handled and managed to avoid the long term exposure to oxygen, including emplacing PAF material either in pit below the predicted post-mining groundwater table level, or within dedicated PAF containment cells which are encapsulated with clay materials.

3.2 GREENHOUSE GAS MANAGEMENT

In accordance with Schedule 4, Condition 60 of DA 200-5-2003, Castlereagh Coal is committed to implementing reasonable and feasible measures to minimise greenhouse gas emissions from the CVM operations.

During care and maintenance activities, greenhouse gas emissions from CVM have been minimal and generally limited to a small fleet of vehicles/equipment which are utilised for care and maintenance works and minor earth works associated with erosion and sediment control and sub-surface heating management.

The recommencement of operations at the CVM will result in greenhouse gas emissions from the following sources:

- Scope 1 Emissions (i.e. directly as a result of Castlereagh Coal's activities), including:
    - Fugitive emissions of carbon dioxide and methane released from the coal seams and overburden rock materials when the coal is mined; and
    - Combustion of fuels including diesel, petrol, greases and oils which are utilised for mining equipment, light vehicles and stationary diesel powered equipment.
- Scope 2 Emissions (i.e. emissions from other sources utilised by CVM), including:
    - Emissions resulting from the generation of electricity used onsite.
- Scope 3 Emissions (i.e. those emissions from other sources which are not utilised by CVM), including:
    - The transport of consumables to site, e.g. diesel and electricity;
    - The transport of the product coal to domestic coal fired power stations; and
    - The final use of the product being the combustion of the coal in power generating facilities.

Castlereagh Coal has the ability to directly minimise the Scope 1 and Scope 2 greenhouse gas emissions generated by the development. Scope 3 emissions are managed by other parties whom consider these emissions as Scope 1 emissions.

Castlereagh Coal implements the following mitigation and management measures to maximise energy efficiency and to minimise greenhouse gas emissions from its activities at CVM:

- Regularly maintaining operational equipment fleet to ensure it operates in a productive and efficient manner;

- Monitoring of fuel usage and efficiency of equipment fleet;
- Mine plan optimisation and scheduling of operations to maximise efficiency and reduce vehicle kilometres travelled;
- Operators are trained to switch off engines when not in use;
- Equipment fleet is fitted with adequate pollution reduction in accordance with the relevant legislative requirements;
- Monitoring site electricity consumption across operations and investigate avenues to minimise electricity consumption;
- Awareness training for staff on ways to minimise energy usages to activities;
- Minimising the production of waste generated on-site; and
- Use of efficient outdoor lighting systems.

CVM methane emissions are calculated and converted to a carbon dioxide equivalent tonnage (t CO_2-e) to provide a Greenhouse Gas emission inventory for the site. The formulaic method of calculation used is based on National Pollutant Inventory and Australian Greenhouse Office calculation standards (latest version). Castlereagh Coal inputs for greenhouse gas emission calculations include monthly breakdowns for electricity usage, diesel usage, and methane production (calculated using the National Greenhouse and Energy Reporting Technical Guidelines (Department of Climate Change, 2008) from the monthly coal tonnage extracted). These inputs are included in a spreadsheet which calculates a carbon-dioxide equivalent value for each month of operations. Further details on the greenhouse gas monitoring is provided within the EMP.

Whilst the CVM has been in care and maintenance, external reporting of greenhouse gas emissions under the National Greenhouse and Energy Reporting Act 2007 (NGERs) was not required due to emissions remaining below the relevant reporting requirements. Castlereagh Coal will continue to monitor greenhouse gas emission for the CVM and if the requirement is triggered, will report on greenhouse gas emissions in accordance with the requirements of NGERs.

Castlereagh Coal is also required to report on greenhouse gas monitoring and management each year within the CVM Annual Review.

4. STAKEHOLDER ENGAGEMENT

4.1 AQMP CONSULTATION

Correspondence with regulatory agencies relating to this revision of the AQMP is included as **Appendix A**.

4.2 EXTERNAL COMMUNICATIONS

4.2.1 Community Complaints

All community complaints received by CVM are recorded in the Castlereagh Coal Complaints Register. The register is regularly maintained and published on the Castlereagh Coal website to document all complaints received and follow-up actions taken by CVM personnel in response.

Further detail on the management of community complaints is provided within Section 6.1.3 of the CVM EMS.

4.2.2 Incidents and Non-Compliances

Schedule 5, Condition 1 of DA 200-5-2003 requires CVM to report exceedances of air quality criteria listed in this AQMP to the DPE and relevant landholders and provide quarterly monitoring results to these parties until further results show compliance with the relevant criteria.

Any reporting of exceedances to the relevant impact criteria will outline the following:

- The date, time, and nature of the exceedance/incident;
- The cause (or likely cause) of the exceedance/incident;
- Reference to the development consent condition which is considered to be non-compliant and the reasons for it;
- What action has been taken to date; and
- Describe the proposed measures to address the exceedance/incident and the proposed timeframe for completion.

Any incident will be reported to DPE and other relevant regulatory authorities immediately after becoming aware of the incident. Any non-compliance must be notified to DPE by the operator within seven days of becoming aware of the non-compliance. These notifications for incidents or non-compliances will be submitted in writing via the DPE's Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident, as outlined above.

This condition also provides the procedures to be followed in responding to landholder requests for independent monitoring of noise and air quality impacts or during any land acquisition process that may be required or requested by community landholders.

In the event that a landowner considers that CVM is exceeding the 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 5, Condition 2 of DA 200-5-2003.

5. ROLES & RESPONSIBILITIES

Table 7 outlines the key roles and responsibilities for CVM personnel in relation to this AQMP.

Table 7 AQMP Roles and Responsibilities

Ref	Control Measure	Responsibility	Timing
1.	• Review and approve this AQMP and provide adequate resources for its implementation on site.	Operations Manager	Ongoing
2.	• Complete regular inspections of the site to confirm that adequate dust management measures are in place to minimise potential impacts. • Modify or cease operations if required to reduce air quality impacts from CVM. • Assist the Environment Officer with investigations into air quality incidents, non-compliances and complaints.	Mining Supervisor	Ongoing As required As required
3.	• Manage the implementation of this AQMP during CVM operations. • Respond to air quality complaints and maintain CVM Complaints Register. • Investigate and notify DPE and relevant landowner(s) of any air quality exceedances and incidents and prepare associated reporting. • Notify DPE and coordinate the required actions in the case of a landowner request for an Independent Review. • Facilitate regular training of CVM personnel in the requirements of this AQMP • Document air quality monitoring and management in the Annual Review • Document greenhouse gas monitoring and management in the Annual Review • Complete review of this AQMP to ensure consistency with current CVM operations and industry standards and procedures.	Environment Officer	Ongoing Ongoing As required As required Annual Annual Annual Five Yearly
4.	• Comply with the requirements of this AQMP. • Report any activities which are generating elevated dust levels to the equipment operator and/or Mining Supervisor.	All CVM personnel	Ongoing

6. REVIEW & REPORTING

6.1 REPORTING

6.1.1 Annual Reporting

In accordance with Schedule 6, Condition 5 of DA 200-5-2003, CVM will continue to submit an Annual Review to DPE and relevant agencies which includes results of monitoring in this AQMP. Information to be provided in the Annual Review will include:

- A detailed summary of the air quality monitoring results on the development during the year;
- A detailed analysis of these monitoring results against the relevant impact assessment criteria, monitoring results from previous years, and predictions made in the EIS;
- Identification of any trends in the monitoring over the life of the development;
- Identification of any non-compliances during the reporting period; and
- A description of what management actions were or are being taken to ensure compliance with relevant planning criteria.

A copy of each CVM Annual Review is provided to DPE, Department of Regional NSW-RR, EPA, LCC and the representatives of the mine Community Consultative Committee (CCC).

6.1.2 Stakeholder Reporting

In accordance with Schedule 6, Condition 8 of DA 200-5-2003 CVM has established a CCC to oversee the environmental performance of the mine. While in operation, the CCC will meet at least twice a year and will review and provide advice on environmental performance including this document, monitoring results, audit reports or complaints.

6.2 AUDITING

In accordance with Schedule 5, Condition 6 of DA 200-5-2003, Castlereagh Coal is required to commission an Independent Environmental Audit within 2 years of the date of consent, and every five years thereafter, for submission to DPE, unless otherwise approved. This audit report is required to consider the effectiveness of the AQMP and will provide environmental management advice to ensure its ongoing effectiveness.

6.3 REVIEW

This AQMP will be reviewed on at least a five yearly basis to ensure that it remains consistent with operations at CVM and in accordance with general industry standards and procedures. Reviews will consider the need to modify the AQMP associated management measures in place at CVM. The AQMP will also be reviewed (and if necessary, updated) in response to:

- Relevant findings from Independent Environmental Audits;
- Findings from investigations of community complaints or monitoring non-compliances relating to air quality impacts; and
- Directions from regulatory agencies.

Approval of any major amendments to this AQMP will be sought from the Secretary of DPE and other stakeholders, as required under DA 200-5-2003.

7. REFERENCES

Castlereagh Coal (2022) *Cullen Valley Mine Environmental Management Strategy*.

Castlereagh Coal (2022) *Cullen Valley Mine Environmental Monitoring Program*.

International Environmental Consultants (2003) *Cullen Valley Mine Lease Extension Project Environmental Impact Statement*.

NSW Environment Protection Authority (2019) *Dust Assessment Handbook*.

8. ABBREVIATIONS

Abbreviation	Meaning
AQMP	Air Quality Management Plan
CCC	Community Consultative Committee
CVM	Cullen Valley Mine
DPE	Department of Planning and Environment
EIS	*Cullen Valley Mine Lease Extension Project Environmental Impact Statement* (IEC, 2013)
EMP	Environmental Monitoring Program
PM10	Particulate Matter with a diameter of 10 micrometres
TSP	Total Suspended Particulates

APPENDIX A

STAKEHOLDER ENGAGEMENT

DOC22/160662

Shoalhaven Coal Pty Limited

Via: Major Projects Planning Portal

9 March 2022

MISCELLANEOUS MANAGEMENT PLANS
Cullen Valley Mine - DA-200-5-2003

I refer to 3 draft management plans prepared for the Cullen valley Mine, received by the Environment Protection Authority (EPA) via the Major Projects Planning Portal, and your request for EPA comment on the draft plans.

The EPA encourages the development of Environmental Management Plans/Programs to ensure that proponents have determined how they will meet their statutory obligations and environmental objectives as specified by any Project/Development Approval and/or the conditions of an environment protection licence. Please note however that it is not the EPA's role to endorse these plans given the EPA sets conditions/criteria for environmental protection and management and therefore cannot be directly involved in the development of strategies to comply with such conditions/criteria.

The EPA has reviewed the following 3 plans submitted to the portal and provides some comments on each one below:

- Cullen Valley Mine: Site Water Management Plan (18 February 2022, Draft)
- Cullen Valley Mine: Air Quality Management Plan (11 February 2022, Draft)
- Cullen Valley Mine: Noise Management Plan (14 February 2022, Draft)

Site Water Management Plan

Section 2.3 of the Site Water Management Plan discusses dirty water flow across the mine site. Reference is made to the capacities of sediment dams 1 through to 4 and that 'Dam 1' is sized to contain runoff from a 1 in 10 year, 72-hour storm event (or 171 mm of rain). Little context is provided for these figures - i.e. is this capacity for the sub-catchment reporting to Dam 1 and what about the balance of the site including 'Dam 4'?

It is the EPA's preference that all dirty water management structures on mine and quarry sites are designed in accordance with the guidance provided in the publication "*Managing Urban Stormwater: Soils and Construction: Volume 2E Mines and Quarries*" (DECC 2008). This document refers to the

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need to ensure that sediment retention basins (in an environment like Cullen Valley Mine with 'Type F or D' soils) can hold a 95%, 5-day rainfall event (56.4 mm in the Lithgow district) and are pumped down within a 5-day period to restore dam capacities. The EPA notes that this document was not referenced in the preparation of this management plan.

The Site Water Management Plan contains little detail on how the 4 sediment dams are to be monitored with regard to maintaining capacities after rainfall events (section 2.3.2 states simply that '*Dam levels are to be checked on a monthly basis or after rainfall events…*' and that '*excess water is to be transferred …*'). The EPA would recommend that techniques such as depth gauge boards could be used to indicate the amount of freeboard available at a dam and how much water needs to be removed to restore dam capacity.

Air Quality and Noise Management Plans

The EPA notes that:

- both these plans refer to the Environmental Monitoring Program (EMP) for further details on the air and noise monitoring to be undertaken at the site. The EPA recommends that the relevant sections of the EMP are copied into the respective air and noise management plans for the sake of completeness.
- The Water Management Plan includes details of surface water monitoring (and not just referring the reader to the EMP).
- The EMP has not been forwarded to the EPA for review to date.

If you have any specific questions regarding this matter please contact Mr Andrew Helms on 6333 3805 or via e-mail at EPA.Southopsregional@epa.nsw.gov.au. For general enquiries to the EPA please call (02) 9995 5000 or e-mail info@epa.nsw.gov.au.

Yours sincerely

SHERIDAN LEDGER
A/Manager
Regulatory Operations Regional South

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Air Quality Management Plan: Schedule 4	**Sufficient (Yes/No/Partial)**	**Document reference and comment**	**Action Required**	**Company Response**
Condition 20: The Applicant shall ensure that the air pollution generated by the development does not cause any additional exceedances of the criteria listed in Tables 6, 7, and 8 at any privately owned land.	Yes	Air Quality Management Plan, Condition 20, Schedule 4, Page 12 and Page 13 incudes relevant criteria.	-	-
Condition 21: Activities at the premises must be carried out in a manner that will minimise emissions of dust from the site.	Yes	3.1 Air Quality Controls: Table 5 Air Quality Management Measures, commitment made to meet this obligation. .	-	-
Condition 22: The Applicant shall ensure that all loaded trucks leaving the site are covered at all times.	Yes	3.1 Air Quality Controls: Table 5 Air Quality Management Measures, commitment made to meet this obligation.	-	-
Condition 23: The Applicant shall regularly monitor the development for	Partial	2.2 Air Quality Monitoring Program "Five Depositional Dust Gauges (located at Doble,	The applicant is required to update AQMP to illustrate the location and coordinates of AQ monitoring locations and sensitive receptors/private lands.	Section 2.2 now reproduces the figure from the EMP (Figure 4) and provides a table of the air quality monitoring stations.

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visible dust; and if visible dust is being generated on-site, then the Applicant shall relocate, modify, and/or stop mining operations to minimise adverse dust impacts occurring on any privately-owned land.		Crane, Office, Hillcroft and Railway)". Further detail of coordinates can be provided showing location of the monitoring locations and proximity to private lands which will add clarity to the document.	Also clearly commit to using these gauges in an effective manner to meet the obligations within condition 23.	Section 2.3 now also refers to the conduct of regular inspections to ensure dust emissions are being appropriately managed (referring to the guidance notes in EPA (2019) as required). Landownership figure has been included as Figure 3.
Condition 24. The land acquisition criteria for air pollution generated by the development are listed in Tables 9, 10, and 11 of the Consolidated Consent	Yes	4.2.2 Incidents and Non-Compliances, commitment made to address this requirement.	-	-
Condition 25: The Applicant shall monitor the air quality impacts of the development at representative locations around the site, using the specified averaging period, frequency, and sampling method shown in Table 12 of	Yes	2.2 Air Quality Monitoring Program – committed to HVAS and Table 4 standards and methods commit to meeting these requirements.	-	

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the Consolidated Consent to the satisfaction of DEC and the Director-General				
Condition 26: Within 3 months of the date of this consent, the Applicant shall prepare, and then implement, an Air Quality Monitoring Program for the development, in consultation with DEC, and to the satisfaction of the Director-General.	Yes	2.2 Air Quality Monitoring Program – committed to HVAS and Table 4 standards and methods commit to meeting these requirements.		
Condition 27: The Applicant shall not cause or permit the emission of offensive odour beyond the boundary of the site in accordance with section 129 of the Protection of the Environment Operations Act 1997.	No	No reference to odour control has been included in the AQMP	The applicant is required to update the management plan to include odour controls and procedures and demonstrate how this condition will be satisfied as part of the AQMP. A new or sub section to the AQMP can be added.	Table 5 and Section 3.1.1 has been updated to address the controls implemented in relation to odour emissions from the site.
Condition 28: Meteorological Monitoring	No	3.1 Air Quality Controls Table 5 Air Quality Management Measures	The management plan is required to be updated with a firm commitment to establish the required meteorological station and obtain approval for the proposed location.	Section 2.2 of the AQMP has been updated to refer to the weather station.

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Within 3 months of the date of this consent, or as otherwise agreed, the Applicant shall establish a permanent meteorological station at a location approved by the DEC, and to the satisfaction of the Director-General, to monitor the parameters in Table 13, using the specified units of measure, averaging period, frequency, and sampling method.		The Control Procedures states a daily assessment of meteorological conditions should be made whereas Condition 28 requires that a meteorological station be established as a location to be approved by the DEC.	Further details of meteorological monitoring and parameters to be measured can be included in the AQMP.	Castlereagh Coal will seek approval for its locations and setup in accordance with Condition 28 of DA 200-5-2003.
Condition 60: Greenhouse Gas	No	No reference to Condition 60: Greenhouse Gas has been included in the management plan.	The Applicant is required to update the AQMP encompass all relevant conditions of the Consolidated Consent, in this case with respect to Greenhouse Gas emission. The Applicant is required to update the management plan and include greenhouse gas management measures and detail how such emissions as a result of the operations will be minimised.	A new section (Section 3.2) has been added to identify the sources of greenhouse gas emissions, the measures to be implemented to minimise and manage greenhouse gas emissions and reporting requirements in accordance with condition 60.
Schedule 5	Yes	*Section 4.2.2 Incidents and Non-Compliances should reference*	-	-

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Condition 1: Notify Landowners: If the results of the monitoring required in Schedule 4 identify exceedances of the air quality and/or noise limits/criteria in Schedule 4, then the Applicant shall notify the Director-General and relevant landowner/s in writing about these exceedances, and provide quarterly monitoring results to these parties until the monitoring results show that the development is complying with the relevant air quality and/or noise limits/criteria.		*Schedule 5, Condition 2 Notify Landowners*		
Schedule 5 Condition 2: Independent Review	No	Section 4.2.2 addresses only the management procedures with respect to Schedule 5 Condition 1. No reference or management practises have been detailed to ensure compliance with Schedule 5 Condition 2 has been included in the management plan.	• It is required the AQMP be updated to include all relevant controls practises and management procedures to comply with condition 2 of Schedule 5 of the Consolidated Consent. • Further please ensure the incident reporting comments made on the EMS are also included in this document, or at least a	Section 4.2.2 has been updated to include reference to the ability for a landowner to request an independent review. Changes requested to the EMS incident reporting section have been made within Section 4.2.2 of the AQMP.

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	reference to the EMS incident reporting requirements.	
General Comments	**Action Required**	**Company Response**
The AQMP can cross reference measures and controls where relevant and/or stipulated in the EMP and TMP.	Where relevant, the management plan shall cross reference and include other Management Plan control measures and procedures.	Reference to the EMP has been included.
Other Agency Comments	**Action Required**	**Company Response**
EPA consultation has been conducted and copy of correspondence provided in Appendix A wherein EPA recommends that the relevant sections of the EMP are copied into the respective air and noise management plans for the sake of completeness.	Applicant shall update AQMP to ensure relevant EMP sections are utilised.	EPA has been provided a copy of the EMP. Notwithstanding the AQMP includes detail on the monitoring as described within the EMP.