

Appin Mine Ventilation and Access Project Construction Environmental Management Plan (CEMP)

Role	Position
Document Owner	AMVA Project Manager
Document Approver	Superintendent Environment

People involved in the review of this plan include:

Name	Position	Company/Site	Exp (yrs)	Revision
Chris McEvoy	Approvals and Environment Principal	GM^3	26	25/03/2025
Chris Schultz	Environment Superintendent	GM^3	28	31/10/2024
Gary Brassington	Approvals Manager	GM^3	40	28/09/2022
Lachlan Cunningham	Construction Manager	GM^3	40	13/10/2022
Glen Alsemgeest	Project Manager	GM^3	20	13/10/2022
Rod Mapstone	Community Principal	GM^3	20	28/09/2022
Ian Bell	Governance Lead	South32	45	13/10/2022
Cody Brady	Principal Approvals	GM^3	8	7/11/2024

Revision History

Revision	Description of Changes	Date
0	Draft 1	28/09/2022
0a	Draft 2	18/10/2022
0b	Final with Agency feedback	21/11/2022
1	Final in response to DHPI feedback	16/01/2022
2	Revised Pursuant to MOD 6: Increased Blasting Hours and Frequency	15/10/2024
3	Revised Pursuant to further approval for 24/7 Blasting Hours. Layout Plan added in Appendix 3.	25/03/2025

Table of Contents

1 DOCUMENT SCOPE AND PURPOSE 5
1.1 Introduction 5
1.2 AMVA Project Scope 5
1.3 Construction Schedule 7
1.4 CEMP Purpose 8
1.5 Environmental Management Strategy 8
1.6 Contractor Management Strategy 9
2 REGULATORY AND COMPLIANCE REQUIREMENTS 11
2.1 Approval, Licences and Permits 11
3 ROLES AND RESPONSIBILITIES 18
3.1 Training and Awareness 19
4 GENERAL ENVIRONMENTAL MANAGEMENT 20
4.1 Environmental Performance Management 20
4.2 Works Planning 21
4.3 Ground Disturbance Permit Procedure 21
4.4 General 22
4.5 Construction Hours 22
4.6 Heritage Management 23
4.7 Vegetation Management and Biodiversity 27
4.8 Topsoil Management 30
4.9 Waste and Fuels Materials Management 30
5 SURFACE AND GROUNDWATER MANAGEMENT 33
5.1 Surface Water and Erosion Sediment Control Plan 33
5.2 Hydrogeology 35
5.3 Groundwater Management During Shaft Construction 36
6 NOISE MANAGEMENT PLAN 39
6.1 Receivers 39
6.2 Noise background levels 39
6.3 Noise Agreements 41
6.4 Surface Construction Noise Management Requirements 41
6.5 Shaft Sinking Activities Noise Management Requirements (Main Sink) 42
6.6 Noise Monitoring Program 43
6.7 Noise Mitigation 48
7 TRAFFIC MANAGEMENT PLAN 49
7.1 General Management and Mitigation Safeguards 49
7.2 Traffic Monitoring 49
7.3 Traffic Control Plan and Road Closure Protocols 50

7.4 Vehicle Movement Plan 50
8 AIR QUALITY MANAGEMENT PLAN 54
8.1 Predicted Construction Air Quality Impacts 54
8.2 Air Quality Criteria for the AMVA Project Site 54
8.3 Air Quality Monitoring 55
8.4 Air Quality Management and Mitigation Measures 55
9 BLAST MANAGEMENT PLAN 57
9.1 Shaft Construction Engineering Phases 58
9.2 Local Environment 60
9.3 Predicted Impacts 63
9.4 Blasting Criteria and Requirements 63
9.5 Mitigation of Blast Impacts 64
9.6 Monitoring Protocols 67
9.7 Blast Related Community Consultation and Complaints Handling 71
10 COMMUNITY CONSULTATION AND COMPLAINTS HANDLING 71
10.1 Stakeholder Consultation 72
10.2 Complaints, Enquiries and Disputes Procedure 73
10.3 Non-Compliance Management 74
11 REPORTING AND REVIEW 74
11.1 Reporting 74
11.2 CEMP Review 76
11.3 Audits 77
12 Appendices 79
Appendix 1: AMVA Drivers Code Of Conduct 79
Appendix 2: Further Approval for 24/7 Blasting 83
Appendix 3: Layout Plan 86
Appendix 4: CEMP Approval 88

1 DOCUMENT SCOPE AND PURPOSE

1.1 Introduction

Appin Mine incorporates the underground mining operations, which extract coal from the Bulli Seam, and associated surface activities, including the West Cliff Coal Preparation Plant (WCCPP) and Coal Wash Emplacement Area (CWEA). Appin Mine is located approximately 25 kilometres (km) north-west of Wollongong in New South Wales. Appin Mine is owned and operated by Endeavour Coal Pty Ltd, a subsidiary of Illawarra Coal Holdings Pty Ltd (ICHPL), which is a wholly owned subsidiary of Gear M Illawarra Met Coal Pty Ltd, trading as GM[3]. Appin Mine, Cordeaux Colliery and Dendrobium Mine (and associated facilities) are operated by GM[3].

ICHPL received Project Approval 08_0150[1] (the Project Approval) from the Planning Assessment Commission of New South Wales (NSW) under delegation of the Minister for Planning and Infrastructure on 22 December 2011 for current and proposed mining of the Bulli Seam Operations (BSO) for 30 years, and production of up to 10.5 million tonnes per annum of run of mine (RoM) coal. This approval incorporates underground mining, transport and coal wash emplacement activities undertaken 24 hours a day, seven days per week.

In April 2022 a modification of the Project Approval (MOD 3) was granted (pursuant to Section 4.55(2) of the Environmental Planning and Assessment Act 1979 (EP&A Act), following an Environmental Assessment (EA) process, to allow for the construction and operation of two ventilation shafts (VS), mine access infrastructure and improved site access at 345 Menangle Road, Menangle NSW, herein referred to as the Appin Mine Ventilation and Access Project (AMVA Project or the Site) shown in Figure 1.

Condition 11 of Schedule 4A of the Project Approval requires the development of a Construction Environmental Management Plan (CEMP). This document has been prepared to address this requirement.

This CEMP has been reviewed and revised pursuant to a further approval to undertake blasting associated with the main shaft sink for Vent Shaft 7 and Vent Shaft 8 on a 24-hour, 7 days a week basis in accordance with Condition 5 of Schedule 4A of the development consent for the Bulli Seam Operations Project (MP08_0150). Refer Appendix 2.

1.2 AMVA Project Scope

The AMVA Project includes construction of:

- Two (2) ventilation shafts VS7 and VS8.
- Mine access infrastructure at VS7.
- Upcast ventilation fans at VS8.
- Administration/bathhouse/storage buildings and other supporting surface facilities.
- High and low voltage electrical infrastructure.
- Utilities and security structures.
- Upgraded Site access to Menangle Road and internal Site access roads.
- Other minor activities associated with the construction and operation of the ventilation shafts

[1] As modified on April 2015 (MOD 1), October 2016 (MOD 2), April 2022 (MOD 3), August 2024 (MOD 5) and October 2024 (MOD6).

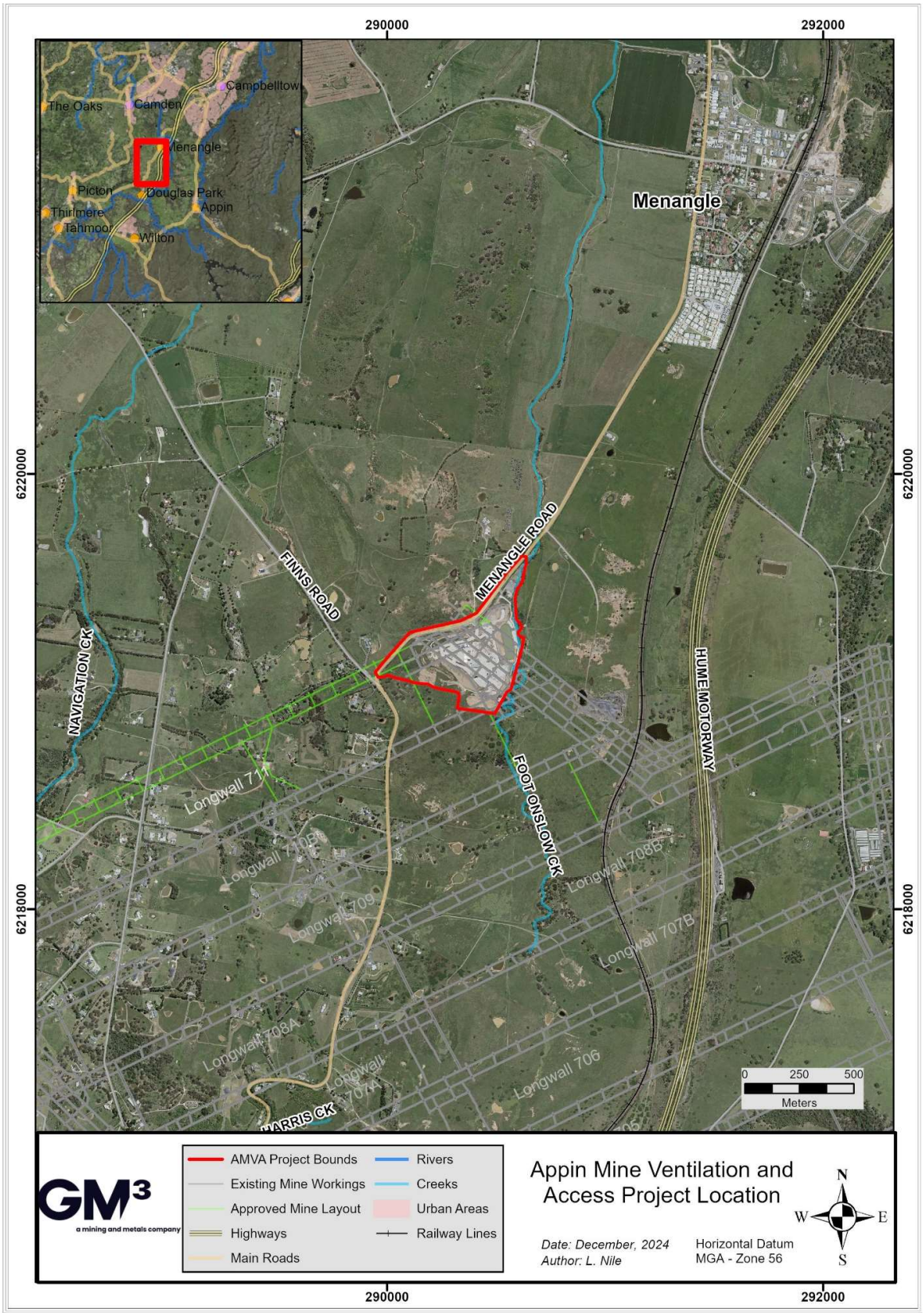


Figure 1 Project Location

1.3 Construction Schedule

The AMVA Project execution schedule has been staged to facilitate a safe working environment, reduce and control environmental impacts and deliver required works in a timely manner. In summary, these stages are described in the paragraphs below.

1.3.1 Pre-construction Activities and Early Works

Pre-construction Activities as described in definitions in the Project Approval include:

Pre-construction works that may be required for the project, including surveys, acquisitions, fencing, investigative or geotechnical drilling or excavation, minor clearing, slashing and vegetation maintenance, minor access roads, minor adjustments to services/utilities (including service relocations), works which allow isolation of the site so that access for construction can be provided, and commissioning of site offices.

Other early works involved bulk earthworks for the site layout, and intersection upgrades with Menangle Road. The works described above were undertaken under the Early Works CEMP.

Shaft pre-sinking was not managed under the Early Works CEMP and had not commenced; therefore, this CEMP also describes the specific management protocols to be included for shaft pre-sinking which is described in the Modification Report as:

Pre-sinking of the shaft to required depth, construction of a shaft collar which is required to hold the temporary headframe and winder, construction of the headframe and winder and any associated noise mitigation required for 24-hour shaft sinking to occur.

1.3.2 Construction

"Construction" as described in definitions of the Project Approval includes:

The demolition of buildings or works, carrying out of works and erection of buildings covered by this approval, but not including pre-construction activities.

The tasks in bold include:

Shaft sinking involving mechanical excavation and/or blasting methods to excavate the shaft to the desired depth.

Shaft lining involving progressively lining the shaft with concrete to a nominal thickness of 300 mm.

Construction of an earthen bund using spoil from the shaft excavation.

Construction of civil and infrastructure works associated with the VS7 and VS8, ventilation and access buildings, administration office, bathhouse facilities, hardstand areas (e.g., parking and laydown areas), pavement/internal roads, boreholes for communications, transformers, electrical substation, switch room and generator, and ventilation fans.

Detailed description of these elements of the Project are provided in Section 3.1 of the Modification Report (Modification Report for modification to Project Approval 08_0150, 2021 (Niche, 2021)).

1.3.3 CEMP Staging and Scope

Condition 13 of Schedule 2 of the Project Approval allows for the submission of strategies, plans and programs (including the CEMP) on a progressive basis, specifically:

With the approval of the Secretary, the Proponent may submit any strategies, plans or programs required by this approval on a progressive basis.

Notes: While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on Site are covered by suitable strategies, plans or programs at all times; and

If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.

ICHPL was granted approval from the Planning Secretary on 26 April 2022 to allow for the staged submission of the CEMP required under Condition 11 of Schedule 4A.

1.3.3.1 Scope of this Management Plan

This CEMP applies to:

- Shaft Pre-Sinking; and
- The works as described in Section 1.3.2 (i.e. "Construction as defined the in Project Approval").

The CEMP which applies to each stage of work is clarified in yellow in Figure 2.

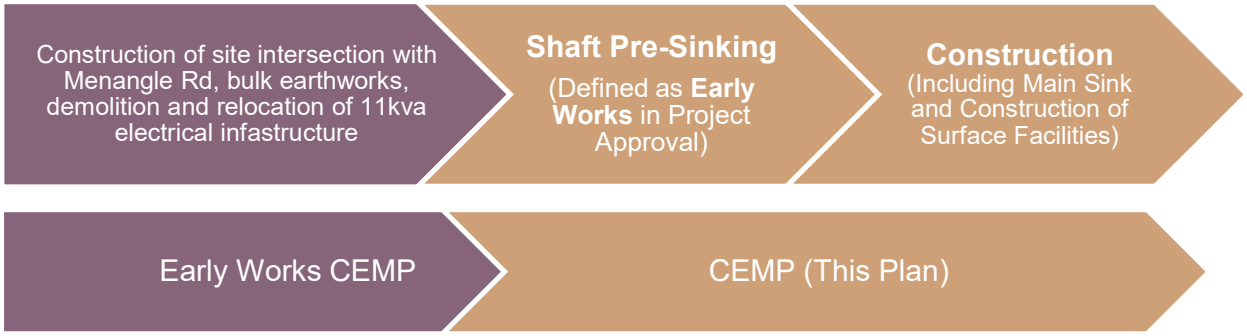


Figure 2 Scope of Construction Environmental Management Plans

1.4 CEMP Purpose

A requirement of Condition 11 of Schedule 4A is the development of a CEMP which provides the specific environmental management and monitoring measures for the construction activities. As such, ICHPL have developed this CEMP for the purpose of:

- Identifying and implementing relevant environmental, legal/regulatory requirements applicable to the construction works.
- Stating objectives and targets for the environmental performance of the AMVA Project.
- Identifying the environmental management measures to minimise and manage the Project's impacts on the environment and community during construction.
- Outlining how ICHPL will comply with the Project Approval, licences and permits, during the construction of the AMVA Project.
- Assigning roles and responsibilities for the implementation, management and review process.
- Providing a consistent and uniform approach to environmental management.
- Providing all personnel working on the AMVA Project with sufficient information to undertake their works in accordance with the Project Approval, legal and other relevant environmental requirements.
- Enabling the commitments within the Project Approval to be captured and implemented.

1.5 Environmental Management Strategy

The CEMP provides the environmental management framework for managing and minimising the environmental impacts during the construction activities. This document has been developed to

align with the AMVA Project's environmental assessment, associated documentation and the accompanying technical specialist assessments.

An Environmental Management Strategy (EMS) is required under Schedule 6 of the project approval and is in place for Appin Mine. The EMS has been developed to be generally in accordance with International Organisation for Standardisation (ISO) 14001:2015 Environmental Management Systems. The EMS includes environmental management plans and procedures that are used to manage key environmental issues and for the successful implementation of the environmental strategy, including aspects such as monitoring, communication, environmental risk assessment and training. Procedures have also been developed to appropriately manage areas of residual risk, with all relevant Site personnel trained in relation to these procedures. This CEMP has been prepared to address specific issues associated with the construction of the AMVA Project in consideration of the strategy provided in the EMS. ICHPL has updated existing environmental managements plans to include relevant details for the AMVA Project as required by the Project Approval.

1.6 Contractor Management Strategy

The EMS also follows a contractor management model in relation to how ICHPL will manage the environmental aspects of the construction project and the imposition of the environmental conditions (insofar as it is applicable to Contractors), under this CEMP for the AMVA project. Accordingly, works will be undertaken by a range of specialist contractors with expertise across shaft sinking, electrical infrastructure installation, bulk earthworks, civil and roads construction. As such, this CEMP has been developed to provide clear guidance to all ICHPL staff and Contractors (and Contractor personnel) in relation to:

- What the environmental conditions are.
- How the environmental conditions are to be managed.
- What the roles and responsibilities are in relation to ICHPL.
- What the roles and responsibilities are in relation to the Contractors during the performance of their duties.
- Identifying the task specific work plans that are required to be developed by the Contractors in order for the respective Contractor to meet all the environmental conditions imposed on them under contract as set out in the CEMP.

The task specific plans by the Contractors shall, but not be limited to, consider and assess all potential impacts to Health, Safety and the Environment (HSE) for all tasks that are to be performed by the Contractor and the implementation of effective and appropriate controls in consideration of this CEMP, which will also be reflected in the Contractors' environmental management plans specific to their respective tasks.

Figure 1 provides an overview of how the CEMP interacts with other environmental management strategies, documents and procedures (i.e. the Contractors' HSE plans and documents) which are required for the AMVA project.

Light green boxes denote those documents that will be developed by ICHPL and the Contractors before the Contractors mobilise and start to perform their respective scope of works in relation to the construction works. ICHPL will review the Contractor's environmental management plans and/or procedures prior to the Contractors starting works and, insofar as is necessary, before the Contractor starts a new task or task conditions change.

When Contractors develop their own specific plans (as denoted in the dark green boxes), the Contractors must take into consideration all potential environmental impacts and appropriate controls in accordance with this CEMP.

It will be the responsibility of all contractors when planning and undertaking their work to ensure compliance with the environmental conditions (insofar as it applies to their scope of work and their roles and responsibility) under this CEMP as if the environmental conditions are imposed on the Contractor.

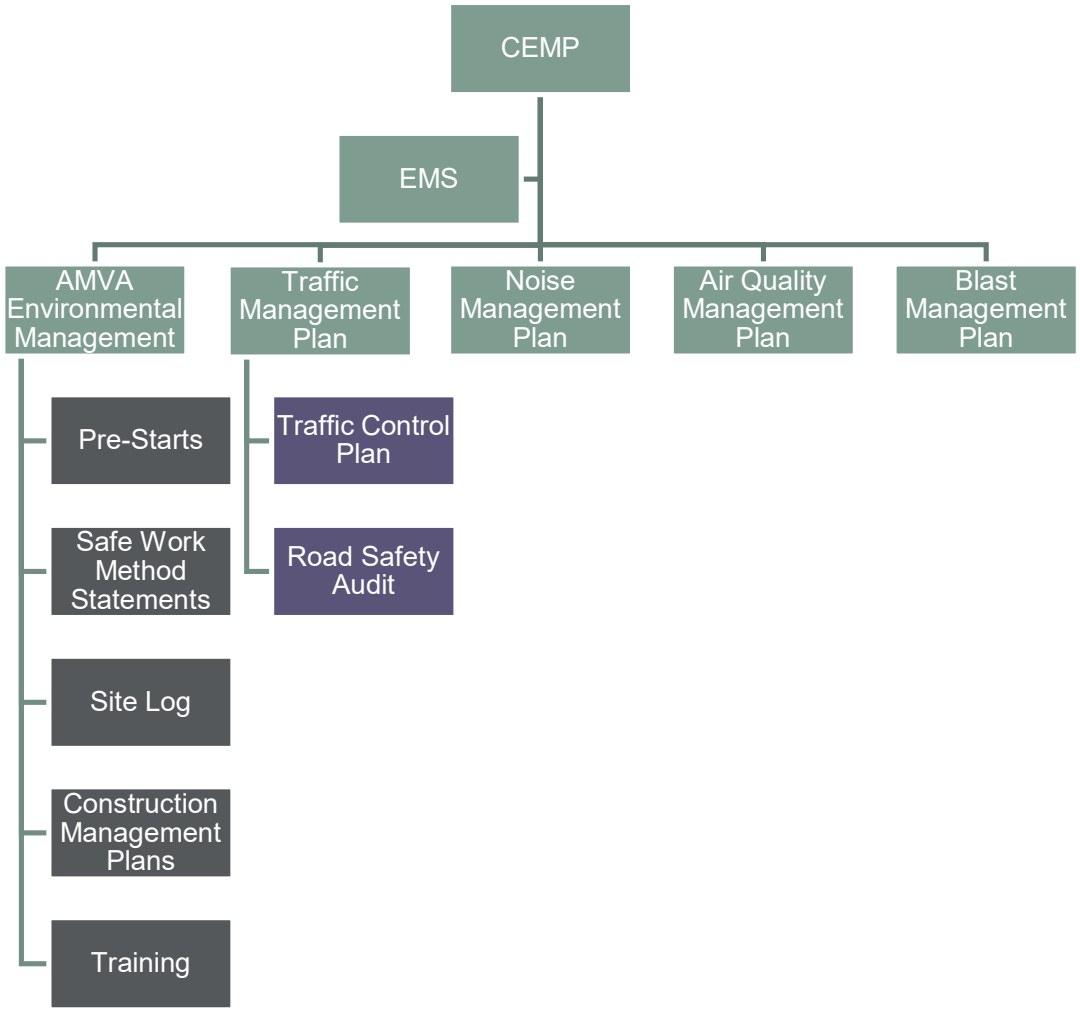


Figure 3 Hierarchy of Construction Environmental Management Tools

Nothing in this CEMP should be read as restricting or limiting ICHPL's ability to manage HSE, including managing the environmental conditions under this CEMP by:

- Engaging specialist contractors (e.g. the Contractors) to:
  - provide all necessary management, supervision and personnel to ensure the environmental conditions under this CEMP are identified, managed and effectively implemented; and
  - do all things necessary to ensure that the environmental conditions imposed under this CEMP are met (e.g. that the Contractor physically build or do a task to ensure compliance with the environmental conditions);
- Verifying that the Contractors:
  - have in place the required environmental plans and procedures so that the Contractors have a system in place to manage environmental conditions and obligations as outlined under this CEMP; and
  - are complying with the environmental conditions as stipulated under the CEMP and/or their contractor environmental plans and procedures.

Contractors will be required to keep a site log which is to be kept by the respective Contractor's site manager detailing all activities performed by the Contractor occurring on a daily basis.

ICHPL will audit the Contractor's pre-start, Safe Work Method Statements (SWMS) and site logs to verify environmental controls are being adequately considered and implemented and as a management tool to confirm compliance with relevant criteria and conditions. The purple boxes are management plans which must be developed by responsible and appropriately qualified third parties to assist in the management of

environmental aspects at the project. Compliance by ICHPL and the Contractors shall be in accordance with the roles and responsibilities as outlined in Section 3.

2 REGULATORY AND COMPLIANCE REQUIREMENTS

2.1 Approval, Licences and Permits

All licences, permits and approvals required for the construction of the AMVA Project have or will be obtained and maintained, as required, throughout the construction period. The status of these licences permits and approvals along with the required timing for each is shown in Table 1.

Table 1 Status of Approvals, Licences and Permits

Licence/Approval Description	Status	Approving Authority	Comment
BSO Project Approval (PA 08_0150)	Current. As modified on 11 October 2024 (MOD 6-Blasting Limits).	DHPI	MOD 6 extended blasting hours to 7am -10pm Monday to Saturday & 8am to 10 pm Sundays. No blasting on Public Holidays. Increased permitted blasting frequency up to 2 blasts per shaft per day.
Environment Protection Licence (EPL) No. 2504	Current	NSW Environment Protection Authority (EPA)	Variation for premises change and inclusion of discharge and overflow points (41 and 42 respectively) from sediment basin at AMVA approved 1 May 2022.
Section 138 Road Opening Permit	Approved	Wollondilly Shire Council	Approved for Intersection Works
Construction and occupation certificates	Principal Certification Authority has been engaged and applicable surface infrastructure being reviewed.	Principal Certifier	Obtain (where applicable) for the proposed building works.
Water access licence (30145) (WAL) and water supply works approval (10WA117285)	Current (expires 14 November 2026 renewed at anniversary date)	WaterNSW	The current allocations are sufficient to support the AMVA Project.
Miscellaneous works approval (10MW119346)	Current (expires 29 July 2034)	WaterNSW	The current allocations are sufficient to support the AMVA Project.
Subsidence Advisory NSW Development Approval	Approved 23 May 2022	Subsidence Advisory NSW	For all works including those in the road reserve.

2.1.1 Project Approval

Condition 11 of Schedule 4A of the Project Approval requires the preparation of a CEMP. Table 2 provides a compliance matrix of where each element of the condition has been addressed in the CEMP.

Table 2 Project Approval CEMP Conditions

Condition	Description	Section/s Addressed
11	Prior to the commencement of Appin Mine Ventilation and Access Site early works, the Proponent must prepare a Construction Environmental Management Plan for the construction phase of the Appin Mine Ventilation and Access Site to the satisfaction of the Planning Secretary. This plan must:	This Document.
(a)	be prepared in consultation with the EPA	Section 10.1.
(b)	provide the specific environmental management and monitoring measures for construction works, including for:	
	minimising construction-related noise, dust, visual impacts, and surface disturbance;	Noise management measures are described in Section 6. Air Quality management measures are described in Section in Section 8.4. Visual impact management measures are described in Section 4.7.1.
	stormwater management including erosion and sediment controls and clean water diversion;	Section 5.1 to 5.1.4.
	monitoring and managing groundwater inflows and impacts to groundwater resources as a result of shaft construction activities at the Appin Mine Ventilation and Access Site:	Section 5.3.
(c)	include details of vegetation clearing protocols, including procedures to minimise the amount of the clearing required on the Appin Mine Ventilation and Access Site	Section 4.7.
(d)	include a Construction Blast Management Plan prepared by a suitably qualified and experienced person/s in consultation with the EPA that:	Section 9
	describes the measures that would be implemented to ensure compliance with the relevant conditions of this approval and that best management practice is being employed;	
	includes a real-time automated monitoring program prepared in accordance with the guidelines provided in Australian Standard 2187.2-2006: Explosives-Storage and use, Part 2: Use of explosives to: evaluate the performance of the Project and compliance with the applicable criteria; control flyrock; and minimise fume emissions from the site;	Monitoring (Section 7.7). Control of Flyrock (Section 7.6.5). Minimisation of Fume Emissions (Section 7.6.3.

Condition	Description	Section/s Addressed
	includes public notification procedures to enable members of the public, particularly surrounding residents, to get up-to-date information on the proposed blast schedule;	Section 7.8.1.
	Includes a protocol for investigating and responding to blast-related complaints; and	Section 10.2.
	Includes a protocol for investigating and responding to noise complaints.	
(e)	include a Construction Traffic Management Plan prepared in consultation with the TfNSW and WSC, that:	Section 7
	includes strategies to manage construction traffic, including road closure protocols, community consultation and measures to avoid potential road safety conflicts with other road users;	Section 7
	includes a program for conducting road safety audits, including both pre and post construction, of the intersection of the Appin Mine Ventilation and Access Site entrance with Menangle Road;	Section 7.4.7.
	includes a vehicle movement plan for:	Section 7.4.3.
	managing light, heavy and over-dimensional vehicles during construction works;	
	transporting construction waste materials; and	
	restricting construction or transportation hours to avoid road user conflicts; and	
(f)	include a Construction Noise Management Plan that:	Section 6
	describes the measures that would be implemented to ensure compliance with the noise conditions of this approval;	Section 6.4 and Section 6.5.
	includes a noise monitoring program that: • uses a combination of real-time and supplementary attended monitoring to evaluate noise generated by the Project during construction; and • includes a protocol for determining exceedances of the relevant conditions of this approval.	Section 6.5.
(g)	include a Construction Air Quality Management Plan that:	Section 8
	describes the proactive and reactive air quality mitigation measures that would be	Section 8.4.

Condition	Description	Section/s Addressed
	implemented to ensure compliance with Condition 9 of Schedule 4 of this approval;	
	includes an air quality monitoring program that: • includes real time monitoring to evaluate air quality impacts during construction; and • includes a protocol for determining exceedances of the relevant conditions of this approval.	Section 8.3.

The AMVA Project Modification report (Niche/Element, 2021) considered the outcomes of the various technical specialist assessments as defined by the Project Approval. The subsequent statement of commitments is presented in Table 3 including a reference to where each commitment has been addressed within the CEMP.

Table 3 Environmental Assessment (EA) Environmental Management Commitments

Environment or Community Aspect	Commitment	Section/s Addressed
Working hours and noise	Construction hours will minimise the impact on the community.	Section 4.5.
	Activities will be undertaken as per the hours in the relevant project assessment (except emergencies), with a preference to undertake audible activities during day-light hours where possible.	
	Works will be designed with consideration to minimising impacts on the community.	
Public Consultation	ICHPL will continue to liaise with and provide information regarding surface activities via the ICHPL Community Consultative Committee, or any other such community group that is deemed appropriate.	Section 10
	ICHPL will continue to operate the Community Call Line to provide an alternative method for public information.	
Noise	Noise will be mitigated as per the relevant project assessment and/or management plans.	Section 6
	Project layout will give consideration to the mitigation of noise impacts as practicable.	
	Noise performance will be incorporated into contractor performance requirements for surface projects in noise sensitive areas.	
	ICHPL will undertake noise monitoring as per the relevant project assessment document or management plan.	
	Consultation will be undertaken with receivers subject to significant noise impacts from the Project. Consultation will address any additional noise mitigation measures proposed.	
Air quality and Greenhouse Gas	Construction activities will be managed to minimise the generation of dust.	Section 8
	Suitable measures, such as site layout design, dust suppression, stockpile management, appropriate road surfaces and rehabilitation of disturbed areas will be applied to minimise dust generation.	

Environment or Community Aspect	Commitment	Section/s Addressed
	Plant and operating equipment will be maintained appropriately to minimise fuel consumption and associated emissions.	
	Electrical power consumption will be minimised during the operational phases of the Project where at all practicable.	N/A
Water resources	Stormwater runoff, soil and erosion control measures will be managed in accordance with guidelines detailed in the publication Soils and Construction, Volume 1, 4th Edition and Controlled Activities on Waterfront Land. Guidelines for Laying Pipes and Cables in Watercourses on Waterfront Land, 2012, where relevant. Water controls will be employed as per the applicable project assessment or management plan documentation.	Section 5
	Service supply boreholes will be cased and grouted to address any known regionally significant aquifers.	
	Drilling process wastewater will be managed as per the relevant project assessment.	
	Water required for projects will be sourced from appropriate sources, such as: • Recycling captured water where possible, • Water Licence in accordance with the requirements of the Water Sharing Plan 2010 (DECCW 2009) and the *Water Management Act 2000*; • An authorised Sydney Water supply; or • Appin Mine Filtration Plant.	
Biodiversity	Biodiversity will be managed as per the relevant project assessment and/or management plans.	Section 4.7.
	Projects will be designed and constructed to minimise the amount of clearing of native vegetation and mature trees where practicable.	
	A two-stage clearing process will be undertaken for the felling of any hollow bearing trees.	Not Applicable (there are no hollow bearing trees to be felled)
	Where native vegetation has been cleared, rehabilitation activities will include representative native seed where at all practicable.	Section 4.7.
Heritage (Aboriginal)	Heritage will be managed as per the relevant project assessment and/or management plans.	Section 4.6.
	Where identified sites are located adjacent to proposed activities a barrier will be installed to prevent interaction.	
	Where unexpected sites are identified during construction activities, works in vicinity of the site shall stop and a qualified archaeologist engaged.	
Heritage (Non-Aboriginal)	ICHPL will manage and conserve the Mountbatten Group in a manner consistent with its heritage values and in accordance with the Conservation Management Plan.	Not Applicable

Environment or Community Aspect	Commitment	Section/s Addressed
	ICHPL will ensure the sympathetic placement of new buildings and structures on properties subject to heritage infrastructure (such as the Morton Park: Mountbatten Group).	Not Applicable
	Vegetation clearing for Project activities will be minimised and should not include historic plantings.	Not Applicable
	Any relics discovered during Project activities will be assessed and documented by an appropriately qualified cultural heritage expert. Where it is relevant to do so, relics will be retrieved and managed in accordance with any recommendations made by the cultural heritage expert.	Section 4.6.
	Where surface projects interact with heritage items owned by other parties (e.g. the Water NSW Upper Canal), the infrastructure owner will be consulted and relevant approvals obtained prior to works.	Not Applicable
Traffic	Traffic will be incorporated into environmental assessment documentation. Where relevant, a Traffic Management Plan will be developed and implemented to minimise impacts and ensure continued road safety.	Section 7
	ICHPL will ensure any measures within a Traffic Management Plan will be implemented.	
	For large projects ICHPL will advise local residents of the commencement of works and any related potential disruptions to local traffic.	
Risks and Hazards	ICHPL will ensure contractors abide by Company HSEC policies and management systems.	Section 4
	ICHPL will ensure contractors undertake the appropriate investigations with regards to underground service locations prior to the commencement of excavation works.	
	Diesel storages and pipelines shall be constructed and maintained in accordance with the relevant standards.	
	Appropriate risk management equipment (such as firefighting facilities and spill kits) will be present and maintained, with staff trained in their use.	
	Safety fencing will be installed around excavations and high risk areas of project sites to mitigate risks associated with unauthorised access. Vehicular accesses will be gated and locked when not in use.	Section 4.7.
Waste	To minimise waste generation material generated from construction works will be utilised on site or as capping material at West Cliff emplacement area, where suitable.	Section 4.9.
	Waste will be appropriately captured and transferred to suitable re-use, recycling or disposal locations.	
Visual Amenity	Clearing of native vegetation and mature trees will be minimised at projects where possible.	Section 4.7.
	For long term infrastructure ICHPL will look to avoid the use of highly reflective materials or materials not commensurate with the surrounds, as is practicable.	

Environment or Community Aspect	Commitment	Section/s Addressed
	Screening trees will be included in revegetation works, as and where appropriate for long term projects.	
	Permanent lighting will be installed as per the relevant standards but will consider visual amenity and light spill.	
	Temporary lighting will be arranged to minimise light spillage as much as possible without compromising safety or operations.	
Rehabilitation	ICHPL will undertake rehabilitation of any areas disturbed by the Project to ensure the environment is returned as close as possible to pre-project condition and/or to meet landowner specific requirements.	Not Applicable for construction
	De-commissioning of boreholes and shafts will be undertaken in accordance with the requirements of the relevant government department/s.	
The Appin Mine Ventilation and Access Project	A care and control agreement will be prepared and implemented for the long-term management of recovered artefacts.	Section 4.6.
	ICHPL will provide biodiversity offsets under the NSW Biodiversity Offset Scheme for the Retirement of two (2) PCT 849 Ecosystem Credits.	Noted
	A Blast Management Strategy will be prepared.	Section 9.
	ICHPL will continue to liaise with and provide information regarding the Project construction via the Menangle Advisory Panel.	This is undertaken quarterly.
	An Infrastructure Management Plan will be prepared in consultation with Transport for NSW, should the potential OSO be constructed at the Site during the operational life of the Site.	Noted

2.1.2 Water Access Licences

The AMVA Project will utilise ICHPL's existing Water Access Licence (WAL) 30145, under the NSW Water Management Act 2000, issued for VS6. ICHPL manages compliance with WAL 30145 as part of the wider Appin Mine management of water licences. The water use from WAL 30145 by the AMVA Project has not introduced any additional licence conditions.

Miscellaneous works approval 10MW119346 is in place for the accounting of groundwater extracted during shaft sinking operations. Allocation is available under WALs 36477 and 37464.

2.1.3 Environmental Protection Licence

ICHPL operates in accordance with Environment Protection Licence (EPL) 2504. Approval for a licence variation for the purposes of a premises change and the addition of a piped discharge point and overflow from the sediment pond was granted by the EPA on 1 May 2022. Management requirements for surface water are discussed further in Section 5.

2.1.4 Guidelines and Standards

During development of this CEMP, ICHPL applied the guiding principles found in:

- ISO 14001:2015 Environmental Management Systems.
- GM^3 Sustainability Policy.

Other relevant guidelines for the AMVA Project include:

- NSW Department of Environment and Climate Change (DECC) Interim Construction Noise Guideline (2009) (ICNG).
- Managing Urban Stormwater: Soils and Construction Manual.
- NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects (NSW Minerals Council 2010).

3 ROLES AND RESPONSIBILITIES

The roles and responsibilities associated with environmental management for the AMVA Project are defined in the Environmental Management Strategy. Table 4 outlines the roles and responsibilities associated with the implementation and periodic review of the CEMP.

Table 4 Roles and Responsibilities

Role	Responsibilities
All Personnel	Carry out works in accordance with the Project Approval, as described in this CEMP. Exercise due care, skill and foresight when carrying out the works. Immediately report all environmental incidents to the ICHPL Environmental representative. Comply with all permits, approvals, and subsequent plans associated with the works. Be able to always locate a copy of this CEMP. Inform the ICHPL Environmental representative immediately if it is not practical to comply with a requirement or if the specified controls are inadequate. Implement corrective actions which have been approved by the appointed Site Supervisor.
ICHPL Project/Construction Manager or delegated ICHPL Construction Coordinators	Verify all personnel are aware that works must be carried out in accordance with this CEMP. Verify all reports and records are prepared as detailed in this CEMP. Verify all required permits or approvals are approved as specified in the CEMP prior to commencement of works. Verify compliance with all permit requirements as described in Section 2. Ensure consultation and community liaison is undertaken in accordance with this CEMP. Ensure compliance with this CEMP is a condition of engagement for contractors and staff.
Contractor's Managers and Supervisors	Ensure compliance with all requirements in this CEMP and any applicable Guidelines, Approvals, Licenses or Permits as described in Section 2 Ensure all personnel are adequately trained, resourced and aware of their responsibilities in regard to the CEMP. Keep the CEMP accessible to all personnel. Monitor environmental performance against requirements in the CEMP. Stop work and report the ICHPL Environmental Representative and ICHPL Construction Manager immediately if it is not practical to comply with a CEMP requirement.
Contractor's Representative	Be the first point of contact for the ICHPL Construction Manager. Implement this CEMP to comply with regulatory requirements, audit and non-compliance management. Develop and implement specific EMPs/work method plans for their works as required. Conduct and record daily inspections of Site environmental management controls.

Role	Responsibilities
	Monitor and report environmental performance against the requirements of this CEMP. Nominate the Contractor's Environmental Representative. Ensure that all their staff, consultants and subcontractors are suitably skilled and have a clear understanding of the environmental requirements and consequences of their work. Ensure adequate resources are supplied to ensure implementation of the CEMP. Conduct relevant Site induction and maintain training records. Assist in the conduct of Site audits where required. Ensure that any plan record, inspection or document is retained in so far as compliance with this CEMP and be made available to ICHPL as requested.
ICHPL Environmental Representative	Be available during construction and present on Site during any critical construction activities. Conduct environmental monitoring as required. Provide advice on contamination, soil management, heritage, vegetation management and protection, and provide environmental support as detailed by this CEMP. Consider and advise on matters specified in the requirements in this plan and compliance with these requirements. Carry out environmental audits during construction work to verify compliance with this CEMP, and report findings to the Project/Construction Manager. Liaise with government regulators and ICHPL senior leadership team in relation to arising CEMP issues.
ICHPL Corporate Affairs	Meeting the commitments contained within the CEMP in relation to stakeholder engagement.
ICHPL Sustainability and Approvals General Manager ICHPL Superintendent Environment ICHPL General Manager Appin Mine	Provide the necessary resources and systems to meet the requirements of the CEMP.

3.1 Training and Awareness

All personnel (including subcontractors) are required to attend a compulsory Site induction that includes an environmental component before commencing work on Site. This is done to ensure all personnel involved in the AMVA Project are aware of the requirements of the CEMP, EPL and other relevant regulatory approvals. This will assist with minimising the risk of non-compliance with the Project Approval due to the actions of persons that attend the Site, including contractors and subcontractors. Short-term visitors undertaking inspections or entering Site (such as regulators) will be required to undertake a visitor's site familiarisation and to be accompanied by inducted personnel at all times.

The Site-specific induction for persons undertaking work will include as a minimum:

- Relevant details of the CEMP and EPL requirements including their purpose and objectives.

- Awareness of legislative responsibilities, including that penalties for failing to meet those responsibilities apply.
- Relevant conditions of environmental licences, permits and approvals.
- Incident response, reporting and notification requirements for pollution and other environmental incidents.
- Awareness of key environmental issues relating to the AMVA Project.
- Specific environmental management requirements and responsibilities, including what to do when working in or near environmentally sensitive areas and the associated risks.
- Hours of operation and out of hours works.
- External communications procedures as described in this CEMP.
- Approved transport routes and parking arrangements.

Other generic inductions that may be required include:

- ICHPL Generic Surface Induction.
- Permit to Work for permit issuers.
- Contractors permit to work procedures.

To ensure that the CEMP and requirements of the EPL and other regulatory requirements are effectively implemented, each level of Project Management are responsible for ensuring that all personnel reporting to them are aware of the requirements of this CEMP.

A training, qualifications and skills register will be maintained for the duration of the AMVA Project to ensure all personnel are inducted and hold appropriate licenses, training and qualifications for the work they will be undertaking.

4 GENERAL ENVIRONMENTAL MANAGEMENT

All construction works associated with the AMVA Project will be undertaken in accordance with the CEMP. The following sections provide a summary of how impacts to relevant environmental aspects are to be managed during construction of the AMVA Project.

4.1 Environmental Performance Management

The ICHPL EMS is built on the “Plan, Control, Check, Act” model (Figure 2). This model endorses the concept of continual improvement and is consistent with ISO 14001: Environmental Management Systems. An EMS is a continual cycle of planning, implementing, reviewing and improving the processes and actions that an organisation undertakes to meet its environmental obligations. In accordance with ICHPL’s EMS, Prior to undertaking a new task or as conditions change the following process will be followed:

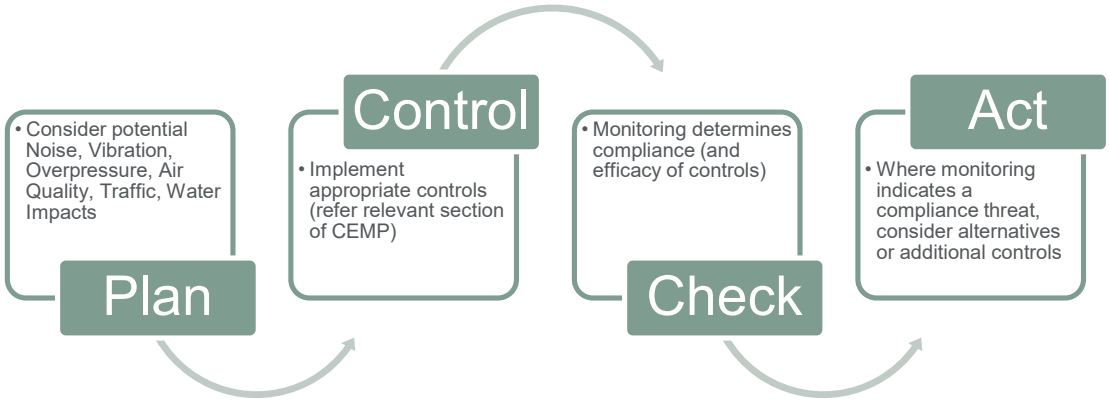


Figure 4 Performance Management Process

4.2 Works Planning

Planning is central to the EMS. To enable relevant environmental controls to be identified and applied the following should be undertaken:

- Pre-start risk assessments to determine potential environmental impacts and apply job specific controls (considering activity, weather, location and interactions).
- Daily site logs. A record of site activities should be kept to enable monitoring data to be correlated with activities. This will enable the review and audit process described in Section 9 as well as inform responses to complaints, enquiries and/or disputes.

Specific environmental controls for individual work areas will be developed based on the task and included in job planning documents (SWMS, pre-start and Construction Management Plans). These plans will be developed by specialist contractors and will be consistent with the requirements and strategies set out in this CEMP. ICHPL require that all works be subject to these documented risk assessments prior to works commencing and review as conditions change. These will be available on request and will be developed in reference to this CEMP.

4.3 Ground Disturbance Permit Procedure

Disturbance is classified as any direct activity with the potential to disturb natural features or cultural heritage. These include, but are not restricted to, clearing of native vegetation, tree removal for bushfire hazard reduction works, construction works, and drilling exploration boreholes.

If there are changes to existing activities/processes or new projects are proposed that have potential for environmental impact, a Permit to Disturb is required. One of the purposes for the Permit to Disturb is to ensure the proposed works have the required environmental approval and that the person(s) undertaking the works have appropriately managed the risks to minimise impacts on the environment and community. The Permit to Disturb process is a standardised system used by ICHPL which sets minimum requirements for authorising works and contains a checklist of environmental aspects that must be reviewed and approved by the ICHPL Environment Representative prior to the commencement of any work. These protocols are detailed in:

- Permit to Disturb Procedure (ICHPL Document ID: ICHPLP0207) .
- Permit to Disturb Form (ICHPL Document ID: ICHF0209)

4.4 General

The following controls are applicable to all construction activities and areas:

- Work areas will be clearly defined prior to any works.
- All building materials, plant and equipment must be contained wholly within the confines of the AMVA Project boundary.
- Vehicles must remain within designated access routes.
- Disturbance to peripheral vegetation to be avoided.
- All personnel must carry out their work in accordance with the responsibilities outlined in Section 3.
- All construction personnel must be made aware of this CEMP.
- All community, regulatory and media enquiries are to be directed to the ICHPL Project/Construction Manager immediately and the Construction Manager should refer to the procedures set out in Section 10.1.1 or if in doubt, direct the enquiry to ICHPL's community specialist.
- Employing routine industry 'house keeping' management practices during the works, such as:
    - Maintaining an orderly and tidy workspace.
    - Ensuring all building materials are appropriately stored or disposed of upon cessation of use.
- Include CEMP and environmental controls awareness specific to the AMVA Project in the Site inductions of staff.
- The CEMP should be readily available on Site and include a Site plan(s) which shows:
    - No go areas (e.g. heritage) and boundaries of the work area.
    - Location of environmental controls (i.e. erosion and sediment controls, fences and/or other measures to protect vegetation or fauna, spill kits).
    - Location and full extent of any vegetation disturbance.

4.5 Construction Hours

The construction activities and the corresponding hours for Construction at the AMVA Project detailed in Condition 7B of Schedule 2, of the Project Approval are reproduced in Table 5.

Table 5 Construction Hours

Activity	Hours (Other than for emergency or safety purposes as approved by the planning secretary in the Construction Traffic Management Plan required under Schedule 4A Condition 12)
Construction Hours	
Pre construction activities	7.00am to 6.00pm, Monday to Friday 8.00am to 1.00pm Saturday No works on Sunday or Public Holidays

Construction, including: Surface construction activities:, civil and earthworks, utilities (including power supply infrastructure), shaft pre-sinking, fans, evase(s), ancillary site infrastructure and mine access infrastructure (winder, headframe, etc).	7.00 am to 6.00 pm, Monday to Friday 8.00 am to 1.00 pm Saturday No works on Sunday or Public Holidays
Shaft sinking activities prior to the construction of acoustic sheds/mitigation.	7.00am to 10.00pm Monday to Saturday 8.00am to 10.00pm Sunday No works on Public Holidays
Shaft sinking activities once the acoustic sheds/mitigation is in place. Any works that are inaudible at residential premises. Concrete deliveries during shaft sinking activities once the acoustic sheds/ mitigation is in place. Operation and Commission of the ventilation shafts.	24 hours per day, 7 days per week
Heavy vehicle movements to and from the site except concrete deliveries during shaft sinking activities once the acoustic sheds/ mitigation is in place.	7.00 am to 6.00 pm, Monday to Saturday No movements on Sunday or Public Holidays

4.6 Heritage Management

The AMVA project site is subject to an Aboriginal Cultural Heritage Management Plan. There is one registered Aboriginal Cultural Heritage site located within the Project Area (AHIMS # 52-2-4769.). The area is fenced. This site includes six (6) artefacts previously associated with (AHIMS ID#52-2-3687) which were reburied on Country following consultation with Registered Aboriginal Parties (RAPs). The location of this reburial site was determined by the RAPs in consultation with ICHPL to ensure the burial location is outside of any potential disturbance area. The reburial location is highlighted in Figure 3 of this document.

In the unlikely event that additional heritage site(s)/item(s) are encountered, the unexpected finds methodology will be implemented. It is critical for the construction team to be aware that any suspected archaeological evidence must remain as it was found (in situ) until it is assessed by a qualified archaeologist, as per the below steps. These objects, where they are located and the material around them (referred to as the object's 'context') is critical for understanding their value to the Site and determining what may be located near to the area of the find. The object and its context are legally protected under the *NSW National Parks and Wildlife Act 1974* (aboriginal items or remains).

4.6.1 Discovery of Unanticipated Human Remains

The following actions will be taken in instances where human remains or suspected human remains are discovered. Any such discovery in the study area will follow these steps.

- Discovery: If suspected human remains are discovered all activity in the vicinity of the human remains must stop to ensure minimal/no additional damage is caused to the remains. The remains must be left in place and protected from harm or damage.
- Notification: Once suspected human remains have been found, the Coroners Office and the NSW Police must be notified immediately. Should NSW Police confirm the origin of the remains as non-human and provide a case number for ICHPL's records, no further action shall be taken. Following this, if the human remains are of suspected Aboriginal ancestral

origin, Department of Planning, Housing & Infrastructure (DPHI), Heritage NSW and representatives of the RAPs will be notified of the find and the process as outlined in the Environmental Compliance/Conformance Assessment and Reporting Procedure will be followed.

- Management: If the human remains are of Aboriginal ancestral origin an appropriate management strategy will be developed in consultation with RAPs, a suitably qualified archaeologist and Heritage NSW. If the human remains are identified as historical relics, then an appropriate management strategy will be developed in accordance with the Heritage NSW Skeletal Remains Guidelines. If the exhumation of human remains is subsequently required, these works must be undertaken in accordance with the *Public Health Act 1991* exhumation guidelines and relevant heritage guidelines.
- Recording: The find will be recorded in accordance with the requirements of the *NPW Act, Heritage Act 1977, Public Health Act 1991* and Heritage NSW guidelines as appropriate.

4.6.2 Discovery of Unanticipated Aboriginal Cultural Material

All Aboriginal places and objects are protected under the *NPW Act*. This protection extends to Aboriginal objects and places that have not been identified but might be unearthed during construction. The following contingency plan describes the actions that will be taken in instances where Aboriginal cultural material is discovered. Any such discovery in the study area will follow these steps.

- Discovery: Should unanticipated Aboriginal cultural material be identified during any surface works, works will cease in the vicinity of the find.
- Notification: DPHI and Heritage NSW will be notified of the find and the process as outlined in the Environmental Compliance/Conformance Assessment and Reporting Procedure will be followed.
- Management: In consultation with the Heritage NSW, RAPs and a qualified archaeologist, a management strategy will be developed to manage the identified Aboriginal cultural material. The management strategy will be incorporated into the relevant management plan.
- Recording: Any previously unrecorded Aboriginal cultural heritage sites identified during fieldwork (e.g. baseline recording, supplementary fieldwork, pre-clearance surveys, monitoring, follow-up inspections to assess the effectiveness of mitigation/management/remediation measures, etc.) will be recorded using the standard Heritage NSW site card. This information will be submitted to Heritage NSW for registration on the AHIMS database. Any previously unrecorded sites will also be subject to subsidence risk and impact assessments, and an archaeological and Aboriginal cultural significance assessment in consultation with Aboriginal stakeholders. Any previously unrecorded Aboriginal cultural heritage sites will be managed in accordance with the requirements of this HMP

Maps in the relevant management plans will be updated to include the location of any unexpected finds of confirmed Aboriginal objects to prevent inadvertent impacts from other operational activities.

DPHI will have the authority to approve the HMP that covers impact to new finds. Consultation will be undertaken with other agencies and RAPs as required.

4.6.3 Impacts to an Aboriginal Site

In the event that impacts are identified to an Aboriginal site the following should occur.

- Discovery: If impacts are identified during any surface works, all works in the vicinity of the site must cease.

- Notification: DPHI, RAPs and Heritage NSW will be notified of the find and the process as outlined in the Environmental Compliance/Conformance Assessment and Reporting Procedure will be followed.
- Management Actions:
    i. In consultation with Heritage NSW, RAPs, DPHI and a qualified archaeologist, the site will be inspected, and a management strategy developed. Suitably qualified specialists will be brought in to assist as required.
    ii. The management strategies will be implemented in accordance with current conservation practice and the conservation principles contained within the ICOMOS Australia Burra Charter. RAPs must be consulted regarding appropriate management methodologies and any advice will be taken into consideration in the development of the management strategies.
    iii. An appropriate monitoring program will be developed to report on the effectiveness of the management strategy.
- Reporting: A report detailing the impact, details of consultation, management actions undertaken and effectiveness of management actions will be completed by a qualified archaeologist within six months of the completion of the impact monitoring

Figure Redacted

Figure 5 Cultural Heritage Sites

4.7 Vegetation Management and Biodiversity

The AMVA Project disturbance footprint consists of highly modified native grassland vegetation which has a high representation of introduced species however, the construction of the AMVA Project will result in the clearing of a small amount of Plant Community Type (PCT) 849 Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion.

The impact of this clearing has been offset via the retirement of two (2) ecosystem credits for this PCT in October 2022 satisfying Condition 35A Schedule 4 of the Project Approval.

This Section describes how ICHPL proposes to manage and protect remaining vegetation during construction of the AMVA Project.

4.7.1 Vegetation and Biodiversity Management Protocols

To mitigate the biodiversity impacts from the construction the AMVA Project, the Project have undertaken the following measures prior to construction:

- Completed a Permit to Disturb prior to the commencement of any ground disturbance activities. The Permit to Disturb will outline the control measures that will be implemented during construction works to minimise environmental impacts, including vegetation clearance and manage compliance with the Project Approval.
- Demarcated the project boundary.
- Installed fencing around woodland areas shown in (See Figure 5). Fencing will be maintained throughout the construction phase of the AMVA Project
- Implemented the erosion sediment controls as detailed in Section 5.1.
- Clearly marked the disturbance boundary for the AMVA Project.
- Undertaken pest and weed management.

During construction the following measures will be implemented in relation to vegetation management and biodiversity management:

- Undertake regular inspection and maintenance of erosion and sediment controls during construction and until disturbed areas are vegetated/stabilised.
- Reduce the disturbance footprint where possible during construction.
- Undertake further pest and weed management.

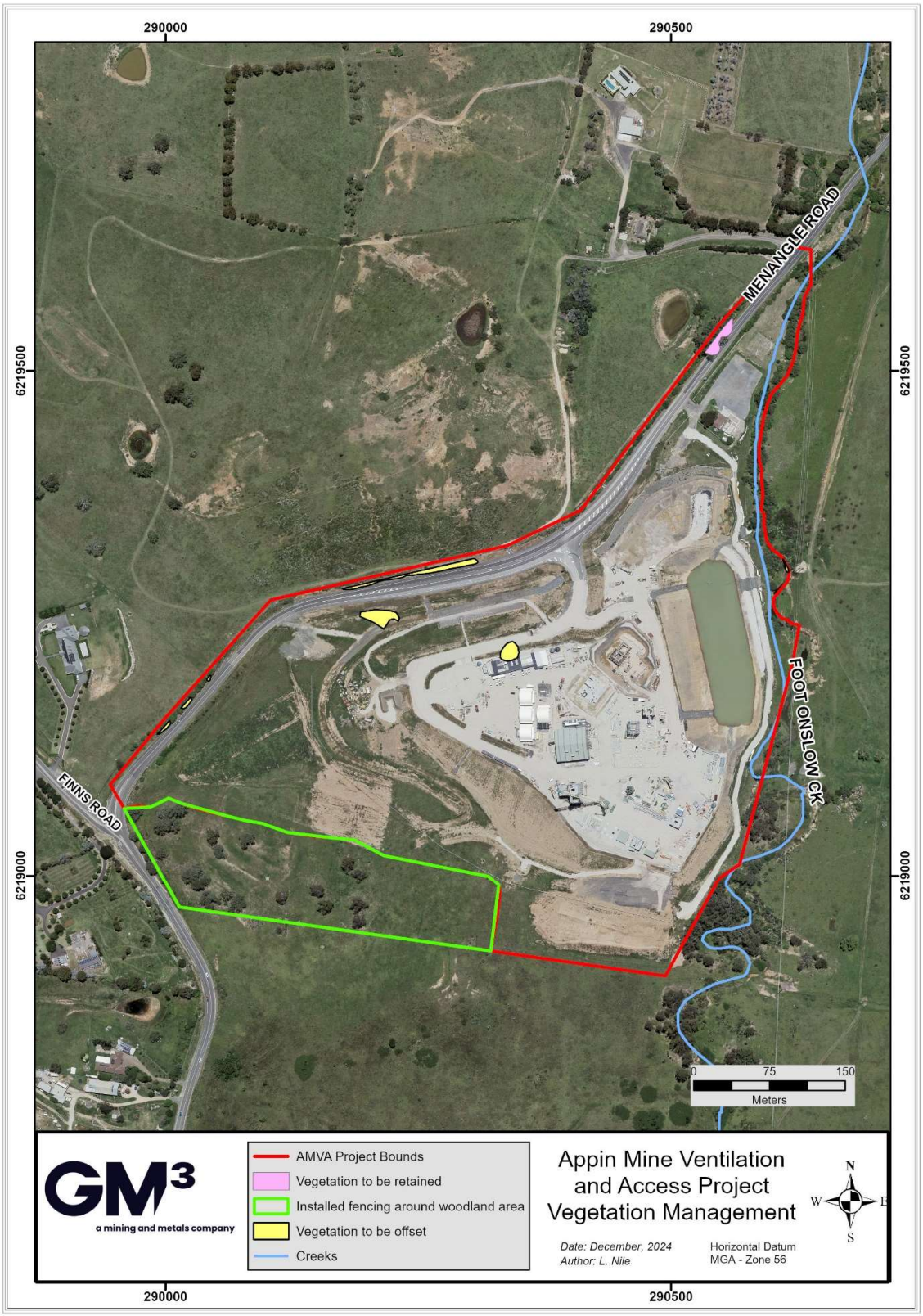


Figure 6 Vegetation Management at AMVA

4.7.2 Visual Amenity

A visual impact assessment was undertaken as part of the modification environmental assessment. This assessment identified that while the building colour palette (i.e. use of green and grey tones) will help the AMVA Project blend in with colors in the surrounding landscape, the built form and bulk will not contrast well with shapes and contours in the surrounding landscape. ICHPL will therefore implement the additional management measures as detailed in Section 4.7.2.1 to further mitigate the visual impacts of the AMVA Project.

4.7.2.1 Management and Mitigation Safeguards

During Early Works, initial vegetative screening was undertaken at the Project site and at neighbouring properties in accordance with Condition 27A of Schedule 4 of the Project Approval.

To provide further visual amenity to neighbours and the community, further tree screen plantings will occur along:

- The Site's boundary with Menangle Road (completed).
- The external perimeter of the noise attenuation bund.
- The eastern edge of the Site.

Tree screening on the Site will consist of locally endemic native plant species. In planning for the tree screening, ICHPL will be mindful of the Wollondilly Development Control Plan, particularly Part 11.2, Recommended Species (for landscaping). ICHPL have engaged a bush regeneration expert to plan the screening program.

To mitigate impacts from lighting ICHPL will:

- Arrange temporary lighting to minimise light spillage as much as possible without compromising safety or operations in accordance with AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting.
- Install permanent lighting as per the relevant standards but will consider visual amenity and light spill.

To mitigate visibility of the buildings/structures ICHPL will look to avoid the use of highly reflective materials or materials not commensurate with the surrounds, as is practicable.

4.7.3 Weeds

There is the potential for invasive weed species to become established at the Site due to ground disturbance activities. The *NSW Biosecurity Act 2015* includes mechanisms (i.e. regulatory tools) that can be used to manage weeds in NSW. Of relevance to the AMVA Project is the General Biosecurity Duty (GBD). The purpose of the GBD is to manage the spread and/or impact of all weeds that pose a biosecurity risk. The GBD is in addition to any requirements included in a control order, biosecurity zone or other instrument made under the *NSW Biosecurity Act 2015*.

For weeds, the GBD means that any person dealing with plant matter must take measures to prevent, minimise or eliminate the biosecurity risk (as far as is reasonably practicable).

4.7.3.1 Weed Management Measures

ICHPL will implement the following mitigation measures to reduce the risk of weed establishment and spread during construction:

- Vehicles will enter and leave the Site via defined entry points and use constructed roads where practical.
- Disturbed areas will be re-sown as soon as practicable to minimise the area of exposed soil for weed establishment and spread.
- Weed species located on site will be controlled by a suitably qualified and licensed contractor.

4.8 Topsoil Management

4.8.1 Topsoil Salvage/Stripping

Topsoil is the surface soil layer which contains organic and mineral matter and is an important contributor to effective rehabilitation post-construction. Topsoil can have high environmental value as it contains both nutrients and native seed stock that can germinate following reinstatement. Generally, topsoil is salvaged to the next soil layer (i.e. sub-soil). Most of the salvaged topsoil will be generated during bulk earthworks. Where topsoil is available, the following measures will be adopted to protect its quality and enhance rehabilitation outcomes:

- Where practical, topsoil will be directly placed on reshaped disturbance areas which are available for rehabilitation.
- Topsoil stripping activities will be supervised to maximise topsoil recovery and minimise mixing of soil profiles.
- When direct placement of topsoil is not practicable, stockpiles will be formed, located away from traffic areas and watercourses.
- Topsoil and subsoils will be stockpiled separately.
- Level or gently sloping areas will be selected as stockpiles sites to minimise erosion and potential soil loss where practicable.
- Appropriate sediment controls will be installed at the base of stockpiles to prevent soil loss.
- Stockpiles to be kept longer than three (3) months will be sown with a suitable cover crop to minimise soil erosion and invasion of weed species.
- Weed growth will be monitored and subsequently controlled as necessary.

Topsoil stockpiles will be no greater than three (3) m in height to preserve soil structure, maximise surface exposure and biological activity.

4.9 Waste and Fuels Materials Management

The major waste streams expected and the primary waste minimisation strategy for the AMVA Project are shown in Table 6.

Table 6 Waste Stream Identification, Classification and Management Strategy

Waste Stream	Minimisation Strategy
Sewage/effluent	Off-site Recycle/Disposal as appropriate
Oily water	
Waste oil	
Parts, washers and liquid waste	
Degreaser	
Engine coolant	
Food Waste	Off-site Landfill
Municipal Waste	Off-site Landfill

Waste Stream	Minimisation Strategy
Paper and cardboard	Off-site Recycle
Silt, sediment and leaf litter	Reuse on Site
Organic Waste	Mulch and reuse on Site
Wood Waste	Off-site Recycle/Disposal as appropriate
Concrete Waste	Off-site Recycle/Disposal as appropriate
Virgin excavated natural material	Reuse on Site
Building and demolition waste	Off-site Recycle/Disposal as appropriate
Scrap metal	Off-site Recycle
Air filters	Off-site Landfill/recycle as appropriate
Plastic drums	Off-site Recycle/Disposal as appropriate
Batteries	Off-site Recycle/Disposal as appropriate
Oily rags	
Oil absorbent material	
Oil filters	
Empty oil drums	
Waste grease	

4.9.1 Material Imports

Any raw materials bought to site (aggregate or sand) should be classified as suitable for the land use, in accordance with NEPM (2012) and any relevant EPA guidelines and Regulations made under the *Protection of the Environment Operations Act* and *Regulations*. For example, recovered aggregate from the washing process at Dendrobium may be used where it meets the requirement of Resource Recovery Order Part 9, Clause 93 of the *Protection of the Environment Operations (Waste) Regulation 2014*, The Recovered Aggregate Order 2014.

4.9.2 Waste Stream by Classification

Waste classification for the receival and the disposal of material for the AMVA Project will be undertaken in accordance with the EPA Waste Classification Guidelines (2014). Under the guidelines (Part 1) waste is classified into six (6) waste classes:

- Special waste.
- Liquid waste.
- General solid waste (putrescible).
- General solid waste (non-putrescible).

- Hazardous waste.
- Restricted solid waste.

4.9.3 Fuel and Corrosive Materials Storage

Fuel will be stored and managed in accordance with AS1940: The storage and handling of flammable and combustible liquids. Corrosive substances will be managed in accordance with AS 3780: The Storage and Handling of Corrosive Substances.

4.9.4 Spill Response Protocol

The ICHPL spill management procedure defines the steps to be undertaken (i.e. spill response and clean up) to prevent environmental contamination by substances used at ICHPL and to ensure prompt, safe and effective spills management across all ICHPL sites.

The procedure applies to all substances in use, or being stored, handled and transported by employees, visitors and contractors of ICHPL that have the potential to cause harm to the environment or personnel. This includes (but is not limited to):

- Oils, fuels and greases (hydrocarbons).
- Chemicals.
- Degreasers.

For management of spills located on external roads (i.e. Menangle Road etc.), spill response should be coordinated with TfNSW. Call 000.

The key steps with regards to handling a spill on an ICHPL site are shown in Figure 3



Figure 7 Spill Response Protocol

Consider

- Perform an appropriate risk assessment (Take 2 or Task Analysis) to assess the risk and determine what PPE or safety measures are appropriate for the spill event, substance and surrounding conditions.
- Refer to Chemalert for handling requirements.

Contain/control

- Barricade the area to prevent unauthorised access. Personnel safety is paramount and should be assessed as the initial response if personnel are involved and/or injured.
- Isolate the source of the spill (if safe to do so and there is a no immediate risk of spilled material entering stormwater drains or the site water management system). This may include turning off a valve or tilting the leaking container.
- If safe, stop the spill from spreading and potentially entering drains and waterways via the use of spill kits, absorbent material, booms etc.
- If the spill has entered the site drainage system, isolate drain or pipe valves (where possible) to contain the spill in the existing drains to prevent the water entering into the site sediment ponds.
- If required, inform your site supervisor to initiate emergency response operations through the site-specific Emergency Response Management Plan, or to gather more assistance or materials for containing large spills.
- If the spilled substance is entering the site water management systems or exiting the site, contact the Environment Team to coordinate the collection of samples to determine environmental impact (if relevant).

NOTE: Two types of spill kits are in use on sites – general purpose and hydrocarbons.

1 General purpose spill kits can be used for both chemical and hydrocarbon spills (usually for water soluble material (hydrophilic)).
2 Hydrocarbon spill kits can only be used for hydrocarbon (oil, grease and diesel) spills (usually for hydrophobic liquids, non-water soluble).

Clean up

- Clean up any remaining materials. Dispose absorbent material in accordance with the disposal requirements as detailed in Section 4.8.1.
- Small volumes of used absorbent material can be disposed in general waste or dedicated hydrocarbon waste bins, if applicable. General waste bins are located in various locations at the Site. Spill sorbent materials used from spill kits must be disposed of in a separate bin for appropriate disposal by a waste contractor.

Report - internal

Fill out an event report for entry into the incident reporting system. Spills are to be classified as follows:

- 0 – 25 L – Hazard Report
- 25 L and above – Event Report

Report - external

If there was actual or potential material environmental harm (as defined under s147 of the *Protection of the Environment Operations Act*), there may be a requirement to make a notification to the EPA or other regulatory agencies. This will be determined by the relevant Environment Team member.

Harm to the environment is determined to be material (as defined in the Project Approval) if is harm that:

- involves actual harm to the environment that may include (but not be limited to) a leak, spill, emission other escape or deposit of a substance, and as a consequence of that environmental harm (pollution), may cause harm to the health or safety of people; or
- it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)

To determining whether harm is material, it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.

5 SURFACE AND GROUNDWATER MANAGEMENT

5.1 Surface Water and Erosion Sediment Control Plan

Sediment and surface water runoff generated as a result of the AMVA Project has the potential to impact water quality. The uncontrolled release of sediment-laden waters may cause impacts to water quality by changing water quality parameters such as turbidity, pH, dissolved oxygen (DO) and electrical conductivity (EC).

The measures implemented to control and manage erosion and sediment that may result from construction activities include:

- Minimising all disturbed areas and progressively stabilising as soon as practical.
- Identifying and delineating disturbance areas and ensuring that disturbance is limited to those areas.
- Designing and constructing diversion banks upslope of disturbance areas, where practical, to direct clean water runoff away from disturbed areas and allow clean surface water to return to natural watercourses.
- Constructing catch drains to capture runoff from disturbed areas and direct dirty water to the sediment pond.

- Constructing other erosion and sediment control measures such as sediment fences and check dams and energy dissipation structures within catchment areas.
- Constructing drainage controls such as table drains at roadsides and on hardstand areas and toe drains on stockpiles/emplacement areas.
- Managing sediment pond as per design requirements in regard to discharge, freeboard, settlement zone and sediment storage zone, flocculation and discharge water quality requirements.
- Placing geotextile liners and rock check dams in drains as required to reduce water velocities and prevent scouring.
- Regularly maintaining all controls and inspecting all works weekly and after storm events to ensure erosion and sediment controls are performing adequately.
- Revegetating final landforms (natural landform and drainage design) and disturbed areas, as soon as possible.
- Repairing or redesigning erosion and sediment controls that are not performing adequately, as identified during field inspections.
- Completing a Permit to Disturb prior to the commencement of ground disturbance activities. The Permit to Disturb will reference the erosion and sediment control plan for the construction works to manage dirty water discharges from the Site and protect the clean water systems.

5.1.1 Erosion and Sediment Control Structures

ICHPL will implement (i.e. construct and maintain) the Erosion and Sediment Control Plan (ESCP) as shown on Figure 7. The ESCP incorporates a range of permanent structures which have been designed to minimise the potential for discharge of dirty water off Site.

The principal erosion and sediment controls used by ICHPL include:

- Clean water diversion drains.
- Catch drains for dirty water.
- Sediment ponds for dirty water management.
- Temporary controls (e.g. sediment fence).

Specific environmental controls for individual work areas will be developed based on the task and included in job planning documents (SWMS, pre-start and Construction Management Plans). These plans will be developed by specialist contractors and will be consistent with the requirements and strategies set out in this CEMP.

5.1.2 Clean Water Diversion System

To minimise the volume of water managed by the AMVA Project's dirty water management system, diversion drains have been constructed (during Early Works) upslope of disturbance areas to convey clean water runoff away from the disturbed areas and prevent water from entering the construction areas and the dirty water management systems. This clean water runoff is diverted into nearby watercourses.

All diversions are designed generally in accordance with the 'Blue Book' Managing Urban Stormwater – Soils and Construction Volume 1 (Blue Book) (Landcom, 2004) and Volumes 2A, 2C, 2D and 2E (DECC 2008) to cater for a minimum 100-year Average Recurrence Interval (ARI) storm event.

5.1.3 Sediment Pond

The sediment pond (Figure 7) will be used to capture and treat dirty water prior to discharge. A licence discharge point (LDP 41) from the Sediment Pond to Foot Onslow Creek is included in the BSO EPL 2504 which includes the following water quality requirements for discharge:

- pH 6.5-8.5; and
- Total Suspended Solids (TSS) 50 mg/L.

The sediment pond will be inspected by ICHPL and cleaned out as required to maintain capacity (i.e. settling and sediment zones) in accordance with the 'Blue Book'.

If necessary, flocculation is used to improve the quality of sediment laden water prior to discharge (in accordance with the 'Blue Book').

The sediment pond will be maintained throughout the life of the Project into operations.

The sediment pond has been designed to capture a 1 in 10-year, 72-hour duration storm event. The pond will have a maximum capacity of 24.5 ML, a depth of 4.93 m, a wall height of 2.5 m and a 150 mm freeboard.

The sediment pond will be maintained in a drawn down state as far as practicable. This is achieved by using the sediment pond water for:

- Dust suppression, bulk earthwork compaction, revegetation and shaft sinking activities.
- Treated to the relevant water quality criteria as described in the EPL prior to being discharged from the Site.

Overflow via the spillway from the sediment pond is via LDP 42.

5.1.4 Catch Drains

The AMVA Project's dirty water management system includes diversion drains, catch drains, batter chutes and scour protection and a sediment pond. The catch drains and associated structures are established to convey runoff from the disturbed areas to the sediment pond. The pad has been designed to be free-draining and directs all dirty water to the sediment pond via a series of diversion drains, chutes and culverts which are located primarily along the perimeter of the pad.

All catch drains are designed to convey peak discharges from a minimum critical duration of a 1 in 10-year ARI storm event.

5.2 Hydrogeology

The geology of the Site comprises Wianamatta shales underlain by Hawkesbury Sandstones (HBSS). Vertical groundwater flow continuity in the Wianamatta Group is retarded by the Ashfield Shale.

The general groundwater regime for the Project area comprises:

- Perched groundwater systems associated with the Wianamatta Group. These perched water tables are hydraulically disconnected from the deeper groundwater systems;
- Shallow groundwater systems comprising layered water-bearing zones within the saturated HBSS. The highest yielding groundwater bores are typically associated with coarse sandstone units and/or fractured sandstone; and
- Deeper groundwater systems within the Narrabeen Group and the Illawarra Coal Measures. These units typically are of much lower permeability than the HBSS and produce low bore yields and poorer water quality.

The main aquifer in the Project area is the HBSS. Recharge to this system is from rainfall and lateral groundwater flow and discharge is to incised streams and loss by evapotranspiration in outcrop areas.

A groundwater assessment was undertaken during the Environmental Assessment (HGeo, 2021) to simulate hydrogeological conditions in the AMVA Project area and predict impacts to groundwater resources during excavation and ongoing use of the ventilation shafts. Predicted drawdown due to the AMVA Project is negligible at most registered bores within the modelled area. Negligible impacts to farm dams are predicted as farm dams in the Project area are shallow and effectively perched within the upper weathered horizons of the Wianamatta Group.

During shaft sinking activities groundwater inflows will be encountered as the shaft is advanced through the stratigraphy and associated groundwater systems and this would comprise the incidental 'take' or diversion of groundwater caused by the project. The predicted groundwater inflows for construction and operational phases, including controls (Section 5.3) are shown in Table 7. To ensure shaft sinking efficiency, groundwater inflows will be minimised by targeted grouting of fractured zones and advance pre-grouting of fractured strata. With increased controls (additional grouting) actual inflows are likely to be lower than those predicted.

Table 7 Predicted Groundwater Inflows for VS 7 & 8

Year	Phase	VS7 INFLOWS (ML/year)	VS8 inflows (ML/year)	Total predicted inflows (ML/year)
Year 1 (2024)	Construction	19.3	11.1	30.4
Year 2 (2025)	Construction	29.9	29.9	59.8
Long-Term	Operations	0.07	0.07	0.14

5.3 Groundwater Management During Shaft Construction

5.3.1 Water Allocation

The *Water Act 1912* and *Water Management Act 2000 (WM Act)* provide the framework for the allocation and management of water in NSW and require a licence or approval for taking water. The main tool in the *WM Act* for managing the state's water resources are Water Sharing Plans, which set out the rules for sharing and trading water within a water source. The AMVA Site is in 'Nepean Management Zone 2' (MZ2) of the Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources 2011. ICHPL hold two WALs in MZ2 which licence groundwater take for Project. The WALs are summarised in Table 8.

Table 8 Water Access Licences held by ICHPL in Nepean Management Zone 2

WAL number	Category	Tenure type	Extraction times or rates	Share component (ML/yr)
36477	Aquifer	Continuing	Subject to conditions water may be taken at any time or rate	303
37464	Aquifer	Continuing	Subject to conditions water may be taken at any time or rate	300
TOTAL				**603**

Miscellaneous works approval 10MW119346 is in place.

The Appin Mine Annual Review reports that the water take due to groundwater ingress at Appin Mine was 745 ML in the FY24 reporting period. Total mine take for groundwater is reported against both Sydney Basin Central Groundwater Zone (within which ICHPL holds two licenses and Nepean Management Zone 2). Modelling indicates that the Project may result in an incidental 'take' or diversion of up to 59.8 ML/year of groundwater in 2024, with ongoing operational seepage of less

than 0.14 ML/year. The share allocations of Water Access Licenses held by ICHPL (totalling 975 ML/ year) is sufficient to account for any incidental groundwater take at the Site.

5.3.2 Pre-Grouting

During hydrogeological investigations (Pitt and Sherry, 2021) a higher permeability unit was encountered at the boundary of the Wianamatta Group and the HBSS. To control groundwater inflows prior to shaft sinking (including pre-sink), targeted grouting of these horizons was undertaken in March to May 2023 prior to advancement of the shafts. Pre-grouting involved:

- Advancement of 25-30 small diameter (HQ) Reverse-Circulation (RC) drill holes per shaft to a depth of ~ 75 m.
- Injection of cement and hardener to the full depth of the hole at pressure.

Pre-grouting aimed to achieve a decrease in hydraulic conductivity in the subject horizons and allow for shaft sinking to be undertaken with groundwater inflows reduced to < 1.5 L/sec. D&G Resources (2023) reported that the grouting campaign achieved the result to reduce the conductivity of the high conductivity zones by more than a factor of 10.

5.3.3 Shaft Lining

The shafts will be lined as they are progressed by progressive pouring of a non-hydrostatic concrete lining closely behind the working area during excavation of the shaft. The works will be undertaken such that a maximum of 15 m of unlined wall is exposed at any time through the depth of the shaft.

5.3.4 Transport of Groundwater Inflows

During construction, groundwater inflows will be collected within the shaft within a water ring. This feature forms a ring around the base of intercepts with higher permeability units (or interface between strata) and collects all water ingress. The water is then pumped to the surface for storage and subsequent transport to disposal locations.

5.3.5 Surface Storage of Groundwater

Groundwater collected during shaft sinking will be stored in a series of holding tanks located on the site. The volumes of these tanks have been designed to allow for the storage of projected out of hours (OOH) collection volumes, prior to reuse on site or transport to offsite locations, acknowledging the restrictions on heavy vehicle movements described in Section 4.5 (Construction Hours).

5.3.6 Disposal Locations

Groundwater collected during shaft sinking will be reused on site, or transported to water treatment facilities within the Appin Mine water management networks and processed for eventual discharge or reuse in accordance with EPL 2504 and the approved Appin Mine Water Management Plan. If required, shaft water may also be transported off site for discharge at appropriately licenced facilities.

5.3.7 Monitoring

ICHPL will monitor the volume of groundwater inflows from VS7&8 to inform reporting against requirements of the *WM Act*. Inflows will be measured by pumping volumes conveyed to the surface during shaft sinking. A record of daily volumes will be kept and will be available to the DPHI and WaterNSW on request.

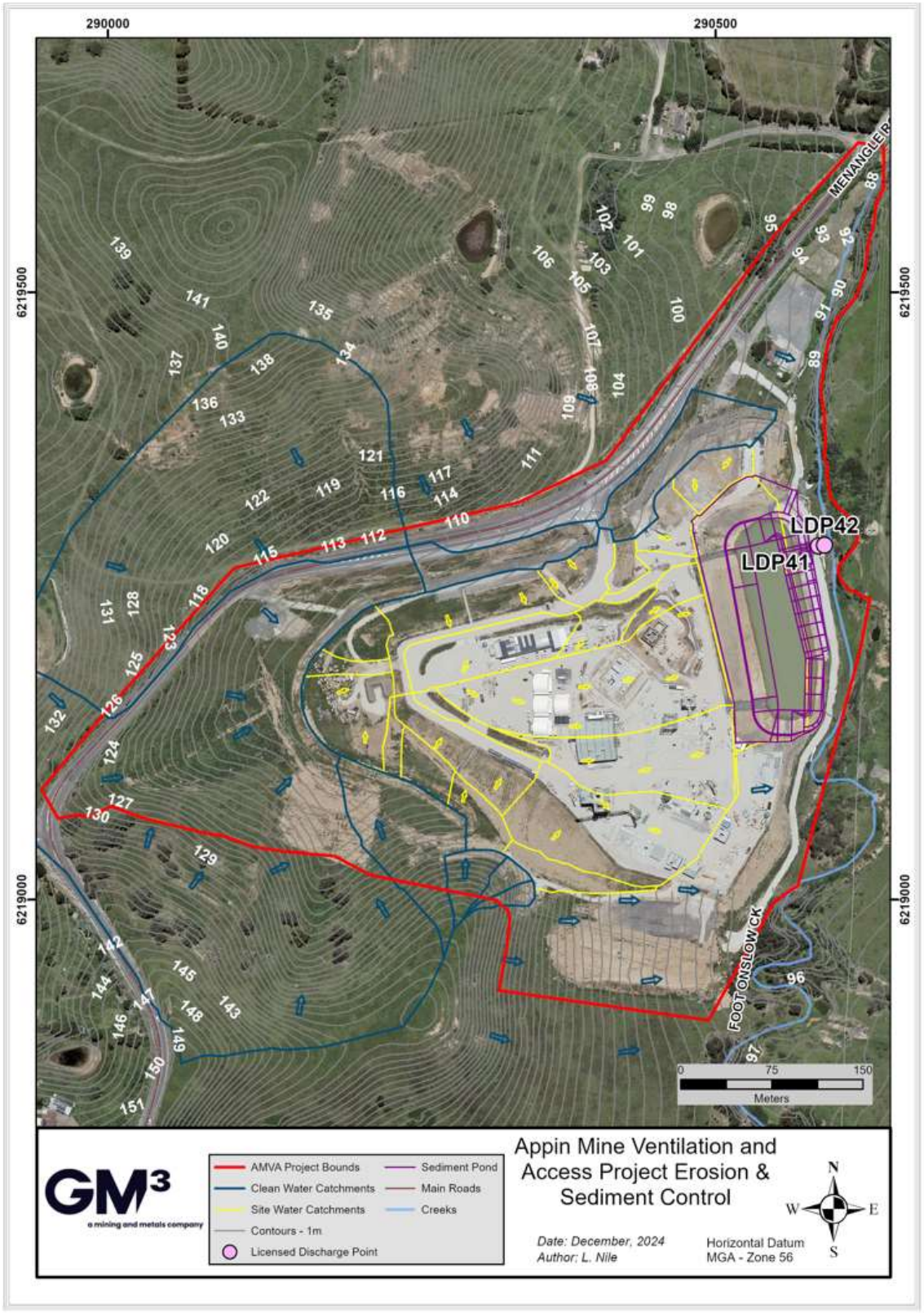


Figure 8 Sitewide Erosion and Sediment Control Plan

6 NOISE MANAGEMENT PLAN

This Noise Management Plan (NMP) describes how ICHPL proposes to manage and protect the environment from noise impacts during construction of the AMVA Project and has been prepared to address the requirements of Condition 11(f) of Schedule 4A of the Project Approval.

6.1 Receivers

The AMVA Project is located within an area of mixed land use consisting of grazing, rural residential, residential township (Menangle), mixed agriculture and small business. The identification of the surrounding receivers was completed as part of the modification environmental assessment. Minimising noise from construction at these receivers is the key performance objective of this NMP. Appendix 5 of the Project Approval provides the location of sensitive receivers. Figure 8 provides a summary of those assessed in the Environmental Assessment associated with Modification 3.

6.2 Noise background levels

Background noise monitoring was undertaken in October and November 2020 as part of the modification environmental assessment (Niche, 2021), at R1, R4, R7 and R13 (shown in Figure 9) to quantify the existing ambient noise levels and Rating Background Levels (RBLs). The noise monitoring locations were chosen to be representative of the nearest and most potentially affected surrounding receivers and were used to establish the AMVA Project specific construction NML which are summarised in Table 9.

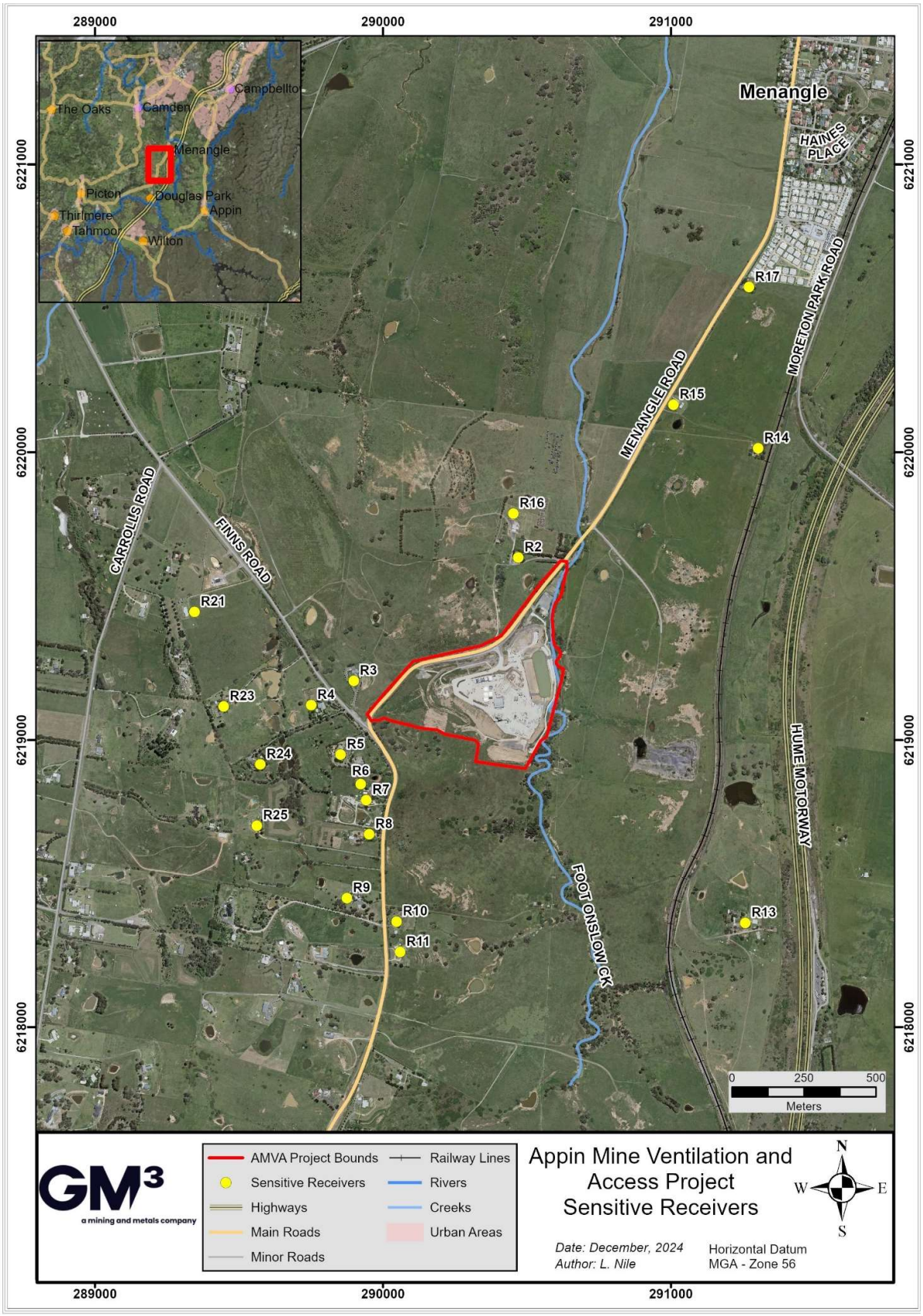


Figure 9 Sensitive Receivers as Identified in Project Approval

Table 9 AMVA Project Rating Background Levels

Receiver	Time of Day	RBL (dBA)	Project Intrusiveness Noise Level
All nearby residences	Day	38	43
	Evening	39	43
	Night	34	39

Source: Noise and Vibration Impact Assessment (RWDI, 2021)

6.3 Noise Agreements

R3, identified in Figure 3 has been acquired by Endeavour Coal Pty Ltd (a subsidiary of South32) and therefore is not considered a sensitive receiver for the purposes of this CEMP or sub-ordinate plans. R2 and R16 also identified in Figure 9 have entered into a negotiated noise agreement with Endeavour Coal Pty Ltd (subsidiary of ICHPL). In accordance with the requirements of the Project Approval, the Planning Secretary has been notified of these agreements and for the purposes of compliance, the criteria specified in Table 2b Condition 2C Schedule 4 does not apply to R3, R2 or R16.

6.4 Surface Construction Noise Management Requirements

ICHPL has committed to implement all reasonable and feasible noise mitigation and management measures to reduce noise during construction. In particular, these include restricting construction activities to the daytime period (see Construction Hours) until acoustic sheds or alternative noise mitigation are constructed for the ventilation shaft construction areas (Early Works). Construction of the shaft headframe buildings was completed in late 2024.

In accordance with Condition 7b of Schedule 2, any works that are inaudible at residential premises may be undertaken 24 hours a day, 7 days a week.

In accordance with Condition 1 Schedule 4A, noise generated by the pre-construction and surface construction activities (defined in Section 1.3.1) will be managed in accordance with the requirements of the Interim Construction Noise Guidelines (ICNG) (DECC, 2009). The ICNG provides guidelines for the assessment and management of construction noise. The ICNG focuses on applying a range of work practices to minimise construction noise impacts rather than focusing on achieving numeric noise levels. The main objectives of the ICNG are to:

- Promote a clear understanding of ways to identify and minimise noise from construction works.
- Identify and minimise noise from construction works.
- Focus on applying all ‘feasible’ and ‘reasonable’ work practices to minimise construction noise impacts.
- Encourage construction during the recommended standard hours only, unless approval is given for works that cannot be undertaken during these hours.
- Reduce time spent dealing with complaints at the Project implementation stage.
- Provide flexibility in selecting Site-specific feasible and reasonable work practices to minimise noise impacts.

6.4.1 Surface Construction Noise Management Levels

The NML for surface construction) have been derived in accordance with the ICNG. Table 10 shows the NMLs at residences and how they are to be applied during construction of the AMVA Project.

6.4.2 Application of Construction Noise Management Levels

Table 10 Noise Management Levels at Residences for Surface Construction)

Time of Day	NMLA eq (15mins)	How to Apply
Recommended standard hours: Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays	Noise affected RBL +10 **(48 dBA)**	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise Affected **(75 dBA)**	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: • times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences • if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours	Noise affected RBL + 5 dB	A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the community.

6.5 Shaft Sinking Activities Noise Management Requirements (Main Sink)

6.5.1 Predicted Noise Impacts

The Noise and Vibration Impact assessments undertaken during the EA process (RWDI, 2021a) (RWDI, 2022) indicates that shaft sinking, and surface construction activities could comply with the noise criteria set out in Table 2B of condition 2C, Schedule 4 (the noise impact assessment criteria) without the use of acoustic sheds/ mitigation[2]. Notwithstanding this, ICHPL will monitor noise levels onsite during construction using real-time monitoring as a management tool and to inform where there is potential for noise impacts at remaining receivers.

[2] Excluding receivers R3 (acquisition), R2 and R16 where a negotiated agreement is in place.

6.5.2 Shaft Sinking Activities Noise Criteria

"Construction" as defined in the Project Approval is described in Section 1.3.2. In relation to required noise criteria, Schedule 4A, Condition 2 of the Approval states;

The Proponent must ensure that the noise generated by shaft sinking activities at the Appin Mine Ventilation and Access Site does not exceed the noise impact assessment criteria set out in Table 2B of condition 2C, Schedule 4 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.[3] The criteria specified in Table 2B of condition 2C, Schedule 4 is shown in Table 11.

Table 11 Construction Noise Criteria

Location	Day	Evening	Night	
	$L_{Aeq\ (15\ Min)}$	$L_{Aeq\ (15\ Min)}$	$L_{Aeq\ (15\ Min)}$	L_{Amax}
All privately Owned Residences or on more than 25 percent of any privately-owned land	43	43	39	54

Day = 7.00am – 6.00pm; Evening = 6.00pm – 10.00pm; Night = 10.00pm – 7:00am

6.6 Noise Monitoring Program

6.6.1 Overview

Any Project-related noise impacts experienced at the receivers identified in Figure 9 will be a result of:

- the Sound Power Levels (SWL) and location of equipment undertaking work;
- the surrounding topography;
- meteorological factors; and
- the efficacy of management protocols implemented by the Project.

These set of factors are unique to the Project Site and therefore the noise monitoring protocols presented in this CEMP (and Noise Management Plan) focus on delivering outcomes which align with the ICHPL EMS (Section 4.1) by evaluating:

- Noise generated by the project during construction and projected noise levels at receivers.
- The efficacy of controls being implemented (and requirement for additional controls including headframe cladding or screening)
- The impact of Noise-Enhancing meteorological conditions.

Where changes to the management and monitoring protocols included in this plan are required, ICHPL shall consult with the EPA and submit the Noise Management Plan for approval in accordance with Condition 11 of Schedule 4A.

6.6.2 Realtime Noise Monitoring Protocol

Real-time (unattended) noise monitoring will be undertaken throughout the schedule, at the locations as shown on Figure 10. These locations were selected to be located in the direction of the receivers at the relevant site boundary. Placement at these locations will allow ICHPL to assess noise levels being generated in the direction of receivers and allow for operational management of noise at the site. Data collected by the monitors will be analysed regularly to evaluate noise levels. The real-time noise monitoring units will be used to:

[3] *However, these criteria do not apply if the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.*

- Identify variations in noise levels which can be related to construction.
- Evaluate the effectiveness of noise mitigation measures.
- Monitor noise generated at the Site and background levels.
- Make predictions to determine when impacts are approaching NML's at receivers (and therefore require compliance monitoring and/or management.
- Manage construction activities on site to assist in the compliance of noise management requirements under the ICNG.

The real time noise monitoring protocol is summarised in Figure 11. Real-time monitoring will be a key tool used by the AMVA team to inform, monitor and improve environmental performance for noise consistent with the approach to environmental performance management detailed in Section 4.1. .

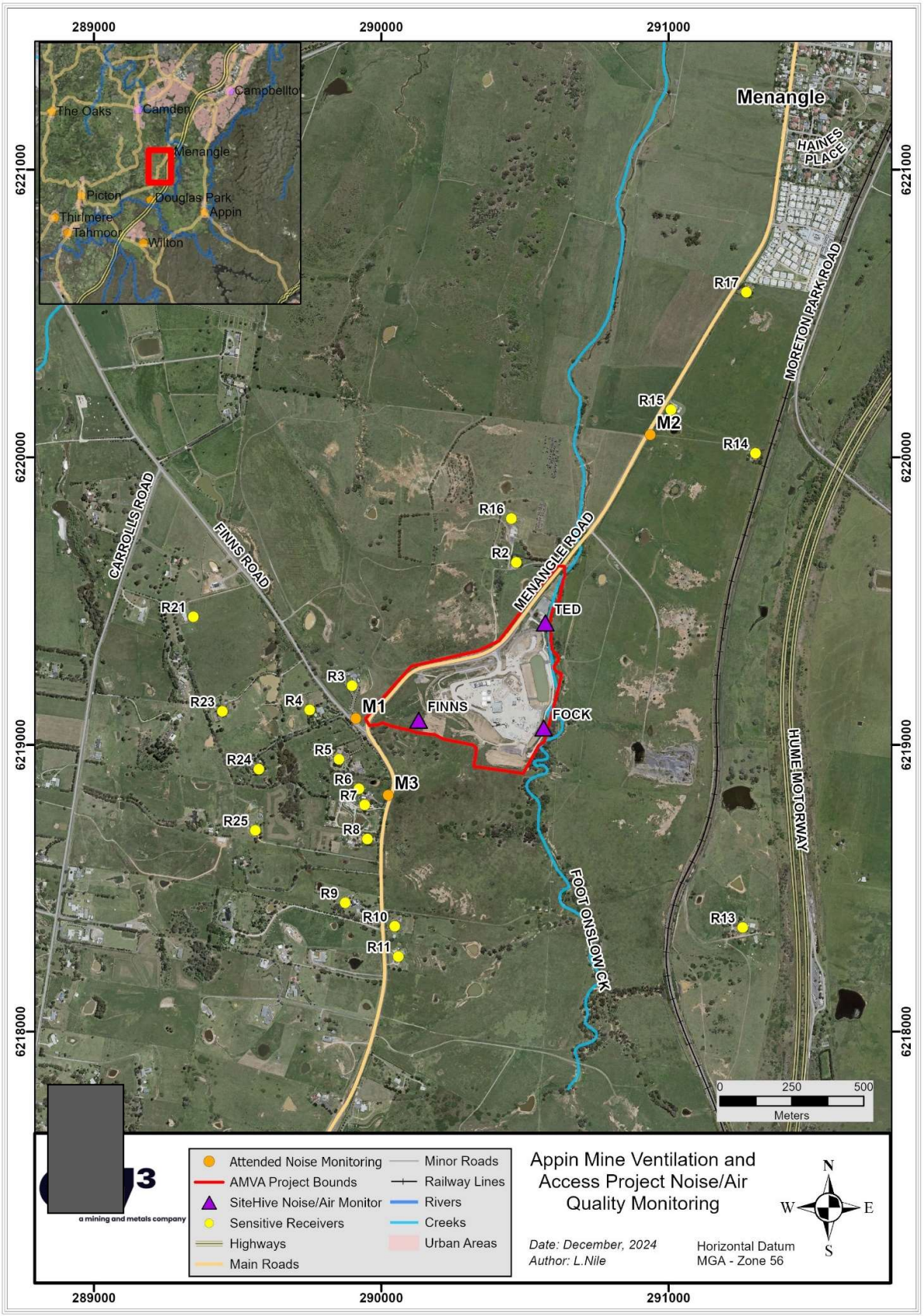


Figure 10 Realtime Air Quality and Noise Monitoring Locations



Figure 11 Surface Construction Works Real Time Monitoring Protocols

6.6.3 Attended Noise Monitoring Protocol

Attended noise monitoring will be undertaken quarterly at (or nearby) receivers in order to:

- Develop a greater understanding of noise impacts generated by shaft sinking activities at receivers.
- Inform detailed engineering requirements for noise mitigation during main sink.
- Provide information which will assist ICHPL and their contractors in managing activities in accordance with the requirements of the ICNG.

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

- AS1055-1997 Acoustics - Description and Measurement of Environment Noise – General Procedures.

- AS IEC 61672.1 – 2004 - Electroacoustics – Sound Level Meters, Class 1 sound level meter and calibrator.

All acoustic instrumentation used for monitoring under the Noise Monitoring Program shall comply with the requirements of AS 1259.2-1990 - Sound Level Meters and will have current National Association of Testing Authorities (Australia) (NATA) or manufacturer calibration certificates.

6.6.3.1 Completing the Measurement

The attended noise measurements shall be conducted for a minimum of 30 minutes utilising full spectrum time and frequency domain approaches for extracting project noise from the ambient noise environment. During the attended measurement, a log shall be maintained of road traffic or site operations as is relevant to the measurement being undertaken.

Measurement locations shall be in accordance with the Project Approval and EPA noise guidelines for construction, industrial or road traffic noise as is appropriate for the measurement. These attended noise measurements shall consider the effects of:

- Meteorological effects on noise propagation for site noise.
- Extraneous noise levels including uncertainty caused by the ambient L_{A90} noise level at the time of the measurement.

Additionally, staff, equipment and measurements must meet the following NSW requirements:

- Conditions of Project Approval.
- Noise Policy for Industry, Section 7.
- Approved methods for the measurement and analysis of environmental noise in NSW (EPA 2022).
- Interim Construction Noise Guideline, Section 8 Evaluating performance and compliance, 8.2 For a quantitative assessment.
- Class 1 sound level meter as specified in AS/NZS IEC 61672.1 Electroacoustics: sound level meter specifications.
- Calibrated in a NATA accredited to laboratory to AS/NZS IEC 61672.1, IEC 61260.3.

6.6.3.2 Investigating Noise Complaints

In addition to the protocols specified in Condition 2, Schedule 5 of the Project Approval, where a receiver considers the project to be exceeding the relevant criteria in Schedule 4, ICHPL shall:

- Complete a premeasurement review.
- Where the premeasurement review indicates that noise levels from the site may have been a factor, proceed with the attended noise measurement under conditions as close as practicable to the period of the complaint within seven (7) calendar days.
- Review the measured noise levels, adjusted to reflect site conditions at the time of any complaint when appropriate, to inform further actions.
- Further actions may include, but not be limited to:
    - Noise tests of site equipment against the assumed Sound Power Levels in the Project Noise and Vibration Impact Assessment (NVIA).
    - Review of operational scenarios against approved operations.
    - Mitigation of noise from plant and operations (refer to Section 6.7).

6.6.3.3 Responding to an Exceedance

Where a noise exceedance is determined through attended compliance monitoring, then ICHPL shall undertake notifications as detailed in Condition 1 of Schedule 5 of the Project Approval.

6.7 Noise Mitigation

6.7.1 Surface Construction Noise Management Strategies

ICHPL will undertake surface construction works in accordance with the requirements of the ICNG. During this time ICHPL will utilise Realtime monitoring and daily site logs (See Section 6.6.2) to continually assess the extent of additional noise management required.

Where noisy works are identified or anticipated a range of potential management interventions may be prescribed. These are;

- Monitoring the work plan and scheduling nosier activities during appropriate times.
- Considering the selection of plant and processes with reduced noise emissions.
- Controlling noise at the source by using equipment fitted with appropriate sound attenuation, where practical (5-10 dBA reduction).
- Turning off machinery when not in use (1-5 dBA reduction).
- Orienting equipment away from sensitive receivers (3-5 dBA reduction).
- Carrying out loading and unloading away from sensitive receivers (3-5 dBA reduction).
- Employing non-noise generating structures such as Site offices, storage sheds, stockpiles and tanks as noise barriers (5-10 dBA reduction).
- Using screens or enclosures for stationary equipment (10-15 dBA reduction).
- Avoiding using noisy plant simultaneously and/or close together, adjacent to boundary with sensitive receivers (2-3 dBA reduction).
- Using dampened tips on rock breakers (3-6 dBA reduction).
- Maximising the offset distance between noisy plant items and sensitive receivers (3-6 dBA reduction).
- Using portable temporary screens (5 -10 dBA reduction).
- Where possible, strategically placing plant and equipment to minimise noise escaping from Site and containing within suitably designed noise mitigation structures.
- Maintaining equipment to manufacturer specifications to achieve high availability and to meet noise emission criteria.
- Conducting noise management training with relevant personnel and completion of regular toolbox talks to enforce the importance of noise mitigation.
- Undertaking the process of change management prior to commencing new construction activities or when construction equipment changes.
- Implementing the Driver's Code of Conduct.
- Monitoring the number of plant on Site and their SWL in relation to that predicted in the NVIA.

6.7.2 Shaft Sinking Noise Management Strategies (Main Sink)

Following the construction of the temporary headframes and winders and associated noise mitigation at the completion of Pre-Sink further works, all shaft sinking works will be required to be undertaken in compliance with the noise criteria set out in Table 2b, Condition 2C of Schedule 4 of the Project Approval. ICHPL has invested significant effort in designing and implementing noise mitigation measures into the construction of the shaft headframe buildings, such as:

- Double skin (2 x 0.55 mm Custom Orb steel sheet) internal and external cladding (i.e. four layers of cladding) with minimum 150 mm cavity with 100 mm of acoustic insulation inside the wall cavity.

- Heavy-duty collar and collar doors to contain the blast inside the shaft.
- Underground concrete encased shaft ventilation system will be blocked at the shaft and at the outlet to the environment during each night-time blast. The ventilation shaft is blocked by a series of acoustic doors separated by the fan room – effectively creating an airlock been the Vent Shaft and the environment.

The headframe buildings are expected to provide significant attenuation of noise levels with the attenuation expected to exceed 30 dB. All these options present significant investment undertakings for ICHPL. As such, ongoing real-time and attended monitoring will continue to form the basis of any further refined engineering and noise management strategies to be adopted for the Project.

In addition to refining noise management strategies for shaft-sinking, ongoing noise monitoring undertaken during main sink will allow for the refinement of realtime monitoring protocols which would indicate when activities and associated controls need to be reviewed, where consultation needs to occur and where attended compliance monitoring needs to be undertaken to ensure that the Conditions of Approval are complied with.

7 TRAFFIC MANAGEMENT PLAN

This section describes how ICHPL proposes to manage traffic during construction of the AMVA Project and has been prepared to address the requirements of Condition 11(e) of Schedule 4A, of the Project Approval. Note that works for the site entrance intersection with Menangle Road were completed around April 2023 so the road closure impacts of that work have ceased. No other major closures are planned.

7.1 General Management and Mitigation Safeguards

ICHPL is committed to implementing the following controls in order to comply with its traffic commitments during construction:

- Drivers are to follow road traffic signage, applicable legislation and directions for emergency personnel.
- Compression breaking is to be avoided unless in an emergency situation (of note is the hill on Finns Road towards Site).
- Vehicles are to be clean of any mud or other material which may become loose during transport, prior to exiting the Site.
- A wash down bay or hose down area will be established on Site for vehicles and machinery entering the Site for the first time (or those that require periodic cleaning). The wash down bay will be maintained.
- All bulk material loads are to be covered.
- No idling engines while on Site (other than in designated areas/times - i.e. concrete trucks).
- Where heavy vehicle GPS data is recorded, this information is to be provided to ICHPL to investigate incidents reported by the community and compliance with recommended routes, when requested.

7.2 Traffic Monitoring

ICHPL will ensure traffic impacts are minimised by utilising the existing strategies for monitoring and management of traffic including:

- Communication of the AMVA Drivers Code of Conduct (DCoC) (Appendix A)
- Monitoring of compliance against the transport routes both internally (via operational employees) and externally (via the Community Call Line).
- Investigation of all complaints.

- Following up any breaches with the person or contract company involved and recorded in the event reporting system G360.
- Undertaking disciplinary action, where required.

7.3 Traffic Control Plan and Road Closure Protocols

During construction ICHPL may require partial or full closure of Menangle Road. This may be undertaken outside of the standard construction hours specified in Section 4.5 to make use of lower traffic volumes for safety reasons and to reduce impacts to road users.

Wollondilly Shire Council (WSC), as the roads authority, has control over Menangle Road and any proposal to close Menangle Road requires WSC permission. ICHPL intends to minimise disruption to normal traffic conditions through the application of traffic control measures in accordance with the Australian Standard AS1742.3: Manual of Uniform Traffic Control Devices, Part 3: Traffic Control for Works on Roads. Traffic will be controlled at the Menangle Road intersection upgrade in accordance with the required standards and a Traffic Control Plan (TCP) developed and submitted to the WSC for approval. ICHPL will seek approval from WSC, as the relevant roads authority under s138 of the Roads Act 1993), for activities on and in connection with public roads associated with the Project. ICHPL will address any special conditions issued as part of the s138 Application.

In addition to requirements associated with WSC approval for road occupancy pursuant to Section 138 of the Roads Act, a Road Occupancy Licence will be secured for any activity likely to impact on traffic flow, even if that activity takes place off-road. The planning, coordination and licensing of road occupancies in the Sydney region is the responsibility of the Network Access Coordination Unit at the Transport Management Centre. For regions outside Sydney, Transport for NSW manages the process.

7.3.1 Community Consultation for Road Closures

The TCP will outline measures to advise motorists of changes in the road network conditions/operation or the expected vehicle movements to/from the Site (NB TCP are now referred to by Transport for NSW (TfNSW) as Traffic Guidance Scheme (TGS). TGS is a diagram(s) showing signs and devices arranged to warn traffic and guide it around, past or, if necessary through a work site or temporary hazard. In accordance with TfNSW specifications, during construction, the contractor shall each morning, prior to commencing work, ensure all signage is erected in accordance with the TGS and is clearly visible to motorists. Each evening, upon completion of work, the contractor is to ensure signage is either covered or removed as required, or appropriate for the stage of the works.

If required, traffic controllers will be used to facilitate the safe movement of construction vehicles entering and exiting the Site.

Any temporary traffic controls, signage or works within a public road corridor must have approval under s138 of the *Roads Act 1993*.

7.4 Vehicle Movement Plan

7.4.1 Construction Vehicle Transport Routes

Figure 12 shows the transport routes to be used by the majority of heavy and light vehicles during the construction of the AMVA Project. These are described as:

- Traffic to/from the South: Traffic will access the Site via the Hume Motorway M31, Picton Road and Menangle Road.
- Traffic from the North: Traffic will access the Site via the Remembrance Driveway, Finns Road, Woodbridge Road and Menangle Road. (Note: the section of Finns Road between Woodbridge Road and Menangle Road has a 15-tonne limit).

- These transport routes apply to all heavy vehicles including vehicles transporting construction waste materials.

These restrictions do not apply to:

- Delivery vehicles that are undertaking deliveries to other customers either prior to or following a delivery to the AMVA Project.
- Oversize vehicles where the transport route is specified in the permit.
- Any employees that reside in the local area (e.g. Campbelltown, Wilton or Douglas Park).
- The infrequent use of other roads for consultation with neighbouring landowners, environmental monitoring and inspection.

In addition, the following restrictions apply:

- Heavy vehicle traffic is prohibited to travel through Broughton Pass and Douglas Park Gorge (via the existing sign-posted limits).
- All employees and contractors of ICHPL are subject to induction training which identifies roads that are restricted for use and obligations under the Project Approval.
- All vehicles which are not defined as General Access Vehicles (GAV) in the National Heavy Vehicle Regulator (NHVR) Guidelines would require a permit to access site on Menangle Rd from the North.

7.4.2 Drivers Code of Conduct

A DCoC has been prepared for the AMVA Project (Appendix B). The DCoC applies to all project related vehicles (i.e. Contractor vehicles, ICHPL Vehicles).

7.4.3 Over Dimensional and Heavy Vehicle Access

Any over dimensional vehicles movements will be undertaken in accordance with the NHVR Guidelines and relevant road authority requirements.

Some of the key specifications of this guideline include:

- Pilot and escort vehicles will be used to provide other road users with an advance warning that the vehicle ahead is over dimensional.
- Over dimensional vehicles shall not travel roads damaged by floods, submergence or earthquakes.

7.4.4 Parking

All parking (heavy and light vehicles) will occur on Site. No offsite parking is available at the Site.

7.4.5 Managing Road User Conflicts

A small proportion of the workforce traffic will continue to utilise the regional roads (i.e. such as Wilton Road at Broughton Pass and Douglas Park Gorge on Douglas Park Drive) to travel between Appin North, Appin West, Appin East and other facilities. This is consistent with the current use of these roads. It is noted that the avoidance of traffic noise impacts on Douglas Park Drive in Douglas Park (which is located on the route between the regional roads and the AMVA Project) is the subject of an existing Project Approval condition (i.e. Condition 5 of Schedule 4,). Traffic noise related impacts at this location will continue to be managed in accordance with the Appin Mine Noise Management Plan, Appin Mine Traffic Management Plan (TMP) and AMVA DCOC. Under these plans, ICHPL seeks to minimise road traffic noise generated by employee commuter vehicles on public roads.

Heavy vehicle movements will occur through the day. The transport routes involve the use of major arterial roads (e.g. Hume Highway, Picton Road, Camden Bypass, Old Hume Highway and

Remembrance Driveway) and roads in semi-rural areas (e.g. Finns Road, Woodbridge Road and Menangle Road). The use of these roads therefore minimises potential conflicts associated with the local roads and impacts on residential areas.

The construction workforce trips do not coincide with the commuter morning and afternoon peak hours on the road network adjacent to the Site and therefore no construction related impacts to road users are predicted to occur.

7.4.6 Transporting construction waste materials

All waste will be classified in accordance with EPA Waste Classification Guidelines (2014) prior to transport. Clause 70 of the *Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation 2014)* requires that:

- Waste that is transported by a motor vehicle or trailer, must be transported in a manner that avoids the waste spilling, leaking or otherwise escaping.
- The motor vehicle or trailer used to transport the waste must be constructed and maintained so as to avoid the waste spilling, leaking or otherwise escaping from the motor vehicle or trailer.

7.4.7 Road Safety Audits

In accordance with Schedule 4A, Condition 11, ICHPL are required to undertake a program of road safety audits, including both pre and post construction of the intersection of the Appin Mine Ventilation and Access Site entrance with Menangle Road. Accordingly, a pre-construction road safety audit was completed and was appended to previous versions of the CEMP.. At completion of the of the Appin Mine Ventilation and Access Site entrance with Menangle Road, a post construction audit was completed by WsC to verify the works have been undertaken to their satisfaction.

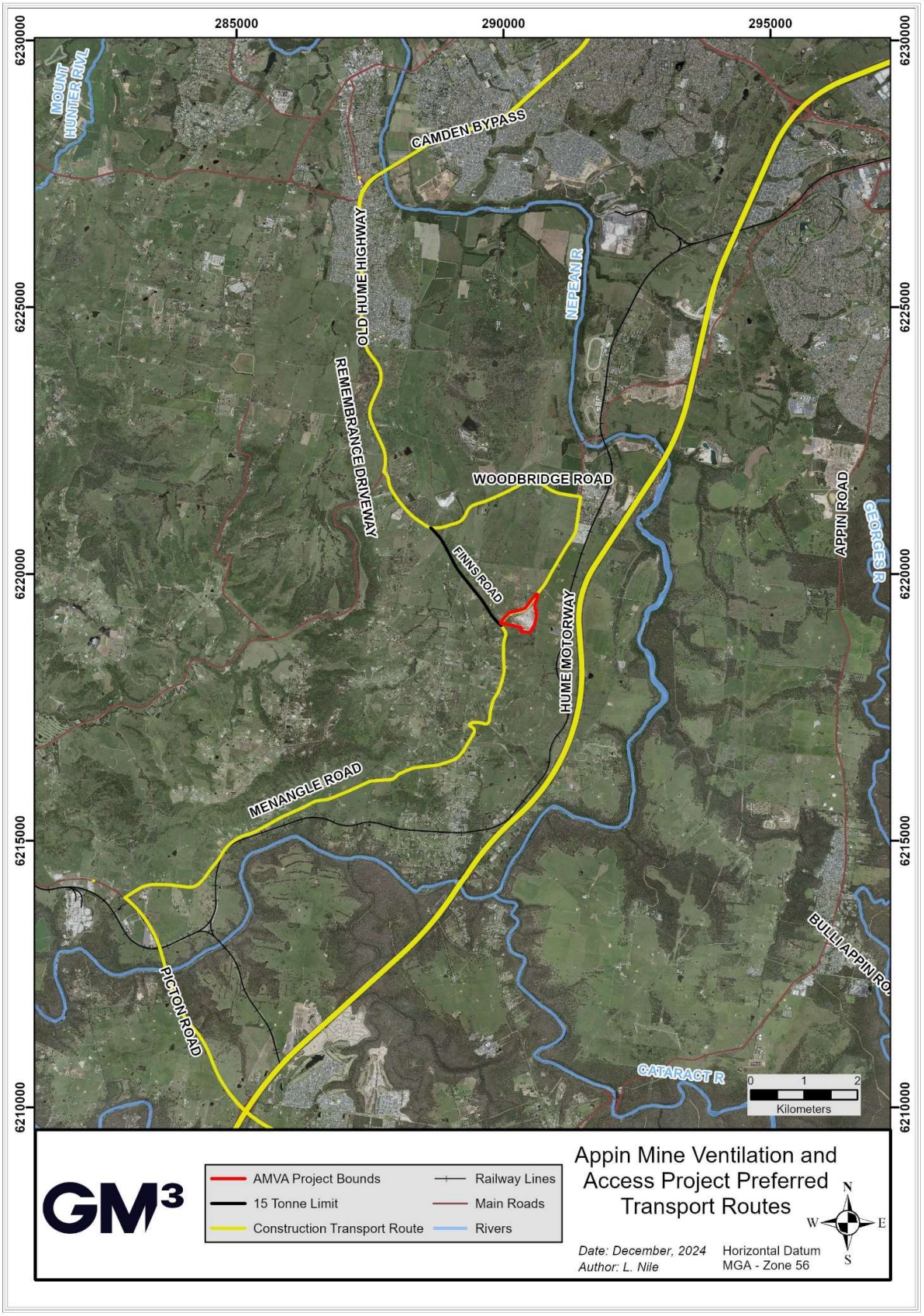


Figure 12 Preferred Transport Routes

8 AIR QUALITY MANAGEMENT PLAN

This section describes how ICHPL proposes to manage and protect air quality during construction. This Plan includes both proactive as well as reactive management measures to minimise the impact of dust on the surrounding environment, including surrounding properties and receivers.

8.1 Predicted Construction Air Quality Impacts

Within the Air Quality and Greenhouse Gas Assessment undertaken as part of the modification EA[4] an emissions inventory was developed for a single construction year, selected to assess the worst-case air quality impacts when material handling/movement is at a maximum. The highest predicted dust concentrations during construction occur at the closest assessment location (R2). Modelling predictions indicated that there would be no days over the 24-hour average impact assessment criterion for Particulate Matter < 10 µm (PM10) and Particulate Matter < 2.5 µm (PM2.5) and no exceedances of the annual average impact assessment criterion at any assessment location for PM10, PM2.5, Total Suspended Particulate (TSP) and dust deposition shown in Table 12.

ICHPL will however undertake real-time air quality monitoring against the compliance conditions and provide a mechanism for comparison of site and regional air quality to determine the cause of any potential exceedance.

8.2 Air Quality Criteria for the AMVA Project Site

The air quality criteria for the AMVA Project are detailed in Condition 9A of Schedule 4 of the Project Approval and are summarised in Table 12. The criteria apply to all residences on privately owned land.

Table 12 Project Approval Air Quality Criteria

Pollutant	Averaging period	[d] Criterion	
Long Term Impact Assessment Criteria for Particulate Matter			
Particulate Matter < 10 µm (PM_{10})	Annual	[a] 25 µg/m^3	
Particulate Matter < 10 µm (PM_{10})	24-Hour	[a] 50 µg/m^3	
Particulate Matter < 10 µm ($PM_{2.5}$)	Annual	[a] 8 µg/m^3	
Particulate Matter < 2.5 µm ($PM_{2.5}$)	24-Hour	[a] 25 µg/m^3	
Total Suspended Particulate (TSP)	Annual	90 µg/m^3	
Deposited Dust	Annual	Maximum increase in deposited dust level	Maximum total deposited dust level
		g/m^2/month [b]	4 g/m^2/month [a]

Notes:

- [a] *Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations due to other sources)*
- [b] *Incremental impact (i.e. incremental increase in concentrations due to the project 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*

[4] EMM, (2021) Air Quality and Greenhouse Gas Assessment for Appin Mine Ventilation and Access Project.

- [d] *Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed to by the Planning Secretary in consultation with EPA.*

8.3 Air Quality Monitoring

8.3.1 Realtime Monitoring Protocols

Air quality monitoring will be carried out throughout the construction phase. The intent of this monitoring program will be to:

- Collect information about air quality dynamics at the Site and provide insights into how construction activities may be impacting on air quality.
- Compare site air quality monitoring results to local and regional air quality.

Realtime monitoring units will be placed along with real-time noise and imagery instruments at the locations specified in Figure 10.

These units collect the following data in 15-minute increments:

- TSP
- PM_{10}
- $PM_{2.5}$

ICHPL will receive daily reports from each monitoring station with air quality dynamics ($PM_{2.5}$, PM_{10} and TSP) over the day. ICHPL will also be issued with alerts when potential exceedances for the 24-Hour Air Quality criteria occurs.

When an exceedance or potential exceedance is noted, ICHPL will review the site data imagery taken at monitoring locations and site logs and local and regional air quality data to determine the potential cause of exceedance, suitability of existing controls and any opportunities to improve air quality management.

In the event of a complaint, ICHPL will review real time data, site information and local and regional air quality data to determine the cause. If it is determined that construction activities may be contributing to the exceedance, ICHPL will undertake attended or targeted monitoring to confirm ongoing performance of the activity. If an exceedance of the air quality criteria listed in Condition 9 of Schedule 4 of the Project Approval occurs, ICHPL will comply with the notification protocols set out in Schedule 5.

8.3.2 Deposited Dust

Targeted temporary residential air quality monitoring may be undertaken using DDGs in response to any community complaints, or for construction activities (for background data and air quality during construction).

8.4 Air Quality Management and Mitigation Measures

This section describes how ICHPL will manage and protect air quality during construction of the AMVA Project and has been prepared to address the requirements of Condition 11(g) of Schedule 4A, of the Project Approval.

Specific environmental controls for individual work areas will be developed based on the task and included in job planning documents (SWMS, pre-start and Construction Management Plans). These plans will be developed by specialist contractors and will be consistent with the requirements and strategies set out in this CEMP.

8.4.1 Visual Monitoring and Inspections

Regular monitoring and inspections will be carried out during construction. Monitoring and inspections will include, but are not limited to:

- Weekly Site inspections by the ICHPL Environment Representative to identify and action any air quality issues related to:
    - Visible sources of dust.
    - Visible dust emissions.
    - Implementation and effectiveness of dust controls.
    - No continuous visible vehicle/plant/equipment emissions for longer than 10 seconds as per the *Protection of the Environment Operations (Clean Air) Regulation*.
    - No mud tracking off-site; check main exit/entry points and material on public roads.
- Documented Site inspections by ICHPL or designated principal contractor while construction works are occurring. The frequency of these inspections is to reflect the risk associated with potential activities. The objectives of the inspections are to identify and action any air quality issues related to:
    - Visual monitoring of dust.
    - Haul/access road integrity.
    - Any other relevant mitigation measures. An adaptive approach to dust management will be implemented, where mitigation measures will be amended and improved if they are found not be meeting the required outcomes.
- Monitoring weather conditions at the premises. The weather forecast (e.g. rainfall) will be checked daily to allow for proactive dust management actions to be implemented.
- Pre-use plant inspections will be conducted and recorded to verify that plant is in good working order.

Required actions and ongoing issues identified during Site inspections will be recorded and actioned appropriately within agreed timeframes by relevant AMVA Project personnel. These inspections are to be recorded as part of Environmental Inspection Checklist (internal document).

8.4.2 Standard Controls and Management Measures

ICHPL or nominated representative will undertake the following standard controls where required in relation to air quality management:

- Reporting and record keeping:
    - Record any exceptional incidents that cause dust and/or air emissions, either on or off Site, and the action taken to resolve the situation.
- Dust generation – general:
    - Weather forecast (e.g. rainfall and wind) will be checked daily to allow for proactive dust management actions to be implemented.
    - Erect screens or barriers around potentially dusty activities and material stockpiles, where practicable.
    - Provide an adequate water supply on the construction Site for effective dust/particulate matter suppression/mitigation.
    - Prevent on Site runoff of dirty water or tracking of mud.
    - Temporarily stop or alter non-essential dust generating activities during high wind conditions.
    - Schedule activities to avoid adverse weather conditions by reviewing weather forecasts.

    - Implementing effective dust/particulate matter suppression/mitigation. This may include the application of a crusting agent to assist with minimising dust emissions from non trafficable areas.

- Materials handling:
    - Not overloading trucks to reduce spillage during loading/unloading and hauling.
    - Minimise drop heights from loading, unloading or handling spoil/excavated material.
- Soil Stripping:
    - Soil stripping will be limited to areas required for construction.
- Exposed Areas:
    - Minimise the disturbance area.
    - Exposed areas will be stabilised as soon as practicable.
    - Long-term soil stockpiles will be revegetated.
    - Progressive reshaping of overburden emplacement and topsoil areas in preparation for progressive rehabilitation.
- Dust generation from vehicles moving on paved and unpaved roads:
    - Haul roads will be constructed with competent material.
    - All haul roads will be graded and shall be subject to regular maintenance (use of crushed gravel to sheet roads etc.) to reduce fines build up and minimise dust generation.
    - Watering of main haulage routes or applying dust suppressants, as required.
    - Routes to be clearly marked and speed limits enforced.
    - Ensure vehicles entering and leaving Site are covered during off Site transport.
    - Install a wheel wash or shaker grid or hose down area to prevent wheel tracking of material.
    - Removal of sediment/dust from sealed trafficable areas (e.g. Road sweeper).

9 BLAST MANAGEMENT PLAN

Condition 11 (d) of Schedule 4a of the Project Approval requires that a Construction Blast Management Plan (CBMP) be developed for the Project. This CBMP has been developed in response to this requirement. Section 2.1.1 provides a compliance matrix which details which sections of the plan address each of the prescribed requirements of the Project Approval.

The objectives of this CBMP are to:

- describe the measures that would be implemented to comply with the relevant conditions of the Project Approval and verify best management practice is being employed;
- includes a real-time automated monitoring program prepared in accordance with the guidelines provided in Australian Standard 2187.2-2006: Explosives-Storage and use, Part 2: Use of explosives to:
    - evaluate the performance of the project and compliance with the applicable criteria;
    - control flyrock; and
    - minimise fume emissions from the site;
- include public notification procedures to enable members of the public, particularly surrounding residents, to get up-to-date information on the proposed blast schedule;
- include a protocol for investigating and responding to blast-related complaints; and
- include a protocol for investigating and responding to noise complaints.

This Blast Management Plan has been developed in consideration of the guidance provided in the Code of Practice provided by the Australian Explosives Industry and Safety Group (AEISG) and the *NSW Explosives Act 2003* and NSW Explosives Regulations 2013.

9.1 Shaft Construction Engineering Phases

The shaft will be constructed in two distinct engineering phases:

- Pre-sink; and
- Main shaft construction.

9.1.1 Pre-Sink

The pre-sink phase would involve the construction of a shaft collar and the utilisation of a crane and single deck stage for the excavation of the shaft to the required depth for the installation of the main sink stage in preparation for the main shaft construction (generally 30-50 metres depth). The pre-sink would use both mechanical excavation and controlled blasting to excavate the shaft.

Initially, broken rock would be removed from the shaft via standard civil excavation methods. Once the shaft collar and shaft excavation headframe are installed, broken rock would be removed via kibbles.

The shaft collar would be installed to support the temporary headframe and final ventilation ducting. This collar is constructed of heavily reinforced concrete designed to withstand the stress loads and vibration during the shaft excavation and prevent surface water ingress into the shaft. The walls of the shaft are supported incrementally by temporary ground support followed by the permanent concrete lining.

Prior to the commencement of works for the main sink, the following plant and equipment would be assembled and installed for each shaft:

- shaft sinking head frame;
- winder, winder house and associated control systems;
- kibble and kibble winder; and
- stage and stage winders.

Installation and operation of this plant and equipment provides the means for the main shaft construction team to access progressively deeper shaft depths during the main shaft construction phase.

9.1.2 Main Shaft Construction

The main shaft construction phase will be undertaken from the final pre-sink depth to the final shaft depth by blind sinking using the controlled blasting method. The headframe, winding equipment, kibble and stage provide access to the shaft for personnel, equipment and removal of broken rock.

Excavation by controlled blasting would generally follow a repetitive shaft sinking cycle:

- Progressive incremental drilling and loading of boreholes into the base of the shaft with explosive charges and stemming material;
- Controlled blasting using electronically sequentially timed detonation of explosives to manage the amount of energy released, known as construction blasts;
- Removal (mucking out) of the spoil via the kibble;
- Installation of temporary rock support; and
- Installation of permanent shaft lining.

9.1.3 Regulatory Requirements

A compliance matrix for Blast Management requirements in the Project Approval are included in Table 2.

9.1.4 Preparation of the Blast Management Plan

In accordance with the requirements of Condition 11 (d) of Schedule 4A of the Project Approval, this Construction Blast Management Plan has been prepared by a suitably qualified and experienced person, Ian B. Thurgood B.E. Civil (Hons) former Senior Technical Blasting Engineer and Construction Blasting Business Development Manager for Orica. Ian is currently a Technical and Commercial Consultant at Between the Lines Pty Ltd. Ian is an SME for Drilling and Blasting having over 20 years' experience in the mining, civil engineering, quarrying and construction industries with a majority of this time spent directly managing, designing, or providing technical support for blasting activities in these environments.

9.1.5 Operating Conditions

During blasting operations on the Appin Mine Ventilation and Access Site, ICHPL must:

(a) engage suitably qualified and experienced person/s to oversee the process of blasting, including blast planning, design, supervision and monitoring;

(b) implement best management practice to:

i. protect the safety of people (including road users) and livestock in the surrounding area;

ii. protect public or private infrastructure/property in the surrounding area from any damage; and

iii. minimise the dust and fume emissions of any blasting;

to the satisfaction of the Planning Secretary.

Accordingly, RUC Cementation (ICHPL's nominated shaft sinking contractor) is engaging with Orica Mining Services (the Blasting Contractor) for the supply of explosives, technical support, environmental monitoring systems and blasting services to complement their in-house shotfiring team delivering this project. Orica Quarry & Construction Services is a well-experienced and licensed blasting contractor that operates under the NSW *Explosives Act 2003* and NSW *Explosives Regulations 2013*.

Orica's construction services team provides expert advice aimed at delivering innovative blasting solutions in environments previously thought impossible.

9.1.6 Personnel Accountabilities and Requirements

Table 13 and Table 14 provide details on the roles, responsibilities and required expertise of key blast management staff and contractors.

Table 13 Skills and Experience Requirements

ROLE/POSITION	MINIMUM EXPERIENCE
Shot firing Crew/Operator	Trained & Competent in Equipment Explosives Awareness Trained
Shotfirer	Holder of a blasting explosives user's licence (*Explosives Regulations 2013*, Reg 28) and 2 years' experience working under a holder of the like licence in mining or construction blasting work.
Supervisor	5 years' experience in mining or construction including blasting work in tunnels & shafts
Blasting/Project Engineer	12 months experience in construction work where construction blasting has taken place

ROLE/POSITION	MINIMUM EXPERIENCE
Project Manager	10 years' experience in mining or construction work where blasting has taken place.

Table 14 Blast Management Accountabilities

ROLE	RESPONSIBILITIES
Project Manager	Approval of the blast management plan Coordinate blast monitoring according to the BMP Manage and report blast incidents Review the performance of the blast management plan in meeting the objectives/targets Coordinate structural assessments on heritage items Manage blast related complaints. Evaluate monitoring results and compliance with approval conditions/blast management plan commitments Undertaken blast management reporting Train relevant personnel in the requirements of the plan
Project Engineer	Undertake blast design accounting for all geological information Facilitate and/or implement blast management controls in accordance with the blast management system Coordinate the infrastructure monitoring program Undertake blast fume monitoring
Blasting Supervisor	Ensure that the drill pattern is drilled according to the design Ensure that the blasting pattern is loaded with explosives and stemming according to the blast design Facilitate and/or implement blast management controls in accordance with the blast management system
Driller/Drill Operator	Record relevant drilling information and report any environmental issues
Shotfirer's	Load and fire according to the blast design Comply with blast checklist Notify any abnormalities that may lead to non-conformance
All persons	Comply with the requirement of this BMP

9.2 Local Environment

Blasting has the potential to impact on natural and built features, the community and other infrastructure. This section provides a summary of these features surrounding the Site and provides commentary on related management requirements.

9.2.1 Receivers

Figure 10 provides detail on receivers where noise, vibration and overpressure impacts were assessed during the Environmental Assessment.

9.2.2 Geology

The planned shafts are to access the Bulli seam through primarily competent sandstone strata units with some claystone units. The project is within 200 m of the large fault zone known as the Wandinong Fault which does exhibit displacements of over 20 m. A number of small at seam level faults have been mapped or interpolated into the general area as well. It is noted that the area has been well investigated and shows good consistency with the surrounding strata with any influence or effect from the inferred geological structures likely to be minor or well understood.

The predominant features in the above stratigraphy include two competent mass sandstone units –HBSS and Bulgo Sandstone (BGSS) - split by the thinner and comparatively lower strength Bald Hill Claystone (BACS) around the -150m level, with a thin layer of comparatively weaker Wombarra Claystone (WBCS) at around 400 m.

Even with the slightly weaker geological bands mentioned above, the material to be blasted within the majority of the depth of the vent shafts should provide sufficient confinement to contain the explosive energy within each blast. Any changes in geology will be assessed prior to blasting so that designs and risk control measures can be adjusted to suit where applicable.

9.2.3 Transport Infrastructure

The site is within proximity of a range of transport infrastructure including the following nearby features.

- Menangle Road (115 m, closest point);
- Finns Road, Intersection w/ Menangle Road (450 m);
- M31 Hume Highway (930 m, closest point); and
- Main South Railway Line (710 m, closest point).

The blasting assessments undertaken during the NVIA prepared during the Environmental Assessment did not predict any impacts to these assets as a result of blasting.

9.2.4 Communications, Water and Electrical Infrastructure

The following infrastructure have been identified adjacent to the Project. These are shown in Figure 13:

- Sydney Water (water pipelines);
- Telstra (communications/fibre optic cables);
- Endeavour Energy (powerlines); and
- NBN Co (fibre optic cables).

ICHPL will consult with these service providers to determine any blast vibration restrictions for their assets and consider these in development of blast design.

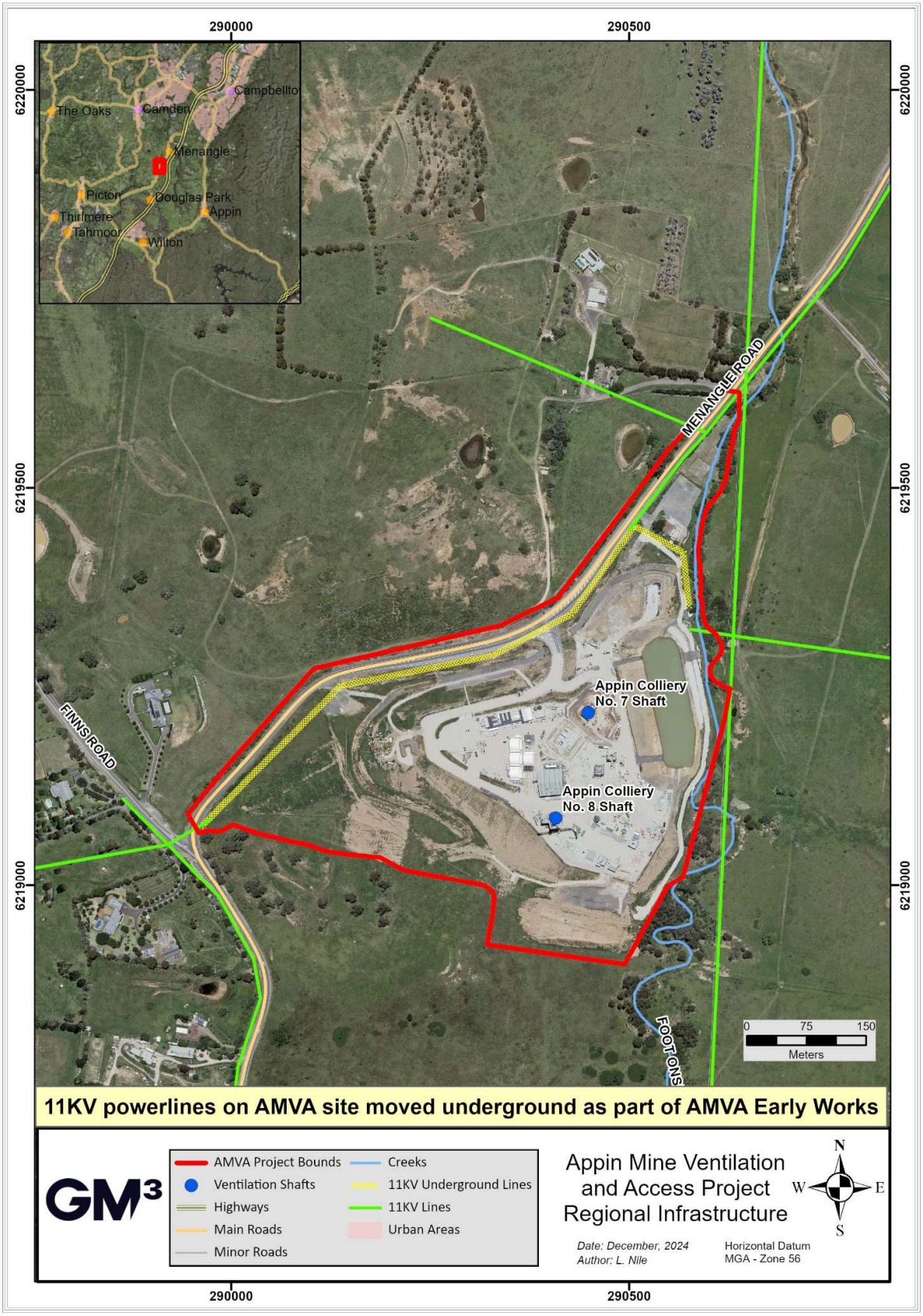


Figure 13 Regional Infrastructure

9.3 Predicted Impacts

9.3.1 Noise

Audible noise from blasts, which can typically be described as a "pop", is unlikely to cause annoyance. However, if the audible noise associated with a blast is sufficiently loud, blast events occurring at night, could lead to sleep disturbance impacts. When ICHPL proposes to carry out blasting outside of the hours specified in condition 4 of Schedule 4A of the Project Approval (as modified), then it must demonstrate that the airblast overpressure levels from the blasting complies with the night-time LAmax sleep disturbance maximum noise trigger level criteria specified in Table 2B of condition 2C, Schedule 4 (shown in Table 11). Accordingly, a monitoring program to confirm compliance with these conditions will be undertaken and an application made to the Planning Secretary.

9.3.2 Vibration

DEC (2006) provides guidance for assessing human exposure to vibration. The publication is based on British Standard BS 6472:1992 – Guide to evaluation of human exposure to vibration in buildings (1 Hz to 80 Hz). The recommended night-time (10.00 pm – 7.00 am) Peak Particle Velocity (PPV) vibration limit for residences in DEC (2006) is 2.8 mm/s. The NVIA (RWDI, 2021) predicted that blasting activities would comply with the applicable vibration criteria (included in Table 15) at all receivers.

9.3.3 Overpressure

Table 32 of the NVIA predicted impacts up to 8 dBA at some receivers. Due to the vertical orientation of the vent shafts, which can't be accounted for in the predictions, overpressure levels at sensitive receivers are anticipated to be significantly lower than those presented in the NVIA. Notwithstanding, the controls provided in Section 9.5.1 will be implemented to comply with criteria specified in the Project Approval (Table 15).

9.4 Blasting Criteria and Requirements

9.4.1 Blasting Hours

On 5 February 2025, DPHI granted further approval to undertake blasting associated with the main shaft sink for Vent Shaft 7 and Vent Shaft 8 on a 24-hour, 7 days a week basis in accordance with Condition 5 of Schedule 4A of the development consent for the Bulli Seam Operations Project (MP08_0150). Refer Appendix 2.

The approval applies until 31 July 2025. Further application will be made to extend the 24/7 blasting approval past this date, supported by evidence demonstrating ongoing compliance with the blasting noise limits outlined in the consent.

9.4.2 Vibration and Overpressure

In accordance with the Project Approval, the criteria for on-site blasting activities are presented in the Table below.

Table 15 Vibration and Overpressure Criteria

LOCATION	AIRBLAST OVERPRESSURE (DB(LIN PEAK))	GROUND VIBRATION (MM/S)	ALLOWABLE EXCEEDANCE
Residence on privately owned land	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months

However, these criteria do not apply if the Proponent has a written agreement with the relevant owner and the Proponent has advised the Department in writing of the terms of this agreement, or if the Planning Secretary agree other criteria.

9.4.3 Blast Frequency

ICHPL intend to conduct a maximum of two (2) blasts per 24-hour period at each of the shafts unless an additional blast is required following a blast misfire. Condition 6 of Schedule 4A does not apply to blasts required to ensure the safety of the mine or its workers. [5]

9.4.4 Misfire Definition and Management

Schedule 4A Consent Condition 4 stipulates....."*No blasting is allowed on public holidays, or at any other time without the written approval of the Planning Secretary unless an additional blast is required following a blast misfire or to ensure the safety of the mine or its workers*".

A misfire can be defined as 'any shot that fails, or partially detonates'. The AMVA Project uses electronic detonators.

A technical misfire can occur with electronic detonators, if a face is charged, logged and then when the exploder is finally wired into the blast circuit to undertake the blast, there is a fault or error code due to a faulty detonator or connection. In this case, clearly the blast cannot take place and the fault must be found and rectified. This is a technical misfire as the shot has failed.

With normal detonators the shot would be fired and there would be unexploded explosives and detonators in the muck pile, which would then become reportable and a potential hazard when mucking out.

Electronic detonators provide a more robust system. Once a fault is indicated it can take several hours to re-enter the shaft, identify the faulty detonators(s) and replace those faulty items.

It is the same as charging a normal face, then retreating and connecting the blast wire to find there is a continuity problem. Fault finding has to take place before the face can be fired. It becomes a "charged face" and must be treated as such until detonated. Such events, although rare, may necessitate blasting out of the approved hours to ensure the safety of workers.

Through the MOD6 application process, DHPI have acknowledged that the AMVA Project may continue to manage misfires in accordance with the description above, and that any resultant blasts out of hours would be notified to DPHI, but not as a non-compliance.

9.5 Mitigation of Blast Impacts

9.5.1 Management of Overpressure

9.5.1.1 Adaptive Management

Blast design will be guided by the principle of adaptive management. Accordingly, trial blasts are used to inform the development of a safe and compliant (with Project Approval conditions) blast program. A 'trial blast' involves firing several small explosive charges in the ground to be blasted and monitoring the resultant vibrations at key monitoring locations around the site. The purpose of a trial blast is to:

- Confirm the site law (the site-specific relationship between explosive charge weight, distance to sensitive receivers and magnitude of vibration);
- Confirm blast design parameters on a smaller scale prior to full scale construction blasting;

[5] For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a ventilation shaft of the site.

- Confirm monitoring results are in-line with predictions; and
- Optimise the site blasting procedures.

The trial blasts and construction blasts shall be designed by a specialist blasting consultant. Subsequent construction blast designs shall consider the performance of previous construction blasts thus enabling ICHPL and RUC to continuously improve the efficiency and technical performance of the blasts whilst controlling environmental impacts such as vibration and overpressure.

9.5.1.2 Blast Designs

All blasts designs will be conducted by a qualified drill and blast (D&B) engineer with experience in construction and shaft-sinking environments. Explosive sleep times are not permitted to exceed the manufacturer's recommendations unless unforeseen exceptional circumstances arise in which case ICHPL and RUC in consultation with relevant personnel, will make a risk-based determination regarding the necessity to delay firing the blast.

Following the completion of drilling, RUC will dip drill holes in advance of loading when practicable to verify drill hole depth and presence of water. Blast loading designs will be updated to reflect the most accurate information from drill hole dip records when available i.e., explosive product selection, explosive volume, stemming height.

9.5.2 Fume Management

The group of gases known as Oxides of Nitrogen or NOx, of which the most common are nitrous oxide (NO) and nitrogen dioxide (NO_2), are often found in the post-blast gases of ammonium nitrate-based explosives such as what will be used in blasting on this project. Together, these gases are loosely referred to as "NOx". Nitrous oxide is invisible, but nitrogen dioxide ranges from yellow to dark red depending on the concentration and size of the gas cloud. Blasting produces a sudden localised release of gases with potentially high concentrations of NOx. These gases are toxic and pose a health risk if people are exposed to them before the plumes can dissipate.

According to the Australian Explosives Industry and Safety Group (AEISG) Code of Good Practice: Prevention and Management of Blast Generated NOx Gases in Surface Blasting, Edition 2, 2011 ("the Code"), the six most likely causes for creating NOx-generating blasting conditions might be the result of:

- Explosive formulation and quality assurance;
- Geological conditions;
- Blast design;
- Explosive product selection;
- On-bench practices; and
- Contamination of explosive in the blast-hole.

Whilst the risk of fume generation from blasting at this project is considered low, due to the expectedly low moisture content of the rock, and the small surface area being blasted, each of the primary risk factors for fume generation identified in the AEISG Code (as provided above) are discussed below.

9.5.2.1 Product Selection

All bulk and packaged emulsion explosive products used on this project shall be fit-for-purpose, water-proof and designed for wet-hole application. No dry-hole only explosive products will be used on this project, regardless of actual hole condition.

9.5.2.2 Pre-Blast Fume Risk Assessment

The Blasting Contractor will adopt blasting practices that balance both safety and environmental performance.

9.5.2.3 Fume Mitigation Controls

There are many contributing factors to consider when designing a blast that minimises the potential for a fume event. The D&B Engineer is responsible for all blast designs at the project. Blast designs will be influenced by varying geological conditions at the project, conditions that will be identified during drilling operations prior to loading explosives. ICHPL will utilise a continuous improvement philosophy based on drill and blast experience to adjust design parameters for optimal performance. Blast design parameters to be considered, based on information obtained during production drilling operations, include:

- Explosives product selection suitable to the moisture content of various strata;
- Powder factor selection to sufficiently fragment the strata for the safety of excavation operations;
- Blast pattern timing that protects adjacent blast holes, but does not confine the explosive product reaction; and
- Explosives sleep time minimised (nominally less than one (1) shift when practicable).

More details on contributing factors, their characteristics and mitigation measures to be employed in this Project are detailed in Table 16.

9.5.2.4 Rating and Recording of Blast Fume Events

The Contractor utilises a network of gas monitors at various locations inside the ventilation shafts, (headframe building above collar doors, underneath collar doors, ventilation exhaust outlet, sinking stage platforms, underneath sinking stage's lowest platform) which are used to determine the presence of any hazardous blast fumes and confirm when it is safe to re-enter the shafts after a blast event.

At the time of this CEMP review, headframe buildings and blast doors are in place over each shaft so it is highly unlikely concentrated blast fumes would migrate off site.

Any unsafe blast fumes are ventilated via the ventilation system until the sufficiently safe.

9.5.2.5 Ignition of Gas

A major risk existing on this working underground coal mine site is related to the presence of coal seam gas. The presence of gas shall be monitored on every shaft blast and once the prescribed threshold of coal seam gas is detected then ICHPL shall adopt the use of permitted explosives, suitable for blasting in coal gaseous environments.

9.5.3 Dust Management

Blasting operations can generate dust. Though the blasting dust plume is raised for only a few minutes and most of the dust settles in and around the blasting area, some of it is dispersed before settling down. Depending on meteorological conditions the dust dispersal can travel substantial distances. The impacts of blasting operations on the air quality depend on the nature and concentrations of the emissions, meteorological conditions and the nature of the receptors being humans, flora, fauna, or materials.

Notwithstanding the above, the modelling conducted in Section ES4 of the Air Quality and Greenhouse Gas Assessment ("AQGHG") for this project has predicted that there will be no exceedances of the annual average impact assessment criterion (specified in Section 8.2) at any assessment location due to blasting.

In accordance with Condition 11(b) of Schedule 4, ICHPL shall minimise any visible air pollution generated by the project.

In order to mitigate these potential dust emissions, the Blasting Contractor and ICHPL may employ one or more of the following control measures:

- Manual excavation of near-surface weathered materials to depth of refusal before blasting employed for lower levels of harder rock.
- Erection of the shaft headframes and blast doors over the opening to each vent shaft. At the time of this CEMP review, the shaft headframes for Vent Shaft 7 and 8 were in place, which effectively contain any dust from blasting operations.
- Ensuring sufficient and good quality stemming is used in blast holes.

9.5.4 Flyrock Management

Flyrock is usually the term given to projected rock that leaves the clearance area, whereas rock or stemming ejection is the term used for projectiles leaving the immediate blast area but not leaving the clearance area. A flyrock incident is therefore classified as a safety incident, whereas rock ejection events are usually classified as a quality management incident or non-conformance to the blast plan.

Subsequently, it is especially important to clearly define the blast clearance area so that should such incidents occur then it will be investigated and reported appropriately.

To manage the risk of flyrock and rock ejections, there are several mitigation measures that will be taken on this project. These are:

- Stemming aggregate quality management.
- Blast design and scaled depth of burial (SDoB) analysis.
- Blast clearance/exclusion zone analysis and enforcing.
- Blast loading quality management.
- Physical blast coverings and protection layers (blast-mats).

9.6 Monitoring Protocols

9.6.1 Vibration and Overpressure

In accordance with Condition 11 (d) (ii) of Schedule 4A of the Project Approval, blast monitoring instrumentation are used to measure and record the airblast overpressure and ground vibration levels which record in real-time and are automated. The Project uses the Waves Technology Aeolian system employed at the three locations shown in Figure 13. The monitoring technology communicates continually with field sensors via a wireless network, and the measurement data is automatically transferred from the measurement point, providing accurate data in real-time, to a secure online portal.

A further requirement of Condition 11 (d) (ii) of Schedule 4A of the Project Approval is for the monitoring program to be prepared in accordance with the guidelines provided in the Australian Standard AS 2187.2-2006 (Explosives – Storage, Transport and Use - Use of Explosives). Appendix J, Section J 3.1.2 of this Standard contains these guidelines as follows.

- Read the instruction manual (ensuring the operator of the monitors understands how to use the system correctly).
- Instrument calibration (ensuring monitors are calibrated and recording correctly).
- Pre-blast preparation (understanding blast characteristics and location with respect to monitors).

- Record the full waveform (ensuring sufficient memory capacity is available to ensure the entire duration of the blast is captured).
- Record the blast (ensure the system has been tested to confirm recording will be successful).
- Ground vibration transducer placement (ensuring the transducer is coupled correctly with the ground so that an accurate reading is recorded).
- Microphone placement (ensuring microphone is placed at minimum 1 m height with windshield attached).

In meeting the requirements of AS2187.2's guidelines mentioned above the following protocols will be implemented in conjunction with the Blast monitoring system:

- Full training on the operation and maintenance of the system will be included in the supply contract for this system.
- Initial calibration of this system will be included with commissioning upon installation. Ongoing calibration will be completed according to manufacturer's recommendations and records shall be maintained at the project.
- The blast monitoring system records vibration and air overpressures on a 24-7 basis and data is uploaded into a secure online portal with significant memory space in the associated cloud. There will be no risk that full waveforms are not captured for each blast at every monitoring location.
- Part of the commissioning of the system will be to conduct a field test to ensure that the monitors are recording correctly prior to the first blast being performed.
- The ground transducer and microphone will be installed by the supplier who is providing the system according to the manufacturers specification and the requirements for placing these devices correctly in accordance with AS2187.2.

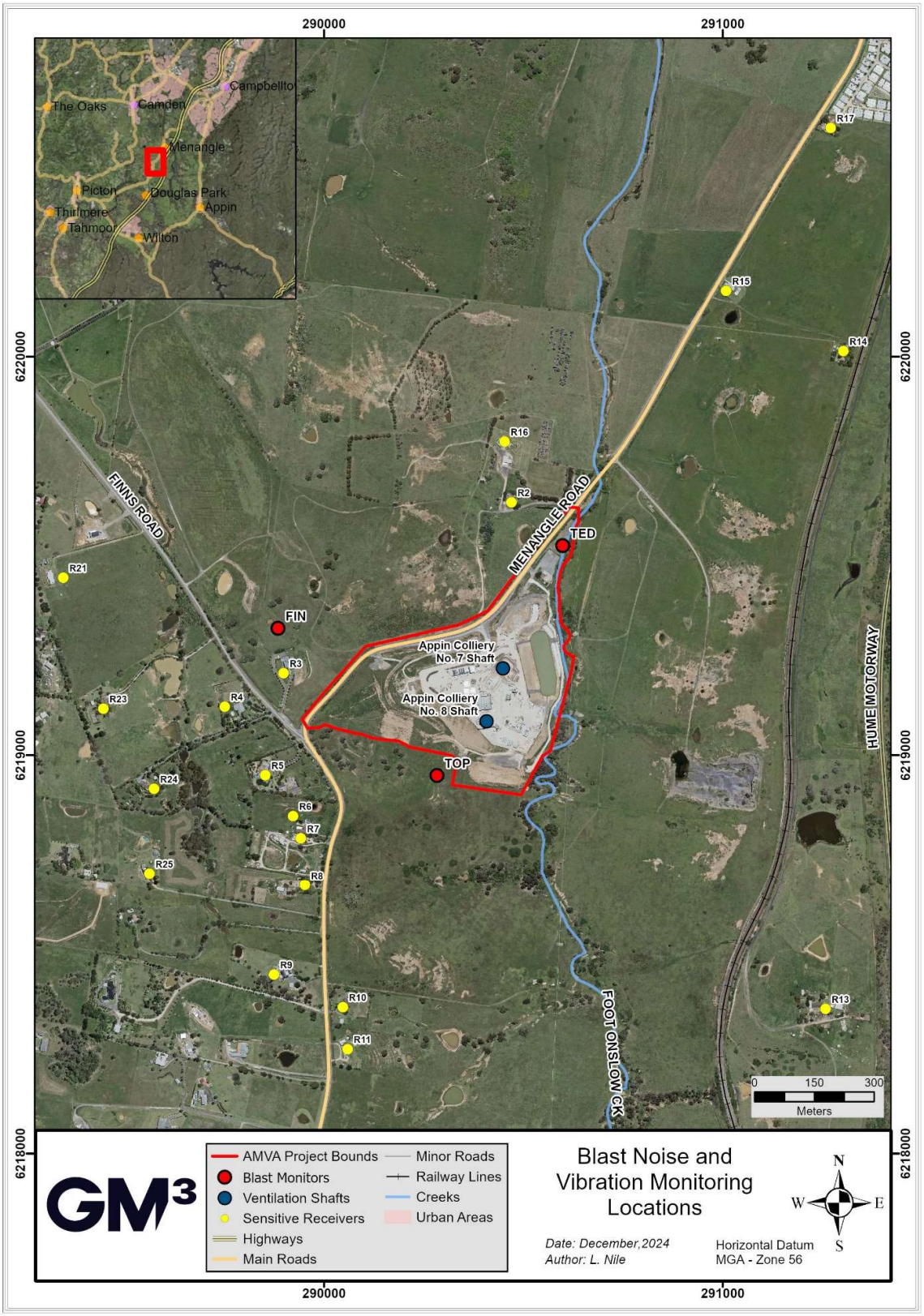


Figure 14 Noise and Vibration Monitoring Locations

9.6.2 Fume and Flyrock Monitoring

The Contractor utilises a network of gas monitors at various locations inside the ventilation shafts, (headframe building above collar doors, underneath collar doors, ventilation exhaust outlet, sinking stage platforms, underneath sinking stage's lowest platform) which are used to determine the presence of any hazardous blast fumes and confirm when it is safe to re-enter the shafts after a blast event.

Incidences of flyrock are assessed after each blast and any responses taken in line with the TARPs in the Contractors Explosives Management Plan. These may include revising blast designs and extending blast clearance zones until corrective actions are proven successful.

At the time of this CEMP review, headframe buildings and blast doors are in place over each shaft so it is highly unlikely concentrated blast fumes or flyrock would migrate off site.

9.7 Blast Related Community Consultation and Complaints Handling

9.7.1 Public Notification Procedures

Prior to the commencement of blasting operations, ICHPL held a Community Information Session with local residences within approximately 1000 m radius of the blasting area. This townhall session was to inform and educate the community on upcoming blasting operations, expected impacts and details on the management of concerns and complaints should they arise in relation to the blasting activities.

Further to this townhall, and prior to the blasting campaign commencement, the local community has also been provided written notification regarding the following:

- Notification process for blasts;
- Their entitlement to initial property inspections prior to blasting, and additional or future updated property inspections if required;
- The procedure available to residents for reporting possible blasting related damage to a residence or other vibration infrastructure (such as water supply or underground irrigation mains).

Residents within 1 km who elect to be notified, are notified by e-mail of the intended time of the next blast as soon as practicable before each blast.

Further to the above community engagement, a blast notification board, detailing the date and time of the next blast shall be maintained on both directions on Menangle Road and will be updated as soon as practicable before each blast.

Once main sink blasting reaches a steady state where blasting overpressure, noise and vibration impacts are negligible on the approved monitoring instrumentation, e-mail and blast board notifications (that have been undertaken for blasting in pre-sink phase by the blasting contractor) will cease.

9.7.2 Agency Notification

Prior to the commencement of blasting operations, ICHPL notified EPA of the intended commencement date and provide details of a site contact who is appointed to liaise with the EPA in regard to blasting matters.

10 COMMUNITY CONSULTATION AND COMPLAINTS HANDLING

All communication with the key stakeholders, local community or media will be undertaken in accordance with ICHPL Stakeholder Engagement Management Plan (SEMP).

Information distributed to the community and other stakeholders will detail relevant construction information (e.g. progress, traffic disruptions and controls, out of hours works etc.) and will be provided through a range of channels which may include:

- Community information sessions;
- Quarterly community newsletters, letterbox drops, open days and group tours.
- Appin Mine Community Consultative Committee (meets every two months).
- Menangle Advisory Panel.
- Individual meetings with residents and other key stakeholders as required.
- Content repository on the GM^3 website, updated as required.

ICHPL has a 24-hour, free community call line (1800 102 210) and email address (community@gm-3.com.au) which is displayed at all ICHPL Project and Mine Sites, and included in newsletters, letters and other correspondence. The call line is for all complaints and general enquiries regarding environmental or community issues associated with ICHPL's operations.

10.1 Stakeholder Consultation

In accordance with Condition 11 of Schedule 4A of the Project Approval, consultation was undertaken with the EPA, WSC and TfNSW regarding the development of the CEMP and relevant subplans (Traffic, Noise, Air Quality). The CEMP was provided for comment to the agencies listed in Table 17 which provides a summary of the stakeholder consultation during the preparation of the CEMP, the comment received and where this has been addressed in CEMP. Further evidence of consultation with agencies has been provided through the Major Projects Planning Portal.

Table 16 Record of consultation

Stakeholder	SUMMMARY OF CONSULTATION
EPA (CEMP generally, and Blast Management Plan)	The EPA reviewed the CEMP and BMP and provided the following feedback on 2nd November 2022: *I have reviewed the CEMP and thought it was very thorough.* *I have no substantive comments except for a minor clarification on page 69 copied below. Does "Section 7.6.1" in the text relate to the NVIA as I couldn't find that section in the CEMP?* ICHPL have amended the link on Section on page 69 accordingly.
TfNSW (Traffic)	Since issuing TfNSW the CEMP via the planning portal on 18th October 2022, ICHPL note that no feedback was received from TfNSW through the Major Projects planning portal. In addition, ICHPL have made multiple attempts to contact TfNSW for additional comment on the TMP, via phone and email with no response received. (18th October, 14th November and 10th January 2022. ICHPL have made small changes to the TMP based on feedback from WsC regarding heavy vehicle movements. There are no substantive changes to the TMP since feedback was received from TfNSW in relation to the Early Works CEMP and associated TMP. ICHPL note however that earlier feedback on the TMP has been integrated into the plan, and that the plan represents new feedback from the Roads Authority (WsC).
WSC (Traffic)	WsC requested that it be made explicit that vehicles which are not General Access Vehicles (GAV) be required to obtain relevant permits for access to site from the North on Menangle Rd. This change was made in Section 7.4.1 accordingly.

Details of the community consultation to be undertaken during construction of the AMVA Project can be found in Section 10.1.1.

10.1.1 Communication and Consultation Strategy

ICHPL's community consultation and communication is guided by the SEMP. The SEMP details the strategies used by ICHPL regarding social management and stakeholder engagement in the areas in which ICHPL operate. ICHPL acknowledges that commitment to a systematic approach is required to achieve sound social performance and best practice community relations. Such a system provides order and consistency so that stakeholder engagement is addressed through the

allocation of appropriate resources, assignment of responsibilities and ongoing evaluation of practices, procedures and processes.

To verify that these mechanisms are working effectively and that stakeholder engagement strategies are meeting both ICHPL and stakeholder requirements, evaluation methods are also employed. Such evaluation is informed primarily by community and stakeholder surveys, but also community enquiries/feedback/complaints, community committees, information forums or other similar communications and engagement mechanisms.

The SEMP is managed by, and under responsibility of, the Principal Community and Specialist Community. The SEMP provides the foundation for the strategies on communication and consultation required under the SEMP.

A number of rural residential properties (sensitive receivers) are in the general location of the AMVA Project. As these residential properties are the nearest to the AMVA Project, consultation will be undertaken with the applicable residents utilising the mechanisms detailed in Section 10.

10.2 Complaints, Enquiries and Disputes Procedure

All complaints received are managed in accordance with the ICHPL Handling Community Complaints, Enquiries and Disputes Procedure. Complaints and enquiries may also be received in-person by any ICHPL employee or contractor. If a community member attends the work site in-person, then their safety and welfare must be considered a priority.

Employees/contractors should be courteous and polite and use plain language.

In the first instance, community members should be referred to the Community Call Line and email address. If they do not wish to contact the Community Call Line , the following information should be recorded and immediately relayed to the Community Call Line:

- Date and time of visit
- First and last name of community member
- Phone number of community member
- Email address of community member
- Reason for the visit
- Do they require a call back?

Notifying the Community Call Line will alert the Corporate Affairs team who will trigger an investigation.

The purpose of the investigation is to validate the enquiry or complaint and determine the likely cause, if there are any mitigating circumstances, and identify opportunities to prevent a repeat. The investigation will commence as soon as practicable and will involve all relevant people directly related to the enquiry or complaint. An initial response or acknowledgement will be provided within 24 hours of the enquiry or complaint being received.

In most cases, the investigation can be completed within three or four business days unless the investigation calls for sampling, monitoring or multiple inspections. The outcomes of investigations, including steps taken and remedial or corrective action, will be discussed with relevant members of ICHPL and the community member. A summary of all complaints received during the reporting year will be provided as part of the Annual Review. A log of complaints is also maintained on the GM^3 website at: https://gm-3.com.au/appin-mine/.

10.3 Non-Compliance Management

10.3.1 Non-Compliance, Corrective Action and Preventative Action

Events, non-compliances, corrective actions and preventative actions are managed in accordance with the ICHPL Reporting and Investigation Standard and Environmental Compliance/Conformance Assessment and Reporting Procedure. These procedures which apply to all ICHPL operations, detail the processes to be utilised with respect to event and hazard reporting, investigation and corrective action identification. The key elements of the process include:

- Identification of events, non-conformances and/or non-compliances.
- Recording of the event, non-conformance and/or non-compliance in the event management system G360.
- Investigation/evaluation of the event, non-conformance and/or non-compliance to determine specific corrective and preventative actions.
- Assigning corrective and preventative actions to responsible persons in G360.
- Review of corrective actions to ensure the status and effectiveness of the actions.

Exceedance or non-compliances with relevant criteria will be reported to all relevant agencies via the Annual Review and EPL Annual Return or notified in accordance with Section 11.1.4.

10.3.2 Notification of Pollution Incidents to Government Authorities and the Public

In accordance with Condition 7 of Schedule 6 of the Project Approval and Condition R2 of EPL 2504, ICHPL is to notify the Planning Secretary, EPA and other relevant agencies of any incident that has caused (or threatens to cause) material harm to the environment. The process and contact numbers for these notifications is outlined in the Pollution Incident Response Management Plan (PIRMP). For any other incidents associated with the Project, the proponent shall notify the Planning Secretary and any other relevant agency as soon as practicable after the becoming aware of the incident (refer to Section 11).

The EPA is to be notified immediately following detection by telephoning 131 555 and DHPI by providing a notification on the Major Projects portal within 24 hours.

Within seven (7) days of these notifications, a written report is to be provided to the Planning Secretary and other relevant agencies (in accordance with Appendix 7 of the Project Approval) and the EPA (in accordance with Condition R2.2 of the EPL). Refer Section 11.1.3.

11 REPORTING AND REVIEW

11.1 Reporting

The monitoring results associated with the CEMP (see Sections 4) are compiled and reported to internal and external stakeholders (as required). The reports include:

- 14-day report (compliance with EPL water quality conditions which is updated on the ICHPL website).
- Annual Review (for Project Approval).
- Annual Return (for EPL).
- National Pollutant Inventory.
- Periodic environmental and operational updates to the Appin Mine Community Consultative Committee.

The results of compliance monitoring will be made available in the 14-day report included on the company website.

11.1.1 Annual Review

ICHPL will report on the AMVA Project environmental performance in the Appin Mine Annual Review.

The Annual Review is prepared in accordance with the requirement of Condition 4 of Schedule 6 of the Project Approval and is submitted to relevant agencies in September each year. Annual Reviews are made available to the general public via the GM^3 website.

11.1.2 Incident Notifications

The Project Approval defines an incident as:

"An occurrence or set of circumstances that causes or threatens to cause material harm to the environment, and as a consequence of that environmental harm, may cause harm to the health and safety of human beings, and which may or may not be or cause a non-compliance".

The Project Approval defines *Material harm to the environment* as:

Is harm that:

• *involves actual harm to the environment that may include (but not be limited to) a leak, spill, emission other escape or deposit of a substance, and as a consequence of that environmental harm (pollution), may cause harm to the health or safety of people; or*

• *results in actual loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)*

DHPI will be notified of any incidents as per Condition 7 and 7AA, Schedule 6 of the Project Approval, outlined below.

ICHPL must notify the Department within 24 hours of becoming aware of an incident. The notification must be made via the NSW planning portal (Major Projects) and address details of the incident including:

(a) date, time and location;

(b) a brief description of what occurred and why it has been classified as an incident;

(c) a description of what immediate steps were taken in relation to the incident; and

(d) identifying a contact person for further communication regarding the incident.

The Applicant must provide the Department with a subsequent incident report in accordance with Appendix 7 of the Project Approval (written report within 7 days as outlined below in Section 11.1.3).

11.1.3 Incident Reporting

As required by Appendix 7 of the Project Approval (as modified):

1. All incident notifications and reports must be submitted via the NSW planning portal (Major Projects).
2. The Applicant must provide notification as required under these requirements, even if the Applicant fails to give the notification required under Condition 7 of Schedule 6 or, having given such notification, subsequently forms the view that an incident has not occurred.
3. 3. Within 7 days (or as otherwise agreed by the Planning Secretary) of the Applicant making the immediate incident notification (in accordance with Condition 7 of Schedule 6), the Applicant is required to submit a subsequent incident report that:

   (a) identifies how the incident was detected;

   (b) identifies when the Applicant became aware of the incident;

(c) identifies any actual or potential non-compliance with conditions of consent;

(d) identifies further action(s) that will be taken in relation to the incident;

(e) a summary of the incident;

(f) outcomes of an incident investigation, including identification of the cause of the incident;

(g) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence, including the period for implementing any corrective and/or preventative actions; and

(h) details of any communication with other stakeholders regarding the incident.

4. The Applicant must submit any further reports as directed by the Planning Secretary.

11.1.4 Exceedance/Non-compliance Notifications

DPHI will be notified of any non-compliances in accordance with Condition 7A of Schedule 6 of the Project Approval as below:

Within seven (7) days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing and must be submitted via the NSW planning portal (Major Projects). The notification must 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 does not comply, the reasons for the non-compliance (if known), and what actions have been undertaken, or will be undertaken, and when, 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.*

The website is:

https://www.planningportal.nsw.gov.au/major-projects.

The EPA should also be notified of the exceedance/non-compliance (via email).

11.1.5 Notification of Landowners

If an exceedance of criteria listed in Schedule 4 of the Project Approval is identified, ICHPL will, in accordance with Condition 1 of Schedule 5 of the Project Approval:

- As soon as practicable and no longer than 7 days after monitoring results show the exceedance, 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
- If an exceedance of any relevant air quality criteria in schedule 4 is identified, 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).

11.2 CEMP Review

In accordance with Condition 5 of Schedule 6 of the Mine Approval, the CEMP will be reviewed, and if necessary revised, within three (3) months of:

- The submission of an Annual Review.
- The submission of an Incident Report.
- The submission of an Independent Environmental Audit report.
- Any modification to the conditions of the Project Approval (unless the conditions require otherwise).

- A direction of the Planning Secretary under Condition 4 of Schedule 2.

Outcomes from each review will be documented in the Management Plan Review Log. The CEMP will only be revised where a material change to site operations or environmental management has occurred, or in accordance with the review period on the CEMP. Administrative or descriptive changes do not constitute a material change. Where a review triggers a revision of the CEMP, the CEMP will be revised and submitted to the Planning Secretary for approval.

The approved CEMP will be implemented.

11.3 Audits

11.3.1 Independent Environmental Audit

In accordance with Condition 9 of Schedule 6 of the Project Approval, an Independent Environmental Audit (IEA) of the project shall be commissioned every three years, that will include a review of the CEMP. The audit report is required to be submitted to the Planning Secretary within six (6) weeks of completion of the IEA.

The most recent IEA was conducted in 2022, with the next IEA scheduled to be conducted in 2025. Recommendations from the IEA will be incorporated into the CEMP where appropriate.

11.3.2 Governance Reviews

Internal Governance Reviews of the CEMP will be nominally undertaken on an annual basis.

REFERENCES

DECC (2009) Interim Construction Noise Guideline. State of NSW and Department of Environment and Climate Change NSW

Department of Planning, Industry and Environment (2021) State significant development guidelines – preparing a submissions report

EMM Pty Ltd (2021) Air Quality and Greenhouse Gas Assessment for the Appin Mine Ventilation and Access Project

EPA (2017) Noise Policy for Industry

HGeo (2021) Groundwater Assessment Appin Mine Ventilation and Access Project

Illawarra Metallurgical Coal (June 2021) Intelligent Land Management Assessment, Appin Mine Ventilation and Access Project, Modification Report for modification to Project Approval 08_0150

Landcom (2004) Managing Urban Stormwater: Soils and Construction.

Niche Environment and Heritage (2021) Aboriginal Cultural Heritage Assessment Report for the Appin Mine Ventilation and Access Project

Niche Environment and Heritage (2021) Biodiversity Development Assessment Report for the Appin Mine Ventilation and Access Project

Niche Environment and Heritage (2021) Historical Heritage Assessment for the Appin Mine Ventilation and Access Project

RWDI Australia Pty Ltd (2021) Noise and Vibration Impact Assessment for the Appin Mine Ventilation and Access Project

South32 (2022) Early Works Construction Environmental Management Plan.

Transport and Urban Planning Pty Ltd (2021) Traffic Assessment Report for the Appin Mine Ventilation and Access Project

Wollondilly Shire Council (2011) Wollondilly Local Environmental Plan 2011.

12 Appendices

Appendix 1: AMVA Drivers Code Of Conduct

AMVA Drivers' Code of Conduct

Department: ENVIRONMENT **Site**: APPIN MINE

Role	Position
Document Owner	Superintendent Environmental
Document Approver	Superintendent Environmental

1. PURPOSE

The Appin Mine Ventilation Shaft and Mine Access (AMVA) Drivers' Code of Conduct is a component of the Construction Environmental Management Plan for the construction period of the AMVA project. The aim of the Drivers' Code of Conduct is to minimise the impacts of traffic associated with the AMVA Project on local residents by reducing noise and limiting traffic, resulting in a safer traffic environment for the whole community. All employees, visitors and contractors engaged to work at the AMVA site are required to drive in a responsible manner and adhere to the requirements of the AMVA Drivers' Code of Conduct.

2. ALLOWABLE TRAVEL TIMES

NO VEHICLES (other than personnel passenger vehicles transporting people to/from and/or between the mine's workplaces) are to travel to or from the AMVA site location outside of the allowable travel times in the table below (except in cases of emergency, as approved under Project Approval 08_0150 (as modified) or as approved by the site Construction Manager or delegate).[1] **These hours also apply during school holidays. There are no allowable travel times on Sundays and Public Holidays.**

Allowable Travel Times	
Monday to Saturday	7.00 am – 6.00 pm

Personnel passenger vehicles are defined as vehicles used to transport people to and from work, including trades persons required to travel with their tools of trade in work vehicles to get to and from work. Although personnel passenger vehicles may travel outside of the allowable times, personnel are strongly encouraged to plan their work so travel is not required outside of the allowable times.

[1] Concrete pouring will be undertaken 24 hours a day for shaft sinking activities. Oversize/overmass vehicles may need to travel outside of these hours to comply with restrictions imposed by Transport for NSW.

3. DRIVER CONDUCT EXPECTATIONS

DO NOT:

- Bring oversize trucks or loads without necessary approvals and controls.
- Exceed the maximum sign-posted speed limits on any roads.
- Overtake in awkward, inappropriate situations or where vision is limited.
- Throw rubbish out of your vehicle as you are travelling.
- Travel along Finns Road with Gross Vehicle Mass (GVM) of >15 tonnes.

DO:

- Access site through the preferred routes shown in Figure 1 (i.e. preferably not travel through Douglas Park township[2] and through Douglas Park gorge (Douglas Park Drive between Blades Bridge and Mitchell Place)[3].
- Hold a current and valid driver licence for the class of vehicle that you operate.
- Adjust your driving to the road conditions (slow down in wet conditions and on narrow roads).
- Demonstrate driver courtesy.
- Limit the use of compression braking (except where it is not safe to do so).
- Comply with the road rules pertaining to your vehicle.
- Comply with site parking (i.e. not on the side of public roads), speed limits and traffic management requirements.
- Drive in a manner that minimises vehicle noise.
- Ensure that loads are covered (where required), properly secured and no loose items can dislodge from trays.

4. RECORDING OF BREACHES

GM[3] will rely on both internal (via employees and management) and external (via the public) avenues when monitoring compliance to the DCOC.

A 24-hour Community Call Line (1800 102 210) and email (community@gm-3.com.au) is in place for local residents to lodge complaints against any driver observed contravening this Code. All complaints are investigated, and disciplinary action may be taken. Breach notices may also be issued. Complaints pertaining to a breach of the Code are included in the complaints report published to the GM[3] website: https://gm-3.com.au/appin-mine/.

Event reports will be completed by GM[3] personnel where breaches of the Code have been identified.

[2] Unless in support of local business (i.e. local service station, pharmacy, general store etc.).
[3] Unless travelling between GM[3] sites for work purposes.

5. PENALTIES FOR NON-COMPLIANCE

If a person or company is found to be acting contrary to this Code, disciplinary action may be taken. This will include, but not be limited to:

- 1st occurrence – warning letter.
- 2nd occurrence – warning letter and suspension of driver from site for a defined period.
- 3rd occurrence – final warning letter and review of the person's or company's continued working association with GM3.

Breaches will be recorded in the event recording system (G360) to assign actions and conduct investigations. Note that these breach notices apply over a 12-month rolling period. Opportunities to audit against attainable location technology in relevant vehicles will also be utilised for investigatory reasons.

GM3 reserves the right to review a person's or company's continued working association with the mine following any breaches of the Code.

6. REVIEW HISTORY

DATE	VERSION	BY	REASON
16/06/2022	1.0	Chris Schultz	New document
11/11/2024	2.0	Chris Schultz, Chris McEvoy	Update to GM3. Update to exemptions for travel and allowable travel times.

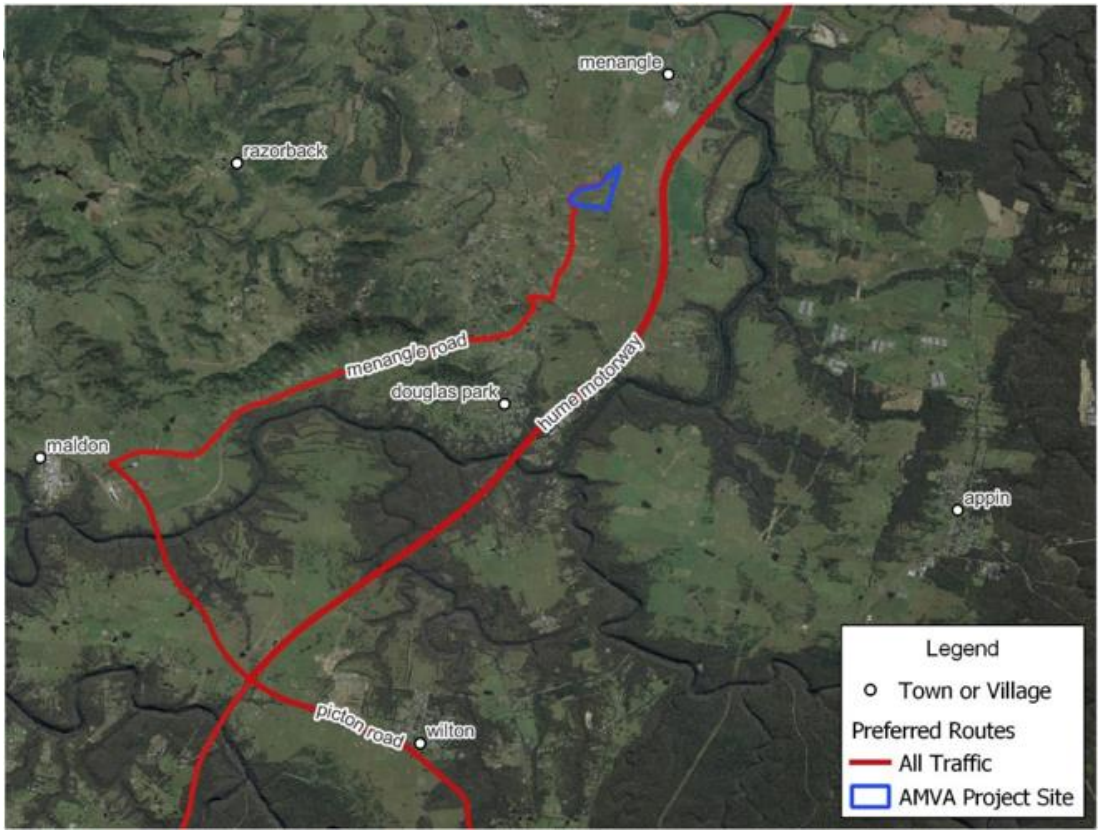


Figure 1: Preferred Travel Routes - AMVA Project

Appendix 2: Further Approval for 24/7 Blasting

Department of Planning, Housing & Infrastructure

Our ref: MP08_0150-PA-120

Gary Brassington
General Manager Sustainability and Approvals
GM3
Sent via NSW Major Projects Portal

05/02/2025

Subject: Appin Mine Ventilation and Access Project – Application for 24/7 Blasting

Dear Mr Brassington

I refer to your letter dated 23 January 2025, submitted in accordance with Condition 5 of Schedule 4A of the development consent for the Bulli Seam Operations Project (MP08_0150), requesting the Planning Secretary's approval to carry out blasting outside the hours specified in condition 4 of Schedule 4A of the development consent.

Specifically, your request seeks approval to undertake blasting associated with the main shaft sink for Vent Shaft 7 and Vent Shaft 8 on a 24-hour, 7 days a week basis.

I acknowledge the information provided in support of your application including:

- confirmation that noise attenuation works have been completed at both shaft headframe buildings in preparation for the main shaft sink phase;
- confirmation from Wave Acoustic Consulting that attenuation from the headframe buildings is likely to exceed 30 dB and compliance with the L_{Zpeak} and "night time" L_{AFmax} criterion is likely to be achieved during the main sink phase;
- the results of blast monitoring undertaken in December 2024 and January 2025 demonstrating that blasting noise complies with the night-time L_{AFmax} sleep disturbance maximum noise trigger level criteria (54 dBA) specified in Table 2B of condition 2C, and therefore satisfies Condition 5 of Schedule 4A of the development consent; and
- your commitment to continue all monitoring, management and consultation activities outlined in your letter and to update the Construction Environmental Management Plan for the project.

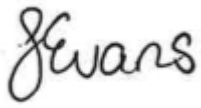
I also note that a transition to 24/7 blasting would have the benefit of expediting the construction schedule and reducing the overall duration of blasting and construction impacts on the community.

Accordingly, as nominee of the Planning Secretary, I approve blasting associated with the main shaft sink of Vent Shaft 7 and Vent Shaft 8 to be carried out on a 24-hour, 7 days a week basis from the date of this approval until 31 July 2025.

Further application may be made to the Planning Secretary following this period, supported by evidence demonstrating ongoing compliance with the blasting noise limits outlined in the consent

If you wish to discuss the matter further, please contact Gabrielle Allan on 02 9585 6078.

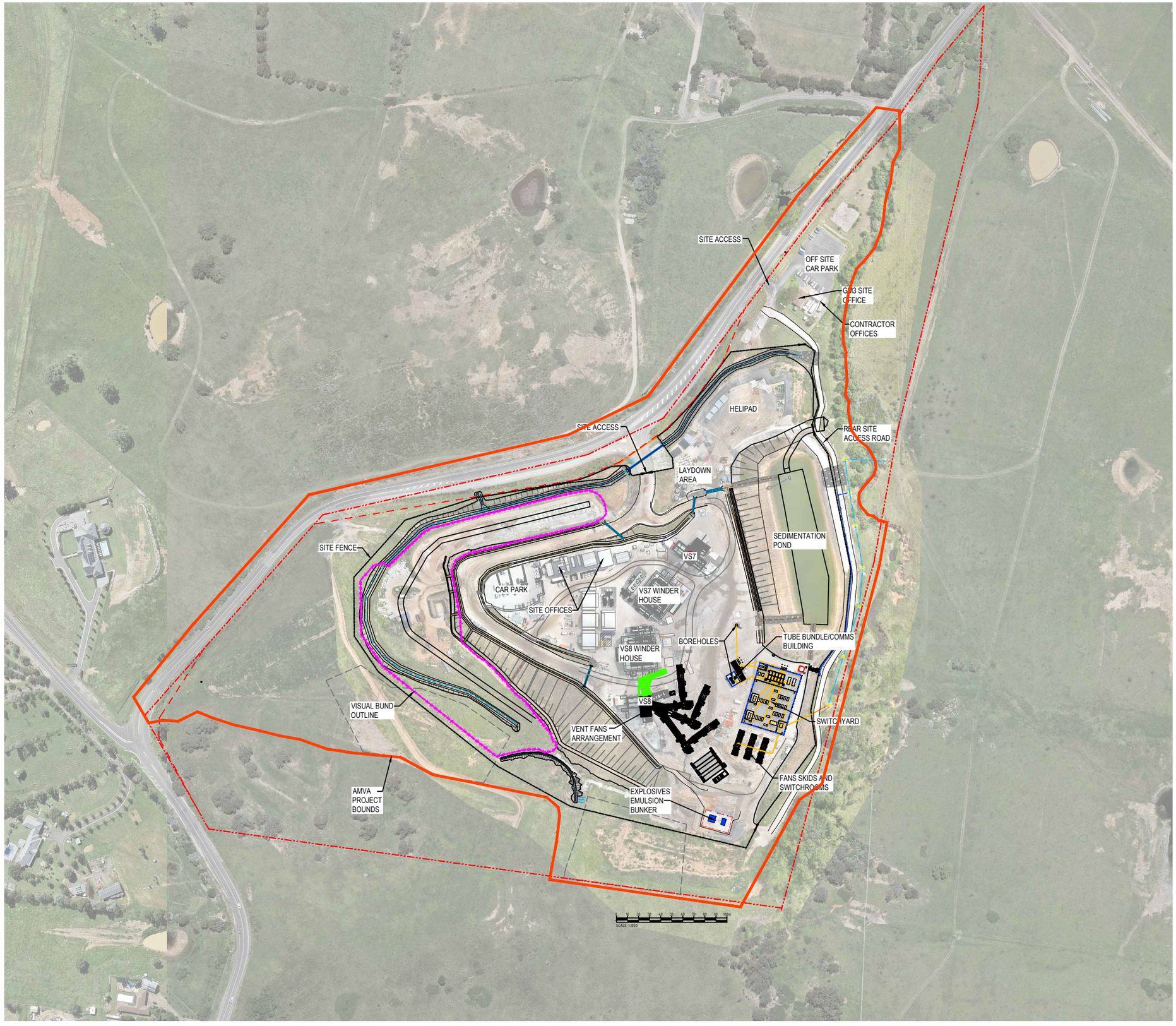
Yours sincerely



Jessie Evans
Director, Resource Assessments
Resource Assessments

As nominee of the Planning Secretary

Appendix 3: Layout Plan


SITE ACCESS
OFF SITE CAR PARK
GM3 SITE OFFICE
CONTRACTOR OFFICES
HELIPAD
SITE ACCESS
REAR SITE ACCESS ROAD
LAYDOWN AREA
SEDIMENTATION POND
SITE FENCE
VS7
CAR PARK
VS7 WINDER HOUSE
SITE OFFICES
BOREHOLES
TUBE BUNDLE/COMMS BUILDING
VS8 WINDER HOUSE
VS8
VISUAL BUND OUTLINE
VENT FANS ARRANGEMENT
SWITCHYARD
FANS SKIDS AND SWITCHROOMS
AMVA PROJECT BOUNDS
EXPLOSIVES EMULSION BUNKER

Appendix 4: CEMP Approval

Department of Planning, Housing and Infrastructure

Our ref: MP08_0150-PA-126

Mr. Chris McEvoy
Specialist Approvals
Illawarra Coal Holdings Pty. Ltd
PO BOX 514
Unanderra, NSW, 2526

07/04/2025

Subject: Appin Mine Ventilation and Access Project Construction Environmental Management Plan (CEMP)

Dear Mr McEvoy

I refer to the Appin Mine Ventilation and Access Project Construction Environmental Management Plan (CEMP) submitted in accordance with Condition 5, Schedule 4A of the development consent for the Bulli Seam Operations Project (MP08_0150).

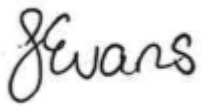
The Department has carefully reviewed the document and is satisfied that it meets the requirements of the relevant conditions of consent (MP08_0150).

Accordingly, as nominee of the Planning Secretary, I approve the Appin Mine Ventilation and Access Project Construction Environmental Management Plan (rev. 3, 25 March 2025).

You are reminded that if there are any inconsistencies between the Plan and the conditions of consent, the conditions prevail. Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Emily Pemberton on 02 8275 1783 or at emily.pemberton@dpie.nsw.gov.au.

Yours sincerely



Jessie Evans
Director, Resource Assessments
Resource Assessments

As nominee of the Planning Secretary