June, 2026

Rehabilitation Management Plan

Dunmore Hard Rock Quarry

REHABILITATION MANAGEMENT PLAN

Prepared for Boral Metro Quarries

031256

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DOCUMENT CONTROL

Version	Date	Description	Prepared by	Reviewed by	Planning Secretary Approval
01	14 June 2019	For Boral	EMM	Boral	
02	15 July 2025	Major revision in accordance Modification 13 Conditions of Consent	Mark Nolan and Emilie Mascarenhas (Cambium Group)	Boral	
03	11 September 2025	Update following consultation with Shellharbour City Council and Community Consultative Committee	Cambium Group	Boral Quarries	
04	28 October 2025	Minor update to ensure consistency with Rehabilitation Strategy	Cambium Group	Boral Quarries	
05	16 June 2026	Minor update following DPHI review	Cambium Group	Boral Quarries	

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1 Introduction

1.1 Background

Dunmore Hard Rock Quarry (the quarry) is owned and operated by Boral Resources (NSW) Pty Ltd and is located at Tabbita Road Dunmore, approximately 12 kilometres north-west of Kiama in the Shellharbour Local Government Area. The quarry produces hard rock, which is crushed to produce coarse aggregates and road construction materials, and fines that are used as manufactured sand or bedding material.

Development Consent (DA 470-11-2003), issued 19 November 2004 by the Minister for Infrastructure and Planning, authorises Boral to produce up to 2.5 million tonnes of hard rock a year (Mtpa), and transport it offsite by road and rail to local and regional markets.

Since consent was issued in November 2004, there have been several approved modifications with the latest Modification 13 being granted in June 2024. The project approval requires the preparation and implementation of several management plans to guide the environmental management of the development throughout its operational life. In accordance with Condition of Approval (CoA) 61, a Rehabilitation Management Plan (RMP) is required.

The NSW Department of Planning, Housing and Infrastructure has endorsed the authors as suitably qualified and experienced persons for the preparation of this RMP (Appendix A:).

1.2 Scope and objectives

The primary objective of this RMP is to provide guidance and direction for the management, protection and rehabilitation of areas through the operation of the quarry, and to meet the Project Approval requirements.

The RMP provides the framework and guidance for rehabilitation activities to be conducted in a manner that:

- complies with regulatory requirements including the Project Approval and the Environmental Protection Authority (EPA) Environment Protection Licence (EPL);
- ensures compliance with relevant environmental legislation;
- ensures appropriate and representative monitoring is conducted for verification that the RMP is effectively implemented and meeting its objectives; and
- ensures appropriate contingencies and resources for mitigating adverse impacts to rehabilitation.

1.3 Alignment with other plans

This document builds upon the information included in the Rehabilitation Strategy and a number of other management plans that apply to the quarry, including the Water Management Plan and the Flora and Fauna Management Plan. The management actions in the RMP complement these plans and therefore management actions comprised within these plans require holistic consideration.

1.4 Consultation

Shellharbour City Council has been consulted in the development of this RMP. Shellharbour City Council was provided with version 01 of this RMP and their comments have been addressed in this version 02.

Evidence of consultation is provided in Appendix B: as well as a summary of Boral's responses to comments from Shellharbour City Council.

2 Statutory requirements and guidelines

2.1 NSW Legislation

Key environmental legislation relating to quarry rehabilitation that have been considered in this RMP include:

- NSW Environment Planning and Assessment Act 1979 (EP&A Act)
- Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
- NSW Fisheries Management Act 1994 (FM Act)
- NSW Protection of the Environment and Operations Act 1997 (POEO Act)
- NSW National Parks and Wildlife Act 1974 (NPW Act)
- NSW Biosecurity Act 2015 (BS Act)
- NSW Biodiversity Conservation Act 2016 (BC Act)
- NSW Water Management Act 2000 (WM Act)
- Mining Act 1992
- State Environmental Planning Policy (Resources and Energy) 2021.

2.1.1 Environmental Planning and Assessment Act 1979 (Project Approval Conditions)

The quarrying operations will continue to be subject to the provisions of the EP&A Act for any subsequent changes or modifications to the operations. The operations will need to be able to demonstrate compliance against consolidated Project Approval issued under the provisions of the EP&A Act. Table 1 summarises the Conditions of Approval (CoA) relevant to this RMP and a cross-reference to the location within this RMP where the requirement is addressed.

Table 1 Consolidated Rehabilitation related Conditions of Approval

<table>
<tr><th>CoA</th><th>Condition of Project Approval</th><th>Reference in RMP</th></tr>
<tr><td colspan="3">SCHEDULE 4
SPECIFIC ENVIRONMENTAL CONDITIONS</td></tr>
<tr><td colspan="3">REHABILITATION</td></tr>
<tr><td colspan="3">Rehabilitation Objectives</td></tr>
<tr><td>52</td><td>The Applicant must rehabilitate the site to the satisfaction of the Planning Secretary. Rehabilitation of the site must comply with the objectives in Table 10.
Table 10: Rehabilitation objectives
<table>
<tr><th>Feature</th><th>Objective</th></tr>
<tr><td>All areas of the site affected by the development</td><td>• Safe and non-polluting
• Hydraulically and geotechnically stable
• Fit for the intended post-quarrying land use(s)
• Establish the final landform and post-quarrying land use/s as soon as practicable after cessation of quarrying operations
• Minimise post-quarrying environmental impacts
• Integrated with surrounding natural landforms and other quarry rehabilitated landforms, to the greatest extent practicable
• Minimise visual impacts when viewed from surrounding land to the greatest extent practicable
• Ensure safety of native fauna and stock</td></tr>
<tr><td>Infrastructure</td><td>• All infrastructure that is not to be used as part of the final land use is removed.
• All infrastructure that is to remain as part of the final land use is compatible with the intended post-quarrying land use/s, is safe and does not pose any hazard to the community.</td></tr>
<tr><td>Water</td><td>• Water retained on the site is appropriately licensed and fit for the intended post-quarrying land use/s
• Groundwater quality is consistent with, or better than the pre-disturbance water quality</td></tr>
</table></td><td>Section 7.1, 7.2</td></tr>
</table>

	Final void	• Optimise the size and depth of the final void to ensure the final landform is stable and non-polluting • Minimise to the greatest extent practicable: - the drainage catchment and groundwater inflows; - any high wall instability risk; and - the risk of flood interaction. • Maximise potential for beneficial reuse, where practicable	
	Community	• Ensure public safety • Ensure the risk of bushfire is similar to or less than the pre-quarrying environment • Minimise adverse socioeconomic effects associated with quarry closure.	
53	The rehabilitation objectives in Table 10 apply to the entire site, including all landforms constructed under either this consent or previous consents. However, the Applicant is not required to undertake any additional earthmoving works on landforms that have been approved and constructed under previous consents, except where those earthworks are required for the establishment of a stable, non-polluting, and free-draining landform.		Section 7.1
Progressive Rehabilitation			
54	The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable steps must be taken to minimise the total area exposed at any time. Interim stabilisation and temporary vegetation strategies must be employed when areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated. *Note: This condition does not prevent further disturbance at some later stage of the development of areas that have been rehabilitated.*		Section 4.3
Rehabilitation Management Plan			
61	The Applicant must prepare a Rehabilitation Management Plan for the development. The plan must: c) be prepared by suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary;		Section 1.1, Appendix A:

	d) be prepared in consultation with the Department and Council;	Section 1.4, Appendix B:
	e) include detailed quarry plans and scheduling for progressive rehabilitation to be initiated, undertaken and/or completed over the next five years, or other suitable time period as agreed with the Planning Secretary;	Section 4.3
	f) include a plan of water management infrastructure that is required to enable the function of the final landform after rehabilitation is complete;	Section 4.4
	g) include detailed completion criteria for each rehabilitation objective included in Table 10, and any other rehabilitation objective identified in the rehabilitation strategy;	Section 7.2
	h) describe the measures to be implemented on the site to achieve the completion criteria;	Section 5, 6
	i) describe in detail the performance indicators to be implemented to ensure compliance with each completion criteria and the rehabilitation objectives in Table 10;	Section 7.2
	j) include a program to monitor, independently audit and report on progress against the completion criteria and the effectiveness of the measures implemented to achieve the completion criteria;	Section 7.3
	k) describe an adaptive management process that will be implemented if monitoring indicates that the measures implemented to achieve the completion criteria are not effective and/or if progress against the completion criteria is not consistent with the Rehabilitation Management Plan or Rehabilitation Strategy;	Section 7, 8.4
	l) describe any further studies, work, research, or consultation that will be undertaken to expand the site-specific rehabilitation knowledge base, reduce uncertainty and improve rehabilitation outcomes; and	Section 4.1, 4.2
	m) include a program to review and update the plan every five years including any revisions to the rehabilitation of the site identified by updates to the Rehabilitation Strategy.	Section 8.4

SCHEDULE 5 **ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING**		
ENVIRONMENTAL MANAGEMENT		
Management Plan Requirements		
2	The Applicant must ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include: a) detailed baseline data;	Section 7.3
	b) a description of: – the relevant statutory requirements (including any relevant approval, licence or lease conditions); – any relevant limits or performance measures/criteria; and – the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;	Section 2, 7.2
	c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	Section 5, 6
	d) a program to monitor and report on the: – impacts and environmental performance of the development; and – effectiveness of any management measures (see (c) above);	Section 7, 8.2.1
	e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;	Section 7.2, 7.4
	f) a program to investigate and implement ways to improve the environmental performance of the development over time;	Section 7, 8.4

	g) a protocol for managing and reporting any: – incidents; – complaints; – non-compliances with statutory requirements; and – exceedances of the impact assessment criteria and/or performance criteria;	Section 8.1, 8.2.1, 8.2.3, 8.2.5
	h) a protocol for periodic review of the plan; and	Section 8.4
	i) a document control table that includes version numbers, dates when the management plan was prepared and reviewed, names and positions of people who prepared and reviewed the management plan, a description of any revisions made and the date of the Planning Secretary's approval. Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.	Page 1
Revision of Strategies, Plans & Programs		
4	Within 3 months of the submission of an: a) incident report under condition 7 below; b) Annual Review under condition 9 below; c) audit report under condition 10 below; and d) any modifications to this consent, the Applicant must review, and if necessary revise, the strategies, plans, and programs required under this consent, to the satisfaction of the Planning Secretary. Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.	Section 8.4

Adaptive Management		
5	The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 4. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation. Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity: a) take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur; b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and c) implement remediation measures as directed by the Planning Secretary, to the satisfaction of the Planning Secretary.	Section 8.2.3
REPORTING AND AUDITING		
Incident Reporting		
7	The Applicant must immediately notify the Department and any other relevant agencies after it becomes aware of an incident. The notification must be in writing via the Major Projects Website and identify the development (including the development application number and name) and set out the location and nature of the incident.	Section 8.2.3
Non-Compliance Notification		
7A	Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing via the Major Projects Website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.	Section 8.2.4

	Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	
Annual Review		
9	By the end of September each year, or other timing as may be agreed by the Planning Secretary, the Applicant must submit a report to the Department reviewing the environmental performance of the development to the satisfaction of the Planning Secretary. This review must: a) describe the development (including rehabilitation) that was carried out in the previous financial year, and the development that is proposed to be carried out over the current financial year; b) include a comprehensive review of the monitoring results and complaints records of the development over the previous financial year, which includes a comparison of these results against the: – relevant statutory requirements, limits or performance measures/criteria; – requirements of any plan or program required under this consent; – monitoring results of previous years; and – relevant predictions in the documents listed in condition 2 of Schedule 3; c) identify any non-compliance over the last financial year, and describe what actions were (or are being) taken to ensure compliance; d) identify any trends in the monitoring data over the life of the development; e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and f) describe what measures will be implemented over the current financial year to improve the environmental performance of the development.	Section 8.2.1

INDEPENDENT ENVIRONMENTAL AUDIT		
10	Prior to 1 April 2017, and every three years thereafter, unless the Planning Secretary directs otherwise, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary; b) include consultation with the relevant agencies and the CCC; c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent and any relevant EPL and/or Water Licences (including any assessment, plan or program required under these approvals); d) review the adequacy of any approved strategies, plans or programs required under the abovementioned approvals; e) recommend appropriate measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under the abovementioned approvals; and f) be conducted and reported to the satisfaction of the Planning Secretary. Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Planning Secretary.	Section 8.3

3 Site and surrounds

3.1 Site location

Dunmore Hard Rock Quarry is located on Tabbita Road, Dunmore in the Shellharbour local government area (LGA) and the Illawarra Local Aboriginal Land Council area (EMM 2019). The quarry is located 25 kilometres (km) south of Wollongong, approximately 8 km north- west of Kiama (Figure 1).

The quarry is within Boral's Dunmore landholdings adjacent to the Princes Highway, which also includes a sand dredging operation, known as Dunmore Sand and Soil (DSS), and the Dunmore Concrete Batching Plant. Access to the site is via Tabbita Road which connects directly to the Princes Highway via a grade separated intersection.

3.2 Surrounding land uses

Land uses surrounding the quarry are primarily rural, rural residential and industrial. Residential development in the area includes the suburbs of Shell Cove, Minnamurra, Kiama Downs, Mount Terry and Albion Park. These suburbs are situated between 2 km and 4.5 km from the quarry. Jamberoo Action Park is approximately 2.5 km south-west of the quarry. There are also several other quarrying operations in the area, such as Cleary Bros Albion Park Quarry, Hanson's Bass Point Quarry, and Holcim's Albion Park Quarry. Other nearby industrial land uses include Dunmore Waste Depot, Integral Energy and Dunmore Resources and Recycling (EMM 2023)

3.3 Environmental context

The quarry is positioned on the east-facing slope of Locking Hill, and the south-facing slope of Gooseberry Hill, north of Rocklow Creek. The elevation of the western extent of the quarry is approximately 160 metres Australian Height Datum (m AHD), which decreases to approximately 30 m AHD on the eastern side (EMM 2023).

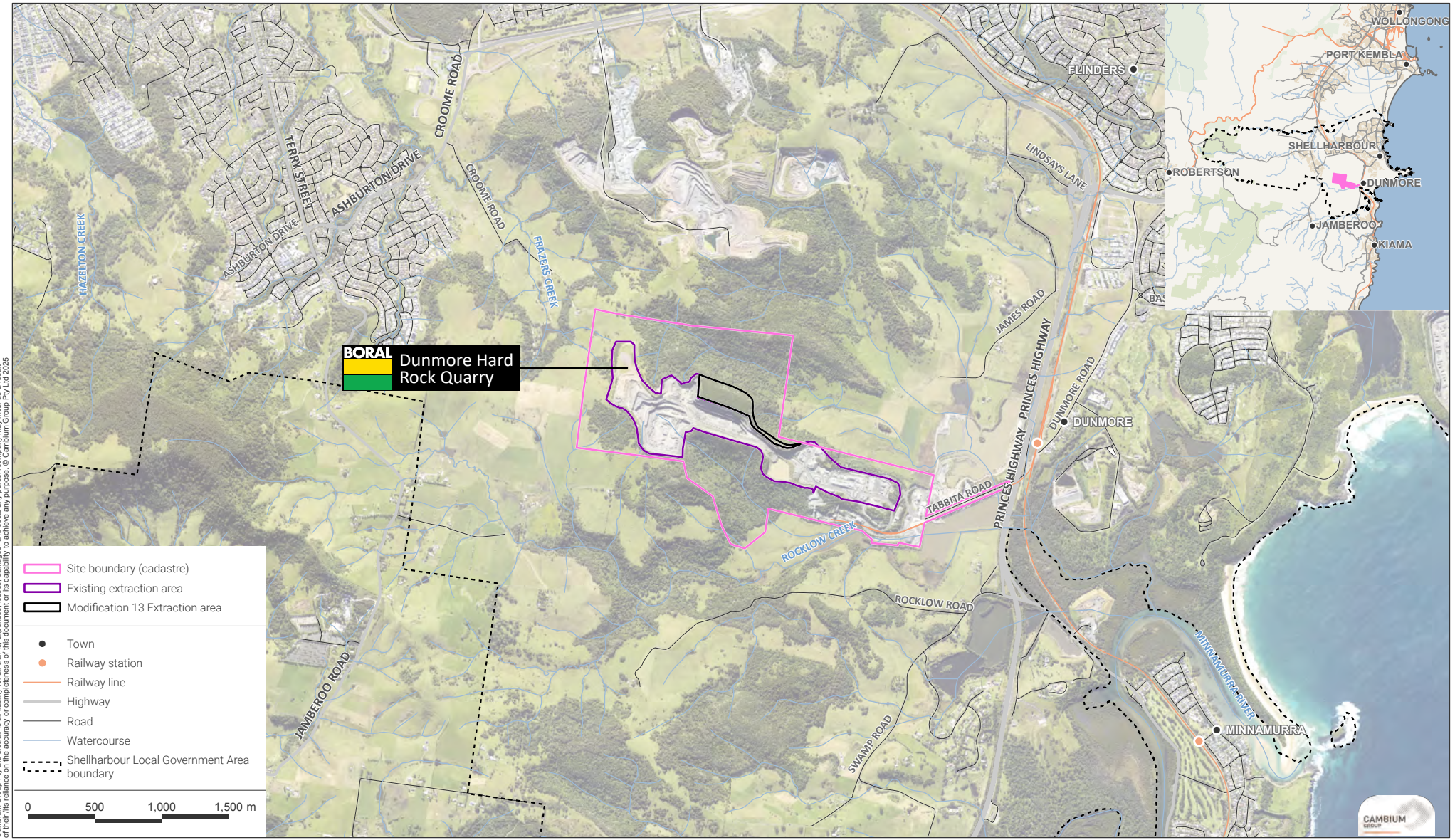
A generally continuous vegetated buffer lies between the residential areas of Albion Park and Mount Terry and the quarrying operations to the east. Small pockets of vegetation remain to the west of the quarry, with large stands of remnant vegetation to the north and south.

The Rail Infrastructure Corporation (RIC) Pit extension (Modification 13) impacts two threatened flora species, Illawarra Zieria (*Zieria granulata*) and Illawarra Irene *(Irenepharsus trypherus)*, listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and a critically endangered ecological community (CEEC) *Melaleuca armillaris Tall Shrubland in the Sydney Basin Bioregion*, listed under the NSW *Biodiversity Conservation Act 2016* (BC Act). The RIC Pit extension is mapped as Terrestrial Biodiversity – Environmental Sensitive Land under the Shellharbour LEP (EMM 2023).

The nearest watercourses to the quarry include Rocklow Creek which runs directly south of the quarry. An unnamed tributary of Rocklow Creek runs directly north of the RIC Pit extension within a gully landform. The close surrounds of the quarry is almost entirely mapped as bushfire prone land. The RIC Pit extension is mapped as bushfire prone land - vegetation category 1 (EMM 2023).

Figure 1
Site locality

DUNMORE HARD ROCK QUARRY
REHABILITATION MANAGEMENT PLAN



Source: LPI (2019), Aerometrex (2023), Boral (2022, 2024), Cambium Group (2023).

Projected coordinate system GDA2020 MGA Zone 56 031256_F1_DQ_RMP_SL_250219_v01

3.4 Dunmore Hard Rock Quarry operations

The quarry is currently approved under Development Consent 470-11-2003. Since the consent was issued there have been a number of modifications the latest being Modification 13, approved in June 2024. Material is approved to be extracted at a rate of up to 2.5 million tonnes per annum (Mtpa) until 2043. The quarried resource is latite volcanics, which are crushed to produce a range of rock aggregate products. Drilling and blasting are the principal extraction methods with extracted material processed on site.

The quarry has been in operation for approximately 100 years and, over time, extraction has progressed in a westwards direction. Extraction has occurred from a single contiguous open area which is elongated from east to west and has an approved boundary of 84 hectares (ha). Modification 13 approves an extension of the RIC Pit to the north of the existing RIC pit. The extraction area contains four pits: Original Dunmore Quarry, RIC Pit (including the RIC pit extension approved by Modification 13), Croome Farm Pit and Croome West Pit. A noise and visual bund has been completed at Croome West Pit.

The hard rock produced at the quarry is transported by rail and road to supply construction materials to local and regional markets.

The quarry layout is shown in Figure 2.

3.4.1 Quarry infrastructure

Site infrastructure comprises a material processing and wash plant facility, rail loading facility, product stockpiles and site offices located east of the quarry pit. The processing plant is located south of the original quarry pit. The site's rail siding runs parallel to Tabbita Road, beginning east of the processing plant and passing under the Princes Highway before connecting to the Illawarra Railway Line. Products to be dispatched by rail are generally stockpiled south of the rail sliding.

3.4.2 Original quarry

Extraction from the original quarry, located on Boral-owned land, commenced in 1921. The existing extraction floor in the original quarry slopes gradually to the east. Elevations of the floor vary from 30 m AHD to 60 m AHD and there are localised faces where some of the agglomerate has been extracted. The outer faces of the original quarry have been retained to assist in screening exposed extraction faces and stockpiled by-products on the quarry floor. The original quarry is currently being used as a stockpiling area.

3.4.3 Croome Farm Pit

The western area, referred to as Croome Farm Pit extraction area, is owned by Boral. Extraction commenced in this area in 2000. Extraction is approved to a depth of 55 m AHD. The quarry design has bench heights of 15 m and benches approximately 5 m to 10 m wide.

3.4.4 Croome West Pit

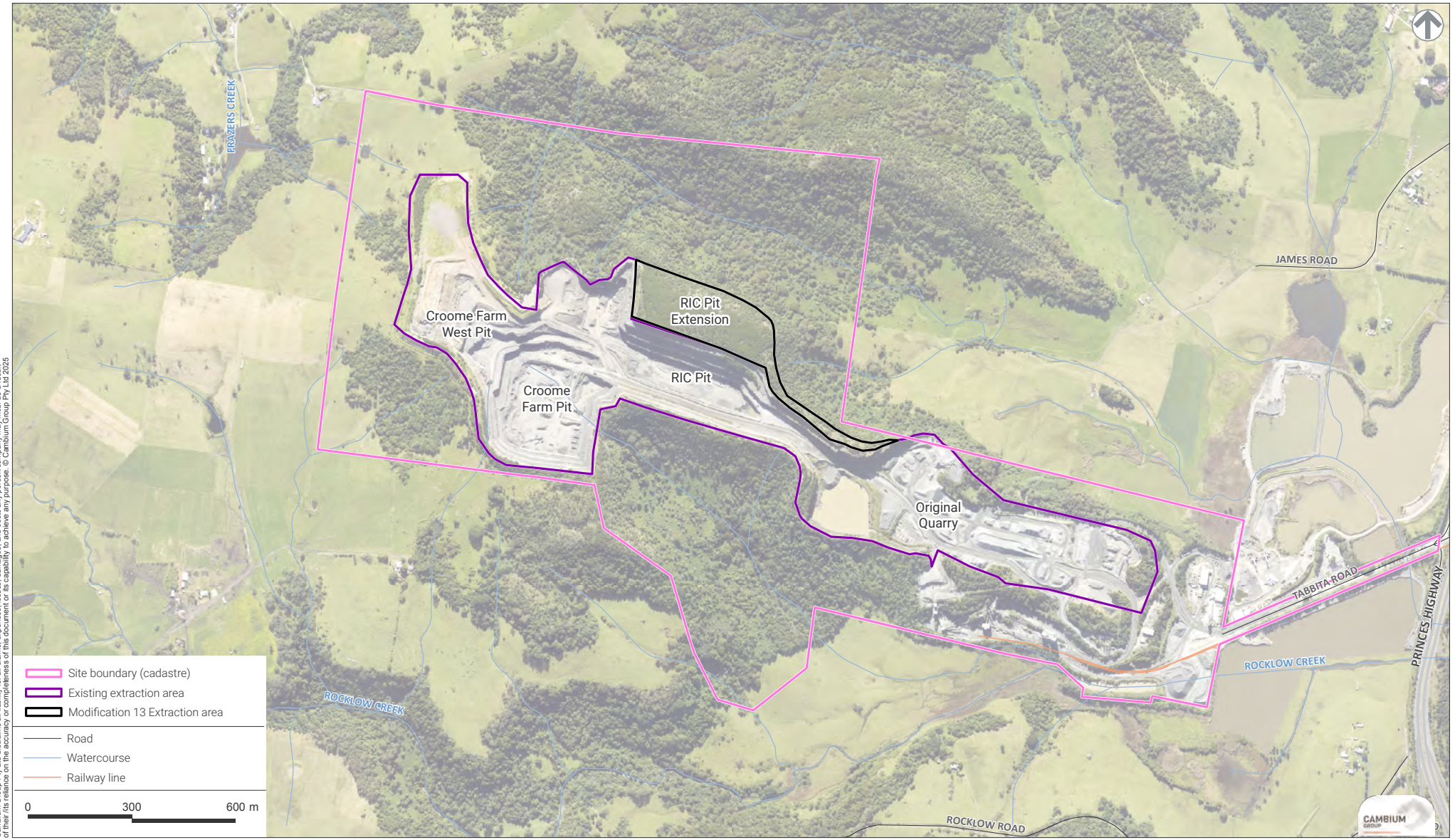
The pit floor ranges from 60 m AHD on the eastern side to 68 m AHD on the western side. Extraction is approved to 60 m AHD. The quarry design has bench heights of 15 m benches approximately 5 m to 10 m wide. A noise and visual bund has been constructed and vegetated around the natural surface of this pit.

3.4.5 Rail Infrastructure Corporation (RIC) Pit including RIC Extension

The central extraction area of the quarry is referred to as RIC Pit. Extraction within this area commenced in 1986. Extraction is approved to a Depth of 43 m AHD. The quarry design has bench heights of 15 m benches approximately 5 m to 10 m wide.

Figure 2
Quarry layout

DUNMORE HARD ROCK QUARRY
REHABILITATION MANAGEMENT PLAN



Source: LPI (2019), Aerometrex (2023), Boral (2022, 2024), Cambium Group (2023).

Projected coordinate system GDA2020 MGA Zone 56 031256_F3_DQ_RMP_QL_250219_v01

4 Rehabilitation Management

4.1 Rehabilitation approach

Reconstructive landscaping within any proposed development area will be designed to integrate the built environment with bushland. This involves selecting species that will not invade the surrounding bushland and that will provide fauna habitat. This is particularly important at the interface of the development and native bushland.

The disturbance associated with the quarry (existing and proposed) is situated across a diverse range of landscapes, and will comprise a variety of landforms including noise and visual bunds, quarry benches, quarry floor, dams and infrastructure areas.

The main aims of rehabilitation are to maintain the geomorphic stability of the rehabilitation domains including pit walls, benches, quarry floor and water bodies. The broad rehabilitation concept for disturbed land within the quarry includes the reshaping and stabilisation of post-mining landforms, growth media treatments of reshaped landforms, and the establishment and development of native vegetation communities as shown in the interim conceptual final landform.

The Rehabilitation Strategy describes additional studies, work, research and consultation that will be undertaken at various stages of quarry development to improve rehabilitation outcomes. These include implementation of a risk based approach, closure planning, development of a final landform and post-quarry land use strategy and a stakeholder engagement plan.

4.2 Final landform

CoA 58 requires the preparation of a detailed final landform feasibility assessment within 5 years of the commencement of quarry operations within the RIC pit extension area. The assessment will contain a conceptual final landform study that includes but is not limited to:

i. an assessment of alternative means of discharging water (including the option of nil release of water) from the rehabilitated quarry, including conceptual designs and cost estimates;

ii. an investigation and conceptual design of potential post-quarrying land use options, including opportunities to align with relevant local and regional strategic land use objectives and surrounding land uses; and

iii. an assessment of how the rehabilitation of the project can be proactively integrated with the rehabilitation strategies of neighbouring quarries; and

iv. establishing in perpetuity vehicle access to the final landform that facilitates the proposed final land use.

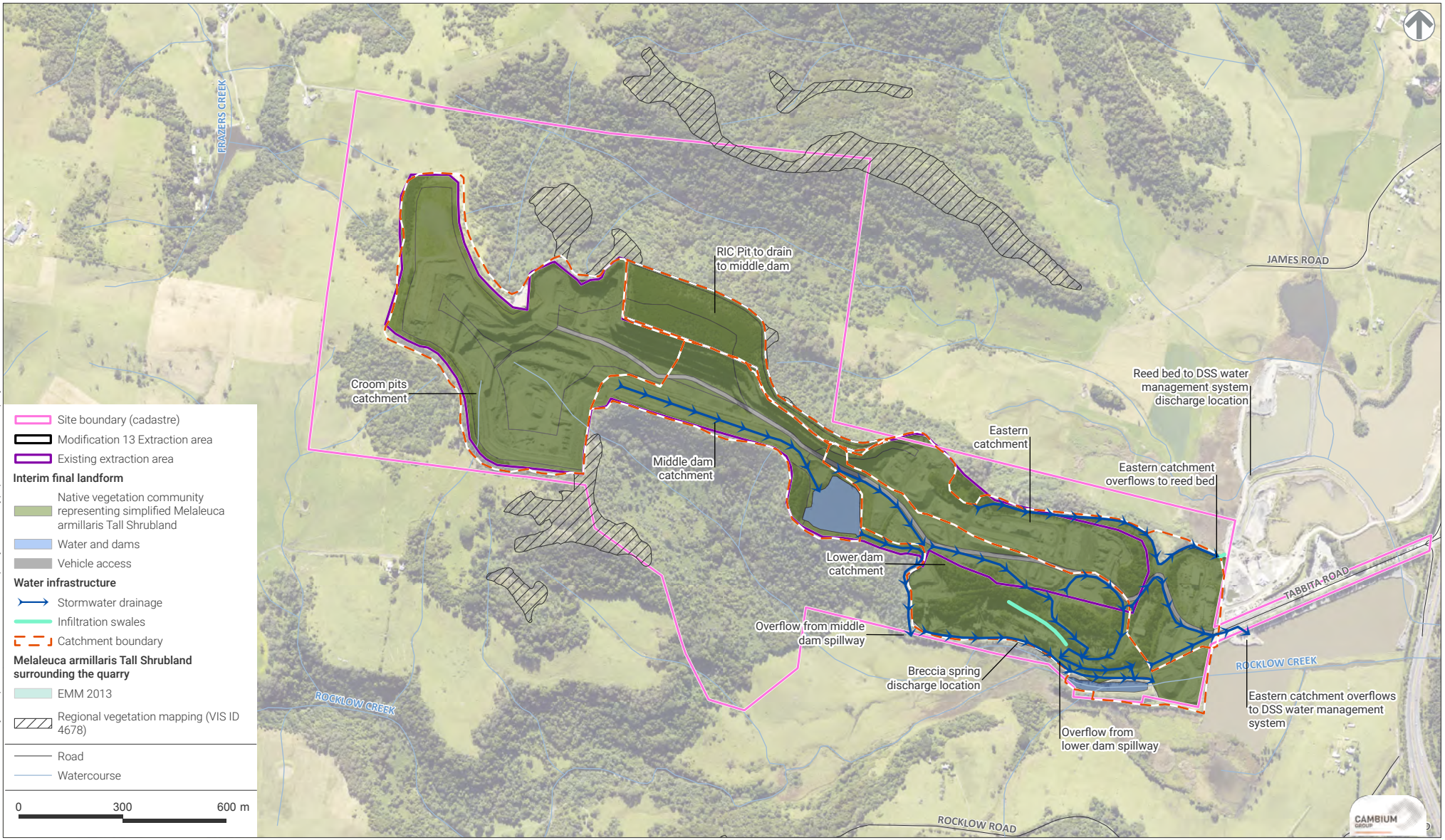
The Rehabilitation Strategy required by CoA 55 includes an interim conceptual final landform which aligns with the rehabilitation objectives (Table 1).

Figure 3 provides an interim conceptual final landform design to direct rehabilitation until the detailed final landform feasibility assessment is complete and included in an updated Rehabilitation Strategy. The interim conceptual final landform shows that, once operations have ceased:

- the final landform of the quarry will comprise of a series of elongate benches, sloping extraction floors and potentially an area of the original quarry backfilled with breccia- conglomerate;
- all building and infrastructure will be removed from the site;
- the quarry will be reshaped where necessary for growth media placement and revegetation; and
- the quarry floor will be vegetated.

Figure 3
Interim conceptual final landform and water infrastructure

DUNMORE HARD ROCK QUARRY
REHABILITATION MANAGEMENT PLAN



Source: LPI (2019), Aerometrex (2023), Boral (2022, 2024), EMM (2023), Cambium Group (2023).

Projected coordinate system GDA2020 MGA Zone 56 031256_F43_DQ_RMP_FL_250219_v01

4.3 Progressive rehabilitation

Progressive rehabilitation will take place prior to, during and after construction and quarrying, with the techniques and timing at each stage dependent on their practicability. Only small areas can be rehabilitated during quarrying operations to avoid conflict with future extraction and sterilisation of resource production potential. This includes areas such as final benches within the extraction areas and any disturbed areas beyond the final extraction area or development limits. Rehabilitation on the remaining areas will be undertaken following the completion of extraction activities.

Interim stabilisation and temporary vegetation strategies will be employed when areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated.

4.3.1 Rehabilitation domains and scheduling

To assist with rehabilitation planning, the major landforms resulting from quarrying have been grouped into rehabilitation management domains of similar rehabilitation risk profile and rehabilitation method.

Most areas of the quarry are currently operational and will remain active in the short-term. Accordingly, maintenance of existing rehabilitated areas will be the main focus for the next five years. Rehabilitation in other areas will commence once quarrying activities are complete and will progress in accordance with the rehabilitation phases outlined in Section 4.3.2.

Rehabilitation management domains are shown with the indicative quarry plan in Figure 4 and a summary of the domain landforms, rehabilitation status and scheduled works for the next 5 years is presented in Table 2.

Table 2 Rehabilitation domains and status

Rehabilitation Domain	Landform	Rehabilitation Status	Scheduled work (5 years)
Infrastructure Footprint	Buildings, roads, dams, pipelines, hard stands.	Operational - will be rehabilitated at end of mine life.	n/a
Water and Dams	Dams and watercourses.	Operational - will be rehabilitated progressively once not required for operational needs.	n/a
Final Void – Quarry Floor	Overburden spread as veneer and ripped to act as growth medium.	Operational -. will be rehabilitated progressively once not required for operational needs.	n/a
Final Void – Quarry Benches	Overburden placed as designed and ripped for growth medium.	Benches to be progressively rehabilitated as they become available.	Maintain rehabilitation on areas already rehabilitated. Prepare landform, rip where possible and place growth media, revegetate as shown in final landform.

Noise and Visual Bund	Bund on natural surface.	Complete around Croome west pit. To be constructed on RIC extension pit	Maintain with general land management practices. Construct and revegetate bund around RIC pit extension.

4.3.2 Rehabilitation phases and performance indicators

Rehabilitation of each domain will consist of rehabilitation phases to assist with detailed rehabilitation planning. These phases include:

- Decommissioning
- Landform Establishment
- Growth Medium Development
- Vegetation Establishment
- Ecosystem Development
- Relinquishment.

Performance indicators have been developed for rehabilitation domains and phases as presented in Table 3. These performance indicators will assist in guiding rehabilitation towards attainment of the rehabilitation objectives and completion criteria presented in Table 5.

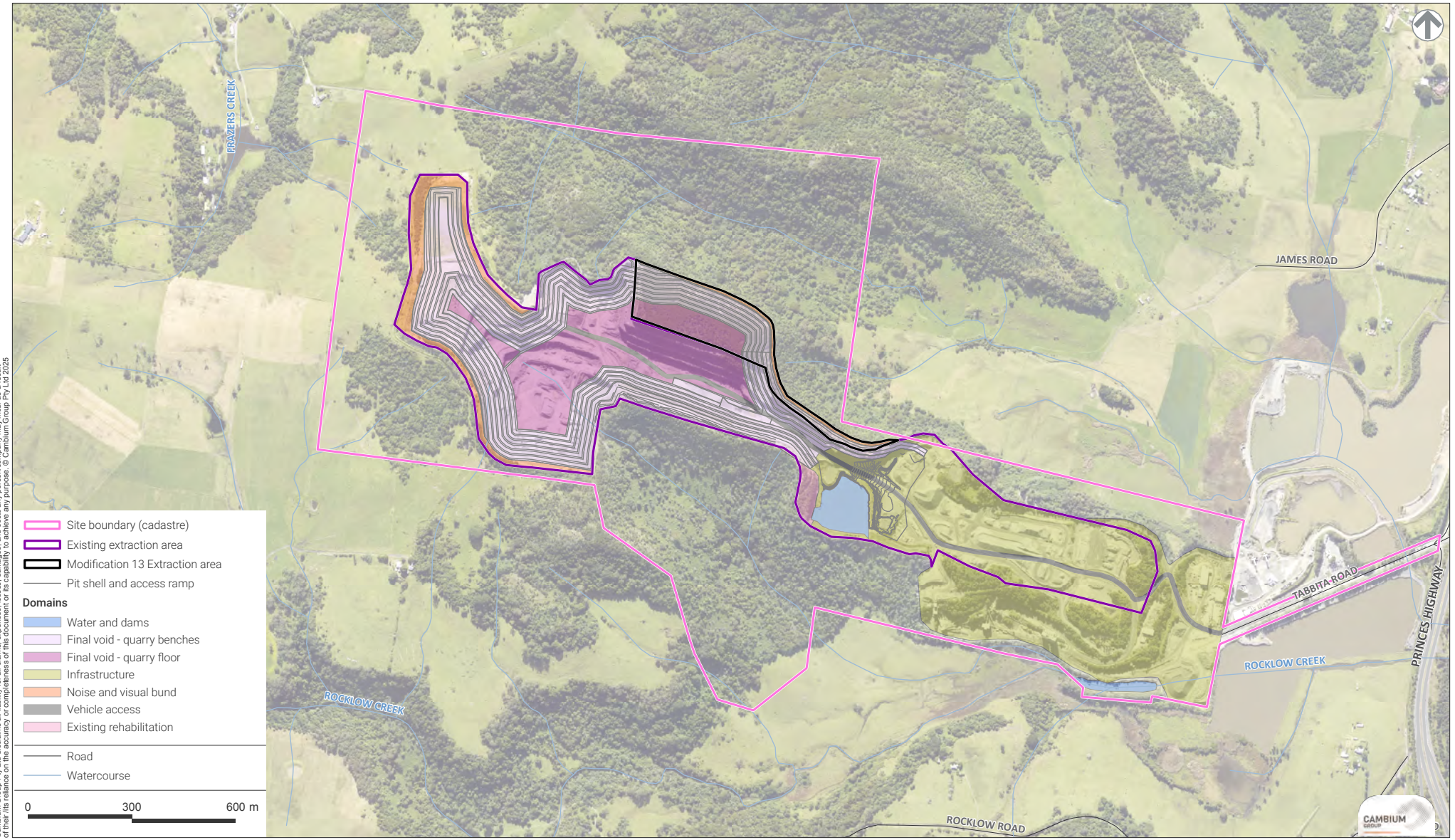
Table 3 Rehabilitation phases and performance indicators

Rehabilitation Domain	Rehabilitation phase performance indicators					
	Decommissioning	Landform Establishment	Growth Medium Development	Vegetation Establishment	Ecosystem Development	Relinquishment
Infrastructure Footprint	Unless required for post-mining use, infrastructure decommissioned and demolished	Safe, stable and non-polluting landscape.	Overburden ripped and growth media material placed over site	Native vegetation community representing simplified *Melaleuca armillaris* Tall Shrubland that are well connected to habitat corridors.	Key species present. Diverse native woodland community providing ecosystem value and visual screening.	Native vegetation community, promoting visual screening, landform stability, erosion control. fauna habitat and movement corridor.
Water and Dams	Drainage structures constructed and linked.	Landform stable and non-polluting No active erosion gullies.	Erosion of existing surface layers managed	Slopes of dams vegetated or rock lined. Concentrated tube stock planting around any discharge drainage lines.	Slopes of dams vegetated or rock lined. Native species persisting around any discharge drainage lines	Water retained on the site is appropriately licensed and fit for the intended post-quarrying landuse(s)
Final Void – Quarry Floor	N/A	Landform stable and no active erosion gullies. Non-polluting	Overburden ripped and growth media material placed over site Manage any areas of erosion	Native vegetation community representing simplified *Melaleuca armillaris* Tall Shrubland that are well connected to habitat corridors	Key species present Diverse native woodland community providing ecosystem value and visual screening.	Native vegetation community, promoting visual screening, landform stability, erosion control. fauna habitat and movement corridor.

Rehabilitation Domain	Rehabilitation phase performance indicators					
	Decommissioning	Landform Establishment	Growth Medium Development	Vegetation Establishment	Ecosystem Development	Relinquishment
Final Void – Quarry Benches	N/A	Safe, stable and non-polluting. Stable walls, slopes and benches.	Overburden ripped and growth media material placed over site	Native vegetation community representing simplified *Melaleuca armillaris* Tall Shrubland that are well connected to habitat corridors	Key species present Diverse native woodland community providing ecosystem value and visual screening.	Native vegetation community, promoting visual screening, landform stability, erosion control. fauna habitat and movement corridor.
Noise and Visual Bund	Construction complete.	Stable and no active erosion gullies. Non-polluting.	Erosion of any surface layers managed.	Native trees and shrubs present.	Native trees and shrubs providing visual amenity.	Native vegetation community, promoting visual screening, landform stability, erosion control. fauna habitat and movement corridor.

Figure 4
Indicative quarry plan and rehabilitation management domains

DUNMORE HARD ROCK QUARRY
REHABILITATION MANAGEMENT PLAN



Source: LPI (2019), Aerometrex (2023), Boral (2022, 2024, 2025), EMM (2023), Cambium Group (2023).

Projected coordinate system GDA2020 MGA Zone 56 031256_F3_DQ_RMP_RD_250219_v01

4.4 Plan of water management infrastructure

An interim plan of surface water infrastructure was included in the EIS for Modification 13 and is shown in Figure 4. CoA 58 requires a conceptual final landform study within 5 years of the commencement of the RIC extension. The conceptual final landform study requires an assessment of alternative means of discharging water (including the option of nil release of water) from the rehabilitated quarry, including conceptual designs. Upon completion of the conceptual final landform study the RS and the RMP will be updated to include the latest plan of water management infrastructure.

5 Rehabilitation methods

5.1 Vegetation removal

Vegetation has been removed and soil has been stripped in all areas, in order to mine the resource. The extraction method and procedures adopted at the quarry are standard for the quarrying industry where the emphasis is upon drilling and blasting to produce broken rock which is sufficiently small to enable it to be crushed into the required product sizes.

Vegetation is typically removed by a bulldozer pushing and windrowing the pushed-up trees and shrubs. This procedure is done in stages, as described in the Vegetation Clearing Protocol in the Flora and Fauna Management Plan. The vegetation removed to date has been windrowed on the margins of the extraction area and within the regeneration area west of the Croome Farm extraction area for use in the compensatory offset or rehabilitation works.

The topsoil recovered to date has been used to assist in the revegetation of the acoustic bund wall southwest of the Croome Farm extraction area and within the existing rehabilitated areas. Any excess topsoil from the extraction areas has been stored in the original Dunmore Quarry until it is needed for rehabilitation activities.

The treatment of vegetation and topsoil in the RIC pit extension area will be as described in the Vegetation Translocation Plan.

5.2 Overburden removal

Within the extraction areas, overburden is essentially weathered latite. Any overburden encountered is pushed up by a bulldozer and loaded into a haul truck then transported to the nominated overburden stockpile areas. All excess overburden from the approved extraction areas is stored on the floor of the original Dunmore Quarry. It is intended that all overburden is progressively returned to the completed extraction areas to provide a substrate for revegetation.

5.3 Surface preparation

Where practical ripping of the surface will occur prior to the placement of growth media. Ripping is important in assisting rapid tree growth through deep root growth and enhanced growth media -water infiltration. The ripping depth must be sufficient to penetrate any near-surface rock or clay. Thorough site preparation will be undertaken to ensure rapid establishment and growth of seedlings. All areas proposed for seeding will be deep ripped to an approximate depth of 400 – 500 mm. Where ripping on slopes is required, the ripping will be undertaken around the contour of the land at right angles to water flow.

5.4 Overburden as growth media

Final benches and pit floors will be treated through the placement of crushed overburden as growth media and revegetated as shown in the final landform. The overburden will be placed in a random manner to encourage the retention of rainfall and seepage.

5.5 Vegetation establishment

Existing *Melaleuca armillaris* Tall Shrubland on the site supports a low canopy dominated by *M.armillaris*, a shrub stratum is dominated by Lantana, Narrow-leaved Mint-bush (*Prostanthera linearis*), Illawarra Zieria (*Zieria granulata*), Prickly Beard-heath (*Leucopogon juniperinus*) and *Phyllanthus gasstroemii* and a groundcover dominated by Tussock Grass (*Poa labillardieri*), Weeping Grass (*Microlaena stipoides*), Golden Everlasting (*Xerochrysum bracteatum*), *Rytidosperma* spp. and Pale Fan-flower (*Scaevola albida*).

The benches will be revegetated with a simplified *Melaleuca armillaris* Tall Shrubland community. Simplified forms of the communities have been suggested as the ability to achieve a benchmark version of the communities through rehabilitation on shallow growth media is unknown and a full complement of species making up the community is likely to be unachievable. Alternative communities may be considered if conditions are not favourable for establishment of MaTS, such as Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (ILGW) and Illawarra Subtropical Rainforest in the Sydney Basin Bioregion (ISR). Native species that naturally colonise the rehabilitation areas, including those from these alternative communities, will be encouraged unless otherwise recommended by the monitoring program (section 7.3).

5.5.1 Direct Seeding Method

Direct seeding is preferred over tube stock planting as it enables a far greater success rate, limits the need for ongoing maintenance (e.g. watering) and is the most effective method in achieving a successful rehabilitation outcome. Not all native trees and shrubs are suited to direct seeding due to their innate germination requirements, therefore, it may be required to supplement with some tubestock to increase biodiversity. Hydromulching has been introduced at the site (Southern and Western areas of the noise and visual bund) as a technique for slope stabilization which includes a formula of fertilizer (25g/m2 native species N:P:K=8::4:1), Native seed mix (1.0g/m2), cellulose fibre (200g/m2) crop cover (8.0g/m2), Tackifier – binder (Tackifier 5g/m2) and water to create a suitable medium for spraying onto the soil surface providing a wood fibre interlocking mat that retains moisture for seed germination.

5.5.2 Species list

Table 4 provides an indicative list of species suitable for revegetation of *Melaleuca armillaris* Tall Shrubland, with indicative tubestock planting densities. Direct seeding may be used with the aim of establishing similar densities. The species listed are:

- associated with *Melaleuca armillaris* Tall Shrubland;
- expected to be available as local provenance through seed collection and propagation or tubestock; and
- likely to have good survival rates in the translocation areas under the proposed site preparation and maintenance regime.

Where the species cannot be sourced, they may be substituted for other local species as identified in the species lists for *Melaleuca armillaris* Tall Shrubland.

Horticultural varieties and cultivars are not acceptable under any circumstances.

Table 4 Recommended indicative species list for revegetation planting and seed collection

Botanical Name	Common Name	Indicative Spacing
Acacia maidenii	Maiden's Wattle	1 per 5 m^2
Alphitonia excelsa	Red Ash	
Androcalva fraseri	Brown Kurrajong	1 per 5 m^2
Celastrus australis	Staff Climber	1 per 5m^2

Commelina cyanea	Scurvy Weed	
Dodonaea viscosa subsp. angustifolia	Sticky Hop Bush	1 per 10 m^2
Glycine clandestina	Glycine	2 per 1 m^2
Glycine tabacina	Love Creeper	2 per 1 m^2
Grona varians	Slender Tick-trefoil	2 per 1 m^2
Hibiscus heterophyllus subsp. heterophyllus	Native Rosella	1 per 5 m^2
Indigofera australis	Duwabili	1 per 5 m^2
Melaleuca armillaris	Bracelet Honey-myrtle	1 per 5 m^2
Prostanthera linearis	Narrow-leaved Mintbush	1 per 5 m^2
Zieria granulata	Illawarra Zieria	1 per 5 m^2
Themeda triandra	Kangaroo Grass	2 per 5 m^2
Poa labillardierei var. labillardierei	Common Tussock-grass	2 per 5 m^2
Microlaena stipoides	Weeping Grass	2 per 5 m^2
Sporobolus creber	Slender Rat's Tail Grass	2 per 5 m^2
Rytidosperma longifolium	Long-leaved Wallaby Grass	2 per 5 m^2

5.6 Conceptual infrastructure decommissioning plan

This section summarises the key aspects related to decommissioning and closure of the site when all hard rock resources have been exhausted. It assumes that all buildings and other infrastructure are demolished and removed from the site despite the potential for them being used after quarrying (subject to the landholders requirements). It is considered likely that at least some aspects of the existing infrastructure will be used post quarrying, however they are not able to be identified at this time.

All surface infrastructure including the office buildings, workshops, parking areas, crushing, screening and wash plants, and product storage areas will be demolished and removed, and the areas containing this infrastructure recontoured. The access road will also be removed. Where possible, assets may be transferred or sold to other operations.

Any remaining items will be demolished, removed and transported from the site as required. All recoverable scrap steel will be sold and recycled, with the remaining non-recycable wastes being taken to a licenced

landfill. Prior to disposal, all wastes will be assessed in accordance with *Waste Classification Guidelines* (EPA, 2014).

All remaining areas will then be reshaped and treated as described in earlier in this section.

All haul roads will also be removed and water management controls either removed or modified to assist in stabilisation of the final landform and to capture any sediment runoff from the rehabilitated areas.

Decommissioning of the processing plant is not envisaged at the completion of the extraction process as it is likely that other hard rock resources would be processed at the plant.

6 Supporting Actions

This section details the supporting actions that are required to ensure the success of the revegetation and rehabilitation works at the site.

6.1 Erosion and Sediment Control

Sediment and erosion control measures will be implemented where necessary in accordance with the Water Management Plan until rehabilitation is complete.

6.2 Weed and Feral Animal Control

Weed and feral animal control measures will be implemented as required in accordance with the Flora and Fauna Management Plan and based on annual rapid visual assessments until rehabilitation is complete.

6.3 Safety

At quarry closure, one of the main priorities for the void will be to render it safe in terms of access by humans, livestock and wildlife. The following completion criteria and performance indicators will be considered at the time of closure to ensure that the void is left in a safe manner. These include:

- all high walls are to be left geotechnically stable.
- a barrier at a safe distance from the perimeter of the void to prevent human access will be constructed. This is to provide an engineered barrier between the pit and the surrounding area.
- suitable signs, clearly stating the risk to public safety and prohibiting public access will be erected at 50 m intervals outside the safety fence.
- surface runoff from land surrounding the void will be diverted from entering the void so as to prevent the instability of the walls.

6.4 Fire Management

Management of fire is an important and complex issue. Management must aim to achieve long term conservation of natural communities balanced against the ongoing protection of life and property within and adjacent land. Fire regimes are a major determinant of the distribution and abundance of flora and fauna. They also affect nutrient cycles, erosion patterns and hydrological regimes. Fire regimes are the result of the dynamic interaction of human, physical, biological, spatial and temporal factors (NPWS 2001).

Any proposed fire management across the conserved and rehabilitated sites will require close consultation with the Rural Fire Service (RFS)

The following controls may be implemented to control the risk associated with bushfire:

- fuel reduction actions, including grazing, mowing, slashing, ploughing, flailing and manual removal as required to reduce fuel loads and fire risk in peak seasons;
- establishment and maintenance of fire breaks, including around critical infrastructure; and
- periodic review, testing and training of relevant personnel in the site Emergency Response Procedure

A Bushfire Management Plan is in place (Boral 2024) and will be referenced for further details as necessary.

7 Rehabilitation objectives, performance indicators, monitoring and contingency planning

7.1 Rehabilitation objectives

Rehabilitation aims to maintain the geomorphic stability of the pit walls and benches and establish self-sustaining native vegetation consistent with the conceptual final landform and land uses for the site and in accordance with the rehabilitation objectives as outlined in CoA 52 (Table 1). As discussed throughout this RMP, the objectives may be refined throughout the life of the quarry and in the Final Landform Feasibility Assessment.

Rehabilitation objectives are provided in Table 5 along with the associated performance indicators and completion criteria (Section 7.2), monitoring methods (Section 7.3) and contingencies/remedial actions (Section 7.4). These objectives apply to the entire site, including all landforms constructed under either this consent or previous consents. However, the Applicant is not required to undertake any additional earthmoving works on landforms that have been approved and constructed under previous consents, except where those earthworks are required for the establishment of a stable, non-polluting, and free-draining landform

7.2 Performance indicators and completion criteria

Completion criteria are derived from rehabilitation objectives, consist of agreed values or standards that indicate if rehabilitated land is resilient and sustainable, and considered suitable for relinquishment sign-off. At a minimum, completion criteria address landscape parameters such as stability, growth media, vegetation establishment, and potential for off-site impacts and suitability for the agreed post-mining land-use

Specific and measurable performance indicators are extrapolated from the general rehabilitation objectives and completion criteria to assist with progress assessments and identify the need for remedial action.

The completion criteria and performance indicators that relate to the rehabilitation objectives are provided in Table 5.

Table 5 General rehabilitation objectives and completion criteria

Feature	Objectives	Completion criteria	Performance indicator	Monitoring method*	Contingencies / remedial action
All areas of the site affected by the development	Safe and non-polluting	Landform complies with the Rehabilitation Strategy and Rehabilitation management Plan. The landform is structurally stable	Construction as designed. Rehabilitation measures implemented. Surface water management in place. Stability assessed through geotechnical testing/reporting (e.g., shear strength, bearing capacity, slip failure cracking).	Routine inspection RVA RVA and report on mine closure	Risk assesses matters identified during monitoring. Consider appropriate controls. Follow recommendations in reports. Install stabilization measures like soil nails, anchors, or retaining walls if needed.
	Hydraulically and geotechnically stable	The landform remains stable under both hydrological and geotechnical conditions.	Ensure that both soil strength and hydraulic systems are designed to withstand potential flood or water load conditions. Construction as designed. Rehabilitation measures implemented. Surface water management in place. Stability assessed through geotechnical testing/reporting (e.g., shear strength, bearing capacity, slip failure cracking) No signs of excessive settlement, slippage, or instability due to hydraulic forces (e.g., water flow).	Routine inspection RVA RVA and report on mine closure	Modify slope angles, install retaining structures, or improve drainage to manage water-related forces. Re-contour. Risk assesses matters identified during monitoring. Consider appropriate controls such as re-capping. Follow recommendations in report.

Feature	Objectives	Completion criteria	Performance indicator	Monitoring method*	Contingencies / remedial action
	Fit for the intended post-quarrying land use(s)	Vegetation established and rehabilitated areas stable. Areas free of significant weed or feral animal problems.	The Structure score (derived from the BAM calculator) is greater than 30% of the benchmark values. The Function score (derived from the BAM calculator) is greater than 30% of the benchmark values. The Vegetation Integrity score (derived from the BAM calculator) is greater than 30% of the benchmark values. Exotic plant cover is <20%. The total cover of high threat exotic species (HTEs) is <5%. Feral animal activity is minimal and not likely to impact rehabilitation success.	RVA BAM	Depending on the age of rehabilitation and professional recommendations from the ecological report: • install further tubestock • establish native seed • increase weed and feral animal management in accordance with the Flora and Fauna Management Plan. Continue to monitor in accordance with the Monitoring Program to ensure that the composition score is on a trajectory to be met.
	Establish the final landform and post-quarrying land use/s as soon as practicable after cessation of quarrying operations	Vegetation established and rehabilitated areas stable. Rehabilitation undertaken progressively in areas as they become available following completion of excavation.	The Structure score (derived from the BAM calculator) is greater than 30% of the benchmark values. The Function score (derived from the BAM calculator) is greater than 30% of the benchmark values.	BAM	Depending on the age of rehabilitation and professional recommendations from the ecological report: • install further tubestock • establish native seed • increase weed management in accordance with the Flora and Fauna Management Plan.

Feature	Objectives	Completion criteria	Performance indicator	Monitoring method*	Contingencies / remedial action
			The Vegetation Integrity score (derived from the BAM calculator) is greater than 30% of the benchmark values. Exotic plant cover is <20%. The total cover of high threat exotic species (HTEs) is <5%.		Continue to monitor in accordance with the Monitoring Program to ensure that the composition score is on a trajectory to be met.
	Minimise post-quarrying environmental impacts	No uncontrolled surface runoff or soil erosion that is unstable, degrading and/or comprises end land use objectives.	Water management structures (sediment dams, channels, contour banks) are not actively eroding &/or scouring.	RVA	Undertake remedial actions such as amelioration, revegetation or alternative scour protection. For significant failures or repeat minor failures conduct review of design criteria and construction standards. Continue to monitor in accordance with the Monitoring Program to ensure no active erosion or scouring.
		Areas free of significant weed or feral animal problems.	Exotic plant cover is <20%. The total cover of high threat exotic species (HTEs) is <5%. Feral animal activity is minimal and not likely to impact rehabilitation success	RVA BAM	Increase weed and feral animal management in accordance with the Flora and Fauna Management Plan.

Feature	Objectives	Completion criteria	Performance indicator	Monitoring method*	Contingencies / remedial action
	Integrated with surrounding natural landforms and other quarry rehabilitated landforms, to the greatest extent practicable	Native vegetation community established and rehabilitated areas stable.	The Structure score (derived from the BAM calculator) is greater than 30% of the benchmark values. The Function score (derived from the BAM calculator) is greater than 30% of the benchmark values. The Vegetation Integrity score (derived from the BAM calculator) is greater than 30% of the benchmark values. Exotic plant cover is <20%. The total cover of high threat exotic species (HTEs) is <5%.	BAM	Depending on the age of rehabilitation and professional recommendations from the ecological report: • install further tubestock • establish native seed • increase weed management in accordance with the Flora and Fauna Management Plan. Continue to monitor in accordance with the Monitoring Program to ensure that the composition score is on a trajectory to be met.
	Minimise visual impacts when viewed from surrounding land to the greatest extent practicable	Noise/visual bund and native vegetation around the boundary maintained.	Existing native vegetation on noise/visual bund is resilient and not showing signs of degradation such as canopy dieback or weed infestation.	RVA	• install further tubestock • establish native seed • increase weed and feral animal management in accordance with the Flora and Fauna Management Plan.

Feature	Objectives	Completion criteria	Performance indicator	Monitoring method*	Contingencies / remedial action
	Ensure safety of native fauna and stock	Native vegetation community established and rehabilitated areas stable. Areas free of significant weed or feral animal problems	The Structure score (derived from the BAM calculator) is greater than 30% of the benchmark values. The Function score (derived from the BAM calculator) is greater than 30% of the benchmark values. The Vegetation Integrity score (derived from the BAM calculator) is greater than 30% of the benchmark values. Exotic plant cover is <20%. The total cover of high threat exotic species (HTEs) is <5%.	BAM	Depending on the age of rehabilitation and professional recommendations from the ecological report: • install further tubestock • establish native seed • increase weed and feral animal management in accordance with the Flora and Fauna Management Plan. Continue to monitor in accordance with the Monitoring Program to ensure that the composition score is on a trajectory to be met.
Infrastructure	All infrastructure that is not to be used as part of the final land use is removed.	No Infrastructure remaining (unless required for future land use). Demolition to Australian Standard	Percentage of infrastructure removed Compliance with safety and environmental standards. Timely completion of the removal process (e.g., by project milestone dates). Minimal disruption to surrounding areas.	RVA	Increase resources for removal if progress is slow. Adjust removal method if structural obstacles are encountered Reallocate labor or equipment for faster removal. Hire additional contractors to address delays

Feature	Objectives	Completion criteria	Performance indicator	Monitoring method*	Contingencies / remedial action
	All infrastructure that is to remain as part of the final land use is compatible with the intended post-quarrying land use/s, is safe and does not pose any hazard to the community.	Remaining infrastructure is assessed for compatibility with the intended post-quarrying land use Landform design to consider stability and potential pollution risk. Construction as designed. Necessary repairs or upgrades are completed to ensure safety. Infrastructure does not pose a risk to surrounding communities.	Compliance with safety, environmental, and land use regulations Community feedback on safety and compatibility No safety incidents related to remaining infrastructure	Feasibility study RVA	Modify or remove any infrastructure found to pose a hazard or be incompatible. If infrastructure is unsafe, initiate immediate repairs or demolition Conduct additional safety assessments and implement corrective actions if necessary
Water	Water retained on the site is appropriately licensed and fit for the intended post-quarrying land use/s.	Ongoing water take by the final landform via interception, storage or diversion is quantified and complies with relevant approvals and licences under the Water Management Act 2000. Appropriate water licences are held.	Post quarrying water take is quantified by water modelling. Compliance with water license conditions	Reviewed by 3 yearly independent audit as per CoA schedule 5, 10 (c).	As recommended by audit

Feature	Objectives	Completion criteria	Performance indicator	Monitoring method*	Contingencies / remedial action
	Groundwater quality is consistent with, or better than the pre-disturbance water quality. Groundwater bores are decommissioned post quarrying.	Groundwater quality is meeting objectives in the Site Water Management Plan. Decommissioning of groundwater boreholes is in accordance with the "Minimum Construction Requirements for Water Bores in Australia (2020)".	Groundwater quality is meeting objectives in the Site Water Management Plan. Appropriate notifications of decommissioning. Boreholes are sealed to protect aquifers.	Groundwater monitoring as per the Site Water Management Plan	As recommended in accordance with the Site Water Management Plan.
Final void	Optimise the size and depth of the final void to ensure the final landform is stable and non-polluting.	Final void dimensions (size and depth) meet design specifications. Final void has been properly contoured/benched to promote slope stability No polluted water or chemical leachate risk from the void. The final void is designed to be a sink or to flow through the local groundwater system (final design options will be considered in the detailed final landform feasibility assessment, see section 4.2) and	Adherence to engineering and environmental design standards. Stability of the final landform (e.g., slope angles, erosion risks). Groundwater and surface water quality monitoring results meet legislative standards Final void design supported by post mining groundwater model.Successful completion of geotechnical and environmental stability assessments	Routine inspection RVA RVA and report on mine closure	Reassess design parameters if the final void does not meet specifications Implement additional slope stabilisation techniques (e.g., material nailing, retaining walls). Modify void drainage or treatment systems if pollution risks are identified Update design to align with regulatory changes or unforeseen environmental concerns Undertake further stabilization actions, such as reinforcing slopes or adding drainage

Feature	Objectives	Completion criteria	Performance indicator	Monitoring method*	Contingencies / remedial action
		will be supported by a post-mining groundwater model.. Final landform is stable under predicted weather and seismic conditions			
	Minimise to the greatest extent practicable: - the drainage catchment and groundwater inflows; - any high wall instability risk; and - the risk of flood interaction.	Drainage catchment and groundwater inflows are minimized as per design parameters. quarry wall stability has been assessed and mitigated for risk Flood risk interaction is minimized through proper landform design	Monitoring of groundwater inflow rates and drainage catchment size Reduction in high wall instability incidents and associated risks. Success of flood mitigation measures (e.g. runoff management)		Reconfigure drainage systems if inflow is higher than expected or design parameters are exceeded Reinforce high walls or install stabilisation measures (e.g., retaining walls, rock bolting Adjust landform to improve water diversion or upgrade flood management systems
	Maximise potential for beneficial reuse, where practicable.	Final void reuse considered and described Final Landform Feasibility Assessment	Measures described in the Final Landform Feasibility Assessment are implemented	Feasibility study	To be considered once the Final Landform Feasibility Assessment is complete
Community	Ensure public safety	Landforms are designed to ensure public safety in addition to	Design standards achieved. Risks adequately controlled.	Design Standards and	Implement risk controls

Feature	Objectives	Completion criteria	Performance indicator	Monitoring method*	Contingencies / remedial action
		the measures described in the rehabilitation domains. Public safety is mitigated and controlled to acceptable levels in site risk assessments.		Risk Assessments	
	Ensure the risk of bushfire is similar to or less than the pre-quarrying environment	Bushfire management plan in place for quarry and adjacent Boral managed land and bushfire management actions implemented	Bushfire management actions implemented and achieving bushfire management objectives	RVA	Implement further controls as required.
	Minimise adverse socioeconomic effects associated with quarry closure	Socioeconomic effects described and minimised in the Final Landform Feasibility Assessment	Socioeconomic effects associated with quarry closure not adequately considered in the feasibility study.	Feasibility study	Update feasibility study to better consider socioeconomic effects. Implement findings of feasibility study.

* Details provided in Section 7.3

7.3 Monitoring program

This monitoring program has been designed to independently audit and report on progress of rehabilitation against the completion criteria and the effectiveness of the measures implemented to achieve the rehabilitation objectives. The monitoring program includes various data collection techniques to monitor the vegetation development towards completion criteria, and specifies remedial actions to allow for the adaptive management in implementing this Plan.

Monitoring will comprise both visual assessment and quantitative methods. These methods are described below with further detail provided in Table 6. Monitoring will cease 5 years post achievement of completion criteria.

7.3.1 Visual monitoring

Photo point monitoring and Rapid Visual Assessments (RVA) will be undertaken on an annual basis, commencing once areas have been reshaped, benched and topsoiled and become available for rehabilitation. These methods provide a framework for regular site inspection to observe and document rehabilitation progress and emerging threats.

7.3.2 Biodiversity Assessment Method

Once vegetation is establishing, Biodiversity Assessment Method (BAM) plots will be established to track development of the vegetation towards the *Melaleuca armillaris* Tall Shrubland community and to monitor weeds. BAM plot data will be assessed against reference data, which will be derived from either:

- a minimum of three BAM plots within *Melaleuca armillaris* Tall Shrubland within the adjacent Stewardship Sites (assuming Stewardship Sites have been established and monitoring commenced); or
- data collected at the disturbance site as part of the Biodiversity Development Assessment Report (BDAR) prepared for Modification 13 (EMM, 2023).

7.3.3 Monitoring plots

The minimum number of plots per rehabilitation area will be in accordance with BAM:

- <2 ha = 1 plot;
- >2 – 5 ha = 2 plots;
- >5 – 20 ha = 3 plots;
- >20 – 50 ha = 4 plots; and
- >50 – 100 ha = 5 plots

Co-ordinates of the plots will be recorded and the plots will be permanently marked as soon as practicable (so as not to interfere with vehicle/machinery access during quarrying operations). The plots will used for both photo point monitoring and BAM monitoring.

7.3.4 Reporting

A report outlining (as a minimum) the methods and results of the monitoring and an assessment of performance must be submitted to Boral within six months of completion of the field surveys. This will allow for adaptive management and implementation of remedial actions in accordance with Table 5 to improve biodiversity outcomes.

Results of the Rapid Visual Assessment and the Ecological Assessment will be reported in the subsequent Annual Review. Actions and recommendations from these reports will be captured in the applicable Boral system.

Table 6 Monitoring methods

Method	Details	Purpose	Frequency and timing[1]
Photo point monitoring	Photos will be captured at each photo point in five directions (north, east, south, west and ground). Photo points will be permanently marked.	To provide a visual record of: • changes to ground cover and vegetation structure; and • emerging threats such as erosion or weed infestations.	Annual (Spring) From commencement of rehabilitation
Rapid Visual Assessment	All areas with translocated material will be traversed by foot or vehicle and assessed for regeneration and disturbance including (but not limited to): • Regeneration: – broad patterns in the distribution of natural recruitment and planting survival; – presence of threatened species; – general health of vegetation; – soil moisture and the need for irrigation; and – condition of plant guards and stakes (if used). • Disturbance: – evidence of stock or native animal grazing; – presence feral animal species; – fence integrity; – fuel loads and fire disturbance; – evidence of nearby land management activities (i.e. chemical treatments, fencing, earthworks);	Rapid assessment to: • provide a formal framework to broadly inspect the rehabilitation areas on a regular basis and to document, respond and review rehabilitation and emerging threats; • complement quantitative monitoring methods; • identify gaps in natural regeneration or survival to identify priority locations/species for additional works; • identify emerging and ongoing threats to inform management actions; • identify risks to vegetation establishment due to weed densities allowing fast response to emerging infestations; and	Annual (Spring) From commencement of rehabilitation

	– evidence of unauthorised vehicle access; – evidence of rubbish dumping; and – surface stability and erosion issues. • Weeds: – Identify and map Weeds of National Significance and priority weeds; – Identify and map exotic pasture grasses and forms that are likely to limit rehabilitation success; and – make weed management recommendations for future management. Any observations relating to regeneration success/failure or disturbance will be documented including: • details of the observation; • photo; • co-ordinates; and • recommended remedial action.	• capture any threatened species records within the rehabilitation areas and submit to the NSW Bionet Atlas.	
Biodiversity Assessment Method (BAM)	The BAM is described in DPIE (2020) and includes survey of a range of attributes within the 20x50 m plots. The attributes collected are then entered into the BAM calculator to generate scores for composition, structure, function and vegetation integrity. The scores are based on comparison with standard benchmarks for the relevant plant community type (PCT). Attributes measured by the BAM include: • plant species richness in each growth form; • native vegetation cover in each growth form; • fallen logs; • leaf litter cover;	To assess development of the established vegetation at the rehabilitation areas relative to the reference condition. The outcomes will assist management identify the most appropriate species and growth forms to plant. Capture any threatened species records within the rehabilitation areas and submit to the NSW Bionet Atlas.	Annual (Spring) Commencing once vegetation is establishing.

	• high threat weed exotic cover; and • stem size classes (canopy regeneration).		

7.4 Contingency planning

Contingency planning is required to manage any unpredicted impacts and their consequences, to ensure that ongoing impacts reduce to levels below relevant performance criteria as quickly as possible and to facilitate an adaptive management approach. Contingency planning includes the monitoring program and the remedial actions shown in Table 5. Remedial actions will be implemented if monitoring indicates that the measures implemented to achieve the completion criteria are not effective and/or if progress against the completion criteria is not consistent with this Rehabilitation Management Plan or the Rehabilitation Strategy objectives are not achieved.

8 Reporting and Review

8.1 Regulatory Compliance

All Boral sites will be aware of regulatory biodiversity commitments to ensure the necessary controls and monitoring is carried out for the purpose of verifying compliance.

Regulatory documents such as the following will be periodically reviewed for site compliance with biodiversity and rehabilitation management obligations:

- environmental licences
- planning consents
- all actions identified in the management plan will be included in the site's Environmental Permit Planner to manage compliance to these commitments.

8.2 Reporting

8.2.1 Annual Reporting

In accordance with the requirements of Schedule 5 CoA 9, by the end of September each year, Boral will prepare and submit a review of the environmental performance of the project to the satisfaction of the Secretary of the Department of Planning, Housing and Infrastructure (DPHI).

The site environmental officer is responsible for managing the environmental reporting program and arranging specialist consultants to prepare reports, as required. The activities and performance outcomes of the RMP will be presented in the Annual Review.

This will include detailed assessment of monitoring results collected over the course of the RMP, an evaluation of any trends occurring across the site, a summary of any incidents or non-conformances with licences/criteria and recommendations for management actions.

As required by Schedule 5 CoA 9. This review must:

"(a) describe the development (including rehabilitation) that was carried out in the previous financial year, and the development that is proposed to be carried out over the current financial year;

(b) include a comprehensive review of the monitoring results and complaints records of the development over the previous financial year, which includes a comparison of these results against the:

- *relevant statutory requirements, limits or performance measures/criteria;*
- *requirements of any plan or program required under this consent;*
- *monitoring results of previous years; and*
- *relevant predictions in the documents listed in condition 2 of Schedule 3;*

(c) identify any non-compliance over the last financial year, and describe what actions were (or are being) taken to ensure compliance;

(d) identify any trends in the monitoring data over the life of the development;

(e) identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and

(f) describe what measures will be implemented over the current financial year to improve the environmental performance of the development.

The Applicant must ensure that copies of the Annual Review are submitted to Council and are available to the Community Consultative Committee (see condition 6 of Schedule 5) and any interested person upon request."

8.2.2 Adaptive Management

The Applicant will implement an adaptive management approach to identify, assess, and manage development-related risks to ensure compliance with all criteria and performance measures specified in Schedule 4 of the Development Consent. The following actions will be taken:

- Monitoring, inspections, audits, and performance reviews will be undertaken to identify any actual or potential exceedances
- In the event that an exceedance occurs, the Applicant will promptly investigate the cause, implement all reasonable and feasible measures to cease the exceedance and prevent recurrence, and assess appropriate remediation options where relevant.
- A report outlining the exceedance, investigation findings, corrective actions, remediation options, and preferred course of action will be submitted to the Department as required.
- Any remediation measures directed by the Planning Secretary will be implemented within the specified timeframe and monitored to confirm their effectiveness, ensuring ongoing compliance with the conditions of consent.

8.2.3 Incident Reporting

Boral has in place a procedure for the management and reporting of incidents. Once it is identified that an incident has occurred, the following actions will be taken:

- operations to be stopped until appropriate control systems can be implemented;
- an investigation will be undertaken to establish the root cause;
- subject to the findings of the investigation actions will be taken to repair, replace or change the identified cause of the incident. These actions will be completed by appropriately qualified personnel or consultants;
- the identified cause of the incident and the selected response will be formally documented in an incident response report;
- training will be undertaken, if changes are required to procedures or operations; and
- DPHI, EPA and if appropriate BCD and BCT will be notified of the incident/impact/potential impact once an incident has been identified.

In the event of an incident, Boral will ensure that the Department and any other relevant agencies are notified immediately upon becoming aware of the incident. Notifications will be submitted in writing via the Major Projects Website and will clearly identify the development, including the development application number and project name. The notification will also provide a concise but comprehensive description of the

incident, including its location, nature, and any relevant circumstances, to enable appropriate regulatory oversight and response.

8.2.4 Operational Criteria Non-compliance response

Non-compliances may result due to rehabilitation activities not being undertaken or appropriate procedures not being followed as outlined in the RMP.

Initial notification of a noncompliance and reporting will be conducted in accordance with Schedule 5 CoA 7A, whereby:

"*Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing via the Major Projects Website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.*"

Should a noncompliance be identified the following actions will be taken:

- an investigation will be undertaken to establish the root cause of the non-compliance;
- subject to the findings of the investigation, actions will be taken to minimise any reoccurrence of the / non-compliance. Remedial actions, where possible will be undertaken;
- the identified cause of the impact and the selected response will be formally documented in an incident response report; and
- DPHI, EPA and if appropriate BCD will be notified of the non-compliance as per Schedule 5 CoA 7A.

8.2.5 Community complaint response

An Environmental hotline is provided to the local community to make contact directly with the Environment and Stakeholder Advisor (ESA) of the Dunmore Quarry. This hotline is advised to the community via a monthly newsletter and on the website.

In the first instance, after receiving a complaint, the ESA will attend the location of the complaint to discuss their concerns. Investigations into the complaint will be undertaken and findings reported to the complainant.

In terms of complaints, Boral will record details of all complaints received in the organisation's Safety and Environment System and ensure that a response is provided to the complainant as soon as practicable.

Further, Boral will make available a report on complaints received to the Community Consultative Committee (CCC) and to relevant government agencies and the Councils upon request and include a summary in the Annual Review. The report shall include the number of complaints that have been resolved with or without mediation. A complaints register is also available on the Dunmore Hardrock Quarry website.

8.2.6 Public Reporting

Boral will ensure that the local community is kept informed by way of periodic newsletters, leaflets, local newspaper advertisements and the Quarry web page of the progress of the Quarry, including details of the environmental hotline. The Boral newsletter will provide updates on operations and provides details of the environmental hotline.

Community Consultative Committee meetings are used to inform the committee of the general progress of rehabilitation works. These meetings are held with community and local government representatives. Minutes of the meetings are provided on the Boral Dunmore Hardrock Quarry website.

The Boral Dunmore Hardrock Quarry website is reviewed at least annually and updated with minutes, and other supporting documents required as per Schedule 5 CoA 12.

As per Schedule 5 CoA 12, information will be made available to stakeholders so that they can understand the environmental impacts of the development. The documents below will be available via the Boral Dunmore Hardrock Quarry website:

- the documents listed in condition 2 of Schedule 3;
- current statutory approvals for the development;
- approved strategies, plans or programs required under the conditions of this consent;
- a comprehensive summary of the monitoring results of the development, reported in accordance
- with the specifications in any conditions of this consent, or any approved plans and programs;
- a complaints register, updated quarterly;
- the Annual Reviews (over the last 5 years);
- any independent environmental audit, and the Applicant's response to the recommendations in any audit; and
- any other matter required by the Planning Secretary.

8.3 Auditing

Boral has an established corporate and divisional risk-based audit program that periodically assess operational sites for conformance with HSEQMS requirements.

8.3.1 Independent Environmental Audit

Every 3 years Boral will commission and pay the full cost of an Independent Environmental Audit of the project. The adequacy of this RMP will be included in the Environmental Audit. An Independent Audit of the Quarry was conducted in 2024 with the next Audit commenced at the end of 2027.

The audit must:

a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Planning Secretary;
b) include consultation with the relevant agencies and the CCC;
c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent and any relevant EPL and/or Water Licences (including any assessment, plan or program required under these approvals);
d) review the adequacy of any approved strategies, plans or programs required under the abovementioned approvals;
e) recommend appropriate measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under the abovementioned approvals; and
f) be conducted and reported to the satisfaction of the Planning Secretary.

Within 12 weeks of commencing this audit, or as otherwise agreed by the Planning Secretary, the Applicant must submit a copy of the audit report to the Planning Secretary and any other NSW agency that requests it, together with its response to any recommendations contained in the audit report.

8.4 Review of RMP

The RMP will be reviewed annually by Boral Environment and Stakeholder Advisor to determine the efficacy of the RMP and ensure it continues to fulfil its intended purpose. This will allow for and promote adaptive management through progressive stages of future quarry operations.

Updates will be undertaken every 5 years to include any revisions to the rehabilitation of the site identified by updates to the Rehabilitation Strategy or as a result of any of the following:

- major changes in site conditions or work methods;
- as a result of changes in environmental legislation applicable and relevant to the quarry operations; or
- in response to the requirements of Schedule 5 CoA 4 which requires a review of the RMP within 3 months of an incident report, an annual review, an audit report, or a modification to the consent.

9 References

Boral (2024) Dunmore Quarry Bushfire Management Plan.

EMM consulting (2019) Dunmore Hard Rock Quarry – Rehabilitation Management Plan. Prepared for Boral.

EMM consulting (2023) Modification Report – Dunmore Hard Rock Quarry Modification 13. Prepared for Boral Resources (NSW) Pty Limited.

EPA (2014) Waste Classification Guidelines. Sydney, NSW.

APPENDIX A: ENDORSEMENT OF AUTHORS

Department of Planning, Housing & Infrastructure

Our ref: (DA470-11-2003-PA-34)

Matt Bray
Environmental and Stakeholder Advisor
Dunmore Operations
PO Box 6041,
North Ryde NSW 2113

22/07/2024

Subject: Appointment of suitably qualified persons to prepare rehabilitation documents

Dear Mr Bray

I refer to your nomination of Dr Emilie Mascarenhas and Mr Mark Nolan of Cambium Group to prepare the Rehabilitation Strategy and the Rehabilitation Management Plan in accordance with conditions 55 and 61 of Schedule 4 of the Dunmore Quarry development consent (DA470-11-2003).

I have reviewed the Curriculum Vitae of both Dr Mascarenhas and Mr Nolan and I approve their appointment to prepare the above plans for the Dunmore Quarry (DA 470-11-2003),

If you wish to discuss the matter further, please contact me via email: carl.dumpleton@planning.nsw.gov.au.

Yours sincerely

Carl Dumpleton
Team Leader
Energy and Resource Assessments
As nominee of the Planning Secretary

APPENDIX B: EVIDENCE OF CONSULTATION

Address all communication to the Chief Executive Officer
Shellharbour City Council,
Dharawal Country
Locked Bag 155, Shellharbour City Centre, NSW 2529

p. 02 4221 6111 **f.** 02 4221 6016
council@shellharbour.nsw.gov.au
www.shellharbour.nsw.gov.au

11 August 2025

Lauren Sibigtroth
Email: Lauren.Sibigtroth@boral.com.au

Shellharbour City Council – Review of Boral Dunmore Quarry Rehabilitation Management Plan and Rehabilitation Strategy

Hi Lauren,

Thank you for your email with regard to the Boral Dunmore Quarry Rehabilitation Management Plan and Rehabilitation Strategy relating to Mod 13 by DA 470-11-2003. Council have reviewed the provided information with the aim of ensuring the Rehabilitation Management Plan and Rehabilitation Strategy meet condition requirements in the consent and facilitating positive rehabilitation outcomes. The below comments are provided.

Overview

Within the consolidated consent for DA 470-11-2003 MOD 13, the Boral Dunmore Quarry has several rehabilitation obligations. These are primarily specified within Schedule 4, between Conditions 52 – 67. The conditions present several key rehabilitation requirements: adherence to Rehabilitation Objectives specified in Condition 52, preparation of a Rehabilitation Strategy (RS) in Condition 55, preparation of a Rehabilitation Management Plan (RMP) specified in Condition 61, and consultation with numerous stakeholders in preparation of these documents.

The outcome of the review indicates an overall satisfactory review on the following matters:

a. An interim conceptual final landform and water infrastructure plan is provided, which shows extensive revegetation of the final landform, and provision of water dams and drainage infrastructure.
b. The RS and RMP provided clear definition of rehabilitation domains and short-term (5-year) scheduling of rehabilitation. It is clear that the quarry is currently in an operational phase, and limited progressive rehabilitation has taken place.
c. The RS and RMP provide clear rehabilitation phases, methodology, vegetation species selection, performance objectives, completion criteria, monitoring program, and contingency planning.

However, there are numerous aspects of the RS and RMP which require amendment to address some details that have been omitted or proposed to be included in future documentation and studies, and amendments to refine rehabilitation outcomes. Council requests the following is addressed in the RS and RMP:

Rehabilitation Strategy (RS)

1. ***Consultation Requirements and Omitted / Future Details and Studies***:

Address all communication to the Chief Executive Officer
Shellharbour City Council,
Dharawal Country
Locked Bag 155, Shellharbour City Centre, NSW 2529

p. 02 4221 6111 **f.** 02 4221 6016
council@shellharbour.nsw.gov.au
www.shellharbour.nsw.gov.au

There are numerous aspects of the RS which are either omitted, or 'to be included' in future documentation and studies: either within the Detailed Final Landform Feasibility Assessment (as required by Conditions 58 – 60), or within detailed quarry closure planning closer to quarry cessation. These details are required by condition 55, and include:

a. Long-term scheduling for life-of-quarry operations and progressive rehabilitation plans (Condition 55 item g): The RS only provides a 5-year schedule, and otherwise states rehabilitation will be undertaken following completion of extraction, with no projections for when extraction may be completed for each section of the quarry, or a long-term plan for sequencing and execution of progressive rehabilitation. These details are effectively omitted and are not indicated to be included in any future documents or studies.

b. Post-quarry land use strategy and final land use options (Condition 55 item j): The RS states that final land use options are proposed to be included in closure planning documents. The RS also states that more detailed post-quarry land use strategy will be included in the Detailed Final Landform Feasibility Assessment.

c. Investigation of socio-economic effects (Condition 55 item l): The RS proposes that detailed investigation of socio-economic effects will be described and strategies to minimise adverse effects included in the Detailed Final Landform Feasibility Assessment.

Currently, Condition 55 only requires consultation with Council for preparation of the RS (Condition 55 item b), and does not specify any further consultation is required upon revision of the RS to incorporate outcomes of the Detailed Final Landform Feasibility Assessment as specified in Conditions 58 – 60, or during quarry closure planning.

The details specified above are conditionally-prescribed, as they are required to meet Condition 55, items g, j and l, and are currently not satisfied. However, Council understands that these details can be prepared with greater understanding of the site and the most appropriate rehabilitation options at future milestones. In either case, these details must be prepared in consultation with Council (and other stakeholders) as required by Condition 55 item b.

As such, Council requests these details are either included in the Rehabilitation Strategy for Council's review, or that the Rehabilitation Strategy makes specific provisions for consultation with Council (and other stakeholders) upon the preparation of further plans which include these details. Such a consultation provision must make specific reference to the Detailed Final Landform Feasibility Assessment and the Detailed Quarry Closure Plan, and must trigger consultation when the Rehabilitation Strategy is revised to incorporate details to fulfill any currently omitted details which are conditionally-prescribed.

2. ***Stakeholder Engagement – Aboriginal Communities***

Council recommends that the stakeholder engagement plan within the RS is amended to include specific details on how consultation with Aboriginal communities will occur; this will ensure a culturally-sensitive rehabilitation process and optimise rehabilitation outcomes.

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www.shellharbour.nsw.gov.au

Rehabilitation Management Plan (RMP)

The RMP is overall comprehensive and satisfactory. However, the following shortcomings were identified in Council's review:

1. Condition 61, item j requires the RMP to include a monitoring program on rehabilitation. Whilst the monitoring program appears overall comprehensive and satisfactory, the program specifies a monitoring 'commencement period', however does not specify an 'end' period. This should be clarified. Is the monitoring limited or in perpetuity?

2. Condition 61, item l requires that any further consultation that will be undertaken to improve rehabilitation outcomes is described. It will be important that stakeholders, including Council are consulted with once the quarry nears closure, and more details on progressive rehabilitation and the final landform are made available. It is requested that this section is amended to account for stakeholder consultation to improve rehabilitation outcomes.

General Rehabilitation Comments

Beyond the condition requirements specified above, Council provides the following general impact comments for consideration by any reviewing State Government bodies, the Planning Secretary, and Boral Quarries:

In the course of the quarry life, including in the most recent RIC Pit Extension in Modification 13, a significant number of high-value endangered species have been impacted, including removal of mature endangered *Zieria granulata* (Illawarra Zieria), endangered *Irenepharsus trypherus* (Illawarra Irene), endangered *Cynanchum elegans* (White-flowered Wax Plant) and critically endangered *Melaleuca armillaris Tall Shrubland*. Substantial habitat has also been removed for the Little Eagle and Square-titled Kite, both threatened fauna species.

It is positive to see that the revegetation plan includes planting of 1 *Zieria granulata* per 5m2, and establishment of *Melaleuca armillaris Tall Shrubland*. Council requests this is carefully reviewed to ensure that the proposed re-vegetation consists of appropriate species typology, species density, and will be appropriate to sustain a thriving, healthy ecological community on site, which is conscious of the species and ecological communities affected in the life of quarry operations, and the best ecological outcome possible for the site.

I trust this information provides a comprehensive review of the RMP and RS relating to the Boral Dunmore Quarry. Please contact me on 4221 6168 or Jacob.Lia@shellharbour.nsw.gov.au to field any enquiries you may have on these matters.

Yours Sincerely,

Jacob Lia
Town Planner – Statutory Planning

Table B.1 Response to Shellharbour City Council		
Comment	**Response**	**Section updated**
Rehabilitation Management Plan **The RMP is overall comprehensive and satisfactory. However, the following shortcomings were identified in Council's review:**		
1. Condition 61, item j requires the RMP to include a monitoring program on rehabilitation. Whilst the monitoring program appears overall comprehensive and satisfactory, the program specifies a monitoring 'commencement period', however does not specify an 'end' period. This should be clarified. Is the monitoring limited or in perpetuity?	The RMP has been updated showing Monitoring will cease 5 years post achievement of completion criteria	Section 7.3
2. Condition 61, item l requires that any further consultation that will be undertaken to improve rehabilitation outcomes is described. It will be important that stakeholders, including Council are consulted with once the quarry nears closure, and more details on progressive rehabilitation and the final landform are made available. It is requested that this section is amended to account for stakeholder consultation to improve rehabilitation outcomes.	Section 4.1 refers to the Rehabilitation Strategy which describes additional studies, work, research and consultation that will be undertaken at various stages of quarry development to improve rehabilitation outcomes. The Rehabilitation Strategy has been updated consistent with Councils comments.	
General Rehabilitation Comments		
Beyond the condition requirements specified above, Council provides the following general impact comments for consideration by any reviewing State Government bodies, the Planning Secretary, and Boral Quarries: In the course of the quarry life, including in the most recent RIC Pit Extension in Modification 13, a significant number of high-value endangered species have been impacted, including removal of mature endangered Zieria granulata (Illawarra Zieria), endangered Irenepharsus trypherus (Illawarra Irene), endangered Cynanchum elegans (White-flowered Wax Plant) and critically endangered Melaleuca armillaris Tall Shrubland. Substantial habitat has also been removed for the Little Eagle and Square-titled Kite, both threatened fauna species. It is positive to see that the revegetation plan includes planting of 1 Zieria granulata per 5m2, and establishment	Noted.	

of Melaleuca armillaris Tall Shrubland. Council requests this is carefully reviewed to ensure that the proposed re-vegetation consists of appropriate species typology, species density, and will be appropriate to sustain a thriving, healthy ecological community on site, which is conscious of the species and ecological communities affected in the life of quarry operations, and the best ecological outcome possible for the site.		