Seaham Quarry Project

Application Number: **01867** Commencement Date: **06/06/2023** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Seaham Quarry Project

1.1.2 Project industry type *

Mining

1.1.3 Project industry sub-type

Other

1.1.4 Estimated start date *

01/01/2027

1.1.4 Estimated end date *

01/01/2057

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

Boral Resources (NSW) Pty Ltd (Boral) proposes to develop the Seaham Quarry Project, which involves changes to an existing hard rock quarry in Balickera, New South Wales (NSW) including to the approved limits of extraction and operational parameters (herein referred to as the 'Proposed action'). Seaham Quarry (the Quarry) is currently operating pursuant to a development consent (DA 2683_85) issued by Port Stephens Council. The Quarry is located approximately 26 kilometres (km) north of Newcastle and 6 km east of the township of Seaham, in the local government area (LGA) of Port Stephens Council.

The Quarry is an essential supplier of hard rock products in the Newcastle, Central Coast, and broader Hunter region markets and is ideally located near major transport routes including the M1 Pacific Highway. Its location and production rate (currently, 1.2 million tonnes per annum, tpa) make it one of Boral's most strategically important non-metropolitan quarries.

The Proposed action involves a lateral and vertical expansion to the approved Ignimbrite Pit (the Quarry's primary pit) as well as changes to certain operational parameters. The Proposed action involves the following key components:

- Increase the approved extraction area by approximately 30.36 ha (the Disturbance footprint) (refer to Att 1-EPBC Referral Supplementary Report-2023, Figure 1.1 and Figure 1.2)
- Increase the depth of the approved extraction area to 35 m RL
- Allow quarry operations for an additional 30 years
- Annual extraction of up to 2,000,000 tpa
- 24-hours operation, 7 days a week
- Importation and use of virgin excavated natural material (VENM) in progressive rehabilitation.

The Project area (comprising Lot C DP 164505 and Lot 66 DP753200) is approximately 303 ha in size, comprising:

- 234 ha of native vegetation

- 69 ha of cleared land, associated with the operating Quarry.

The area subject to the Proposed action (Disturbance footprint) is approximately 30.36 ha in size, comprising:

- 26.50 ha of native vegetation
- 3.86 ha of cleared land, associated with the operating Quarry.

Refer to Att 1-EPBC Referral Supplementary Report-2023, Table 3.1, page 12.

The proposed action will have the following direct impacts on the environment in the Disturbance footprint:

- loss of native vegetation (vegetation clearing) and subsequent loss of fauna habitat
- progressive demolition/excavation via quarrying in the Disturbance footprint (over a 30 year period)
- excavation in the Disturbance footprint to change the configuration of a series of six small dams into a larger dam(s)

The proposed action may have indirect impacts on the retained environment adjacent to the Disturbance footprint:

- erosion and sedimentation (noting that this is expected to be minimal as the hard rock material will be removed into the current quarry void)
- weed introduction and spread
- potential inadvertent disturbance of retained habitats
- removal of habitat resources for threatened fauna
- increased noise, vibration, light and dust levels resulting in disturbance of fauna species, and consequent abandonment of habitat, or changes in behaviour (including breeding behaviour)

The Disturbance footprint design and location is considered optimal and has been designed to minimise direct and indirect impacts as it:

- will not require further vegetation removal for ancillary quarrying infrastructure such as haul roads and production facilities; and
- provides access to a significant volume of high-quality rock with minimal vegetation loss, by expanding from the existing quarry pit.

Mitigation measures to reduce residual potential impacts on EPBC Act listed matters are proposed, including a Biodiversity Management Plan (BMP) for the Proposed action in accordance with the relevant NSW and Commonwealth legislation and/or policies. All works would be undertaken in accordance with general mitigation measures to be identified in a construction environment management plan (CEMP). Prior to construction, a BMP, forming part of the CEMP, will be prepared and will include the construction management measures proposed. Any residual impacts would be compensated through implementation of the NSW biodiversity offset scheme.

Refer to Att 1-EPBC Referral Supplementary Report-2023, Section 4, Pages 18-19.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

No

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

Commonwealth legislation:

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities, heritage places and water resources, namely, Matters of National Environmental Significance (MNES). These are:

- world heritage properties;
- places listed on the National Heritage Register;
- Ramsar wetlands of international significance;
- threatened flora and fauna species and ecological communities;
- migratory species;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park;
- nuclear actions (including uranium mining); and
- water resources, in relation to coal seam gas or large coal mining development.

Under the EPBC Act, an action that may have a significant impact on a MNES is a ‘controlled action’ and can only proceed with the approval of the Commonwealth Minister for the Environment. An action that may potentially have a significant impact on a MNES is referred to the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) for determination as to whether or not it is a controlled action. If deemed a controlled action the project is assessed under the EPBC Act, and a decision made as to whether or not to grant approval.

The Proposed action has been referred (i.e. this referral) to the Commonwealth Minister for the Environment for potentially significant impacts upon MNES (threatened fauna species).

NSW legislation:

The Proposed action is declared State significant development (SSD) by the State Environmental Planning Policy (Planning Systems) 2021 (the Planning Systems SEPP), and approval for the Proposed action is required under Part 4, Division 4.7 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). An SSD application for the Proposed action is to be accompanied by an Environmental Impact Statement (EIS).

Port Stephens Local Environmental Plan 2013 has zoned the Disturbance footprint as RU2 Rural Landscape within which the activities are permitted with consent.

To accompany the EIS, a detailed assessment of the biodiversity values and the likely biodiversity impacts of the Proposed action is being undertaken in accordance with the NSW *Biodiversity Conservation Act 2016* (BC Act) and the Biodiversity Assessment Method (BAM) (DPIE, 2020a) and will be documented in a Biodiversity Development Assessment Report (BDAR). The BDAR will outline the measures taken to avoid, minimise and mitigate impacts to the vegetation and species habitat present within the disturbance footprint and methodologies to minimise impacts associated with the Proposed action. Residual unavoidable impacts of the Proposed action will be calculated in accordance with the BAM (DPIE, 2020a) and offset in accordance with the NSW Biodiversity Offset Scheme (BOS).

If the Proposed action is deemed by the Australian Government DCCEEW to be a controlled action, it is Boral's intention to use the NSW Assessment Bilateral Agreement (DCCEEW, 2023) to assess the Proposed action at both the state and Commonwealth level. The Australian Government supports the use of the NSW BOS and the BAM (DPIE, 2020a) as the underpinning methodology for assessment of biodiversity values, including the calculation of biodiversity credit requirements.

Strategic planning framework:

State and regional

Greater Sydney Region Plan 2018: A Metropolis of Three Cities forecasts large-scale economic growth in the central and western components of greater Sydney, with the construction of the Western Sydney Airport and Aerotropolis playing a key role in the transformation of these regions. Significant volumes of aggregate, of the kind produced at the Quarry, will be required to facilitate this economic growth and construction of key infrastructure projects within Sydney and Newcastle regions.

Hunter Regional Plan 2041 provides a 20-year land use plan and outlines objectives for the Hunter region. The Proposed action will support the objectives of the plan as it will support the Hunter's industrial capacity and will provide a key construction material, in proximity, required to develop the infrastructure and housing supply desired in the region.

Draft Hunter Regional Transport Plan 2041 sets out 18 objectives which relate to connectivity, traffic, and safety improvements across road, rail, footpath, cycleway, and air. The Proposed action would broadly support the objectives of this plan through the provision of aggregate products utilised in the construction and maintenance of transport infrastructure.

The **Greater Newcastle Metropolitan Plan 2036** aims to deliver housing close to jobs and services and improve connections to jobs, services, and recreation. The Proposed action will support these outcomes by providing key construction materials in proximity to metro centers needed to develop the region.

The **NSW Industry Development Framework** names priority industries which require focus to drive productive structural change and a more resilient post-pandemic NSW economy. Resources is a priority industry under the Framework.

Local

Port Stephens Local Strategic Planning Statement (LSPS) is the Port Stephens Council plan to guide land use planning from 2020 to 2040. The Proposed action will support the vision described in the LSPS (Planning Priority 1, 5, and 6) by providing a supply of construction material near future growth areas.

Port Stephens Economic Development Strategy 2021-2025 identifies public transport, roads, and housing supply as key challenges for the locality. The Proposed action will support the strategy by providing construction materials near construction sites.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

A Stakeholder and Community Engagement Plan (SCEP) was developed for the Proposed action to address the needs of both the Scoping and EIS phases and to respond to the anticipated communication needs and preferences of key stakeholders.

Boral has undertaken the following consultation regarding the Proposed action:

- A website was established providing general information about the quarry and the Proposed action (March 2023 - ongoing)
- A dedicated email address was established to enable two-way communication between Boral and the community (March 2023 – ongoing) kate.woodbridge@boral.com.au
- A phone number was established to enable two-way communication between Boral and the community (March 2023 – ongoing)
- Introduction letters and emails were sent to key stakeholders providing information about the Proposed action and an opportunity to attend a briefing from the Project team (4 – 12 April 2023)
- Introduction briefings are being conducted in-person and online to provide stakeholders with information on the Proposed action as well as provide an opportunity to give feedback and express concerns (May 2023 – ongoing).
- A briefing letter was issued to the Department of Planning and Environment and a Scoping Meeting was held on 26 April 2023.

Future consultation to be undertaken:

- Update SCEP to support development of the EIS after the release of the Project SEARs (June 2023)

- Update key stakeholder groups after the release of the Project Secretary's Environmental Assessment Requirements (SEARs) received from the Department of Planning and Environment (DPE) via letters and emails, as well as the first newsletter regarding the Proposed action (June 2023)
- Undertake targeted stakeholder briefings to obtain further feedback and refine SCEP (July 2023)
- Advertise and hold a drop-in community information session to provide further information and obtain feedback (July 2023)
- Conduct a pre-EIS exhibition phase by distributing the second Project newsletter and offering briefings to key stakeholders to provide information and obtain feedback (August 2023)
- Advertise and hold a second drop-in community information session to provide further information and obtain feedback (October 2023)
- Prepare EIS consultation chapter for public display (November 2023).

1.3.1 Identity: Referring party

Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

The Department of Climate Change, Energy, the Environment and Water (the department) collects your personal information (as defined by the Privacy Act 1988) through this platform for the purposes of enabling the department to consider your submission and contact you in relation to your submission. If you fail to provide some or all of the personal information requested on this platform (name and email address), the department will be unable to contact you to seek further information (if required) and subsequently may impact the consideration given to your submission.

Personal information may be disclosed to other Australian government agencies, persons or organisations where necessary for the above purposes, provided the disclosure is consistent with relevant laws, in particular the Privacy Act 1988 (Privacy Act). Your personal information will be used and stored in accordance with the Australian Privacy Principles.

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	28141736558
Organisation name	EMM CONSULTING PTY LIMITED
Organisation address	2065 NSW

Referring party details

Name	Madeleine Hunt
Job title	Ecologist
Phone	0421069780
Email	mhunt@emmconsulting.com.au
Address	Level 3, 175 Scott Street, Newcastle NSW 2300

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	51000756507
Organisation name	BORAL RESOURCES (NSW) PTY LTD
Organisation address	2113 NSW

Person proposing to take the action details

Name	Liam Riordan
Job title	Planning and Approvals Manager (VIC/TAS)
Phone	0431231218
Email	liam.riordan@boral.com.au
Address	251-259 Salmon Street, Port Melbourne, VIC 3207

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

Record of responsible environmental management

Boral Resources (NSW) Pty Limited (Boral) is the applicant for the Proposed action. Boral is a division of Australia's largest construction materials company, Boral Limited. An Environmental Report is made to the Group Executive Committee each month.

Content of the report includes:

- Group Environmental performance and infringement history
- Compliance and material environmental issues/incidents
- Audit activity
- Progress on environmental initiatives and projects

- National and Region-specific regulatory developments
- Environmental action management close out

The most senior environmental manager or equivalent in each Region provides environmental updates to the Head of Environment at the end of each month. The Head of Environment consolidates the information, and submits the report to the Executive Committee, including the Chief Executive Officer. Monthly reports are consolidated on a quarterly basis for reporting to the Boral Board HSE Committee.

In addition, the group Environment Policy is delivered through the implementation of Boral's integrated Health Safety Environment and Quality (HSEQ) Management System and related strategies, improvement plans and programs.

Past or present proceedings

There are no current proceedings against Boral under Commonwealth State or Territory law.

Past PINs issued to Boral are listed below:

17/06/2014 - Boral concrete - Blacktown, NSW - PIN - Agi driver was observed cleaning truck chute onto nature strip. Resident contacted - Penalty $1500.

29/01/2014 - Boral concrete - Granville, NSW - PIN - Incident details unknown - Penalty $400.

16/10/2017 - Boral concrete - Mt Ku-Ring-Gai, NSW - PIN - Breach of conditions D36(c), D53(a) and D75(a)(i) of Infrastructure approval for SSI 6136 of the North Connex Project. On 27 July 2017 Boral delivered 26 truckloads totalling 164.6m3 to private Boral customers when the plant was for use on the North Connex project - Penalty $15,000

23/10/2017 - Boral quarries - Peppertree, NSW - PIN - Breach of Schedule 3, Condition 4 of the project approval MP 06_0074 for operator attended daytime noise measurements measured on 12 July 2017 over the daytime criteria - Penalty $15,000.

23/11/2015 - Boral quarries - Peppertree, NSW - Show Cause - Pollution incident where bund wall failed and entered creek – Penalty $15,000.

01/12/2021 (hearing) – Boral asphalt – Williamstown, VIC – Prosecution – Emulsion spill from the Williamstown site that entered the Paisley channel wetlands, adjacent to Port Philip Bay – Boral agreed to two environmental projects totalling $100,000

03/02/2023 – Boral quarries – Hervey Bay, QLD – PIN – Failure to conduct groundwater monitoring in contravention of a license condition of the Environmental Authority – Penalty $13,785

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

Boral's Environmental Policy (POL-HSEQ-002) is as follows:

At Boral, we acknowledge that the very nature of our operations means there will be impacts on the environment.

We are committed to our goal of zero harm and work to eliminate adverse environmental impacts. Where elimination is not possible, we seek to minimise any harmful effects from our operations which may mean we target better performance than environmental laws require. Wherever practicable, we will secure improved environmental outcomes.

Specifically, Boral will strive to:

- Reduce waste in all its forms, leading to:
  - efficient use of energy, including reuse of waste energy
  - conservation of water
  - minimisation and recycling of waste production materials and energy
  - prevention of pollution; and
  - effective use of virgin and recovered resources and supplemental materials.
- Reduce greenhouse gas emissions from our processes, operations, and facilities, including appropriate use of alternative fuels
- Protect and where practicable enhance biodiversity values at and around our facilities.
- Openly and constructively engage with communities surrounding our operations.
- Through communication and training, encourage and assist our employees to enhance Boral's environmental performance.
- Comply with environmental legislation, regulations, standards, and codes of practice relevant to the particular business, and
- Allocate sufficient resources to meet the commitments of this policy:

This policy is delivered through the implementation of Boral's integrated Health Safety Environment and Quality (HSEQ) Management System and related strategies, improvement plans and programs.

Refer to Att 2-Boral Environmental Policy-2022

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details	
ABN/ACN	51000756507
Organisation name	BORAL RESOURCES (NSW) PTY LTD
Organisation address	2113 NSW

Proposed designated proponent details	
Name	Liam Riordan
Job title	Planning and Approvals Manager (VIC/TAS)
Phone	0431231218
Email	liam.riordan@boral.com.au
Address	251-259 Salmon Street, Port Melbourne, VIC 3207

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	28141736558
Organisation name	EMM CONSULTING PTY LIMITED
Organisation address	2065 NSW
Representative's name	Madeleine Hunt
Representative's job title	Ecologist
Phone	0421069780
Email	mhunt@emmconsulting.com.au
Address	Level 3, 175 Scott Street, Newcastle NSW 2300

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	51000756507
Organisation name	BORAL RESOURCES (NSW) PTY LTD
Organisation address	2113 NSW

Representative's name	Liam Riordan
Representative's job title	Planning and Approvals Manager (VIC/TAS)
Phone	0431231218
Email	liam.riordan@boral.com.au
Address	251-259 Salmon Street, Port Melbourne, VIC 3207

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

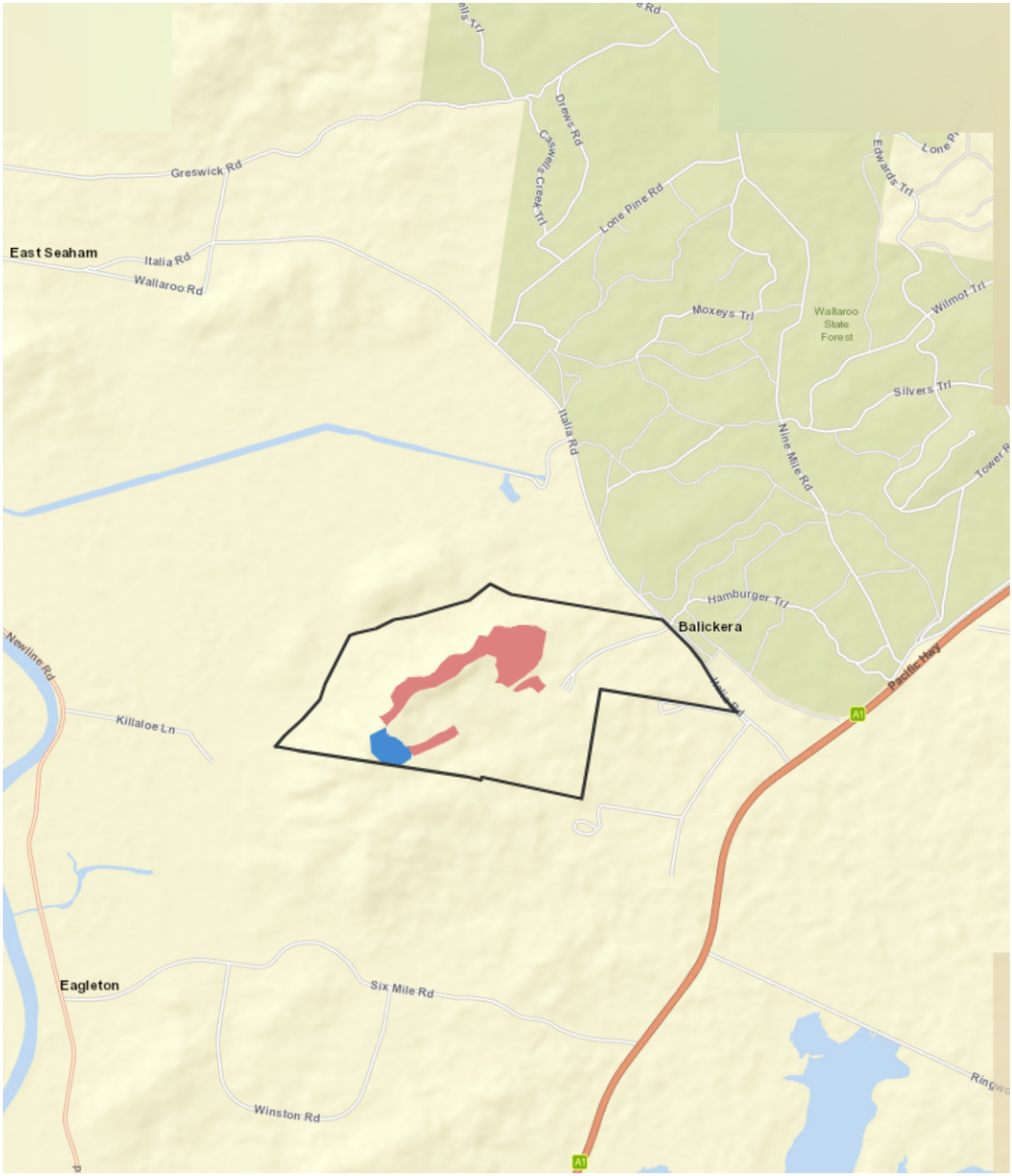
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Person proposing to take the action

2. Location

2.1 Project footprint



2.2 Footprint details

2.2.1 What is the address of the proposed action? *

139 Italia Road, Balickera

2.2.2 Where is the primary jurisdiction of the proposed action? *

New South Wales

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

Tenure is freehold title. The owner is Boral Resources (NSW) Pty Ltd .

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

The Quarry is located at 139 Italia Road, in the suburb of Balickera. The Quarry is accessible on the eastern boundary via Italia Road. Italia Road is a sealed road of approximately 8.5 km which connects the towns of Seaham and East Seaham to the M1 Pacific Highway. The sole entrance to the Quarry is located approximately 1.4 km along Italia Road from the M1 Pacific Highway. Italia Road provides direct access from the Quarry to the M1 Pacific Highway and will be the main route for transportation to and from the Quarry throughout the development, operational and completion stages of the Proposed action.

The intersection of Italia Road and the M1 Pacific Highway is a seagull type, at-grade intersection with dedicated left and right turn bays for turning traffic from the south and north respectively. The intersection allows a two-staged access for southbound right turn access to the highway from Italia Road. This is by way of an initial crossing of the northbound carriageway for the right turn movement into an acceleration lane and then a left-hand merge for integration with southbound highway traffic. Boral, together with the proponents of nearby planned quarries including Eagleton Rock Syndicate and the Australian Resource Development Group, is presently progressing a separate development application for the upgrade of the M1 Pacific Highway and Italia Road intersection in order to accommodate existing and future quarry traffic associated with the Proposed action and other proposed quarries in the locality. The preliminary design for the intersection facilitates prohibition of the southbound right turn movement from Italia Road for heavy vehicles. The upgrade will accommodate traffic from the Proposed action and other proposed quarries and is principally supported by Transport for NSW (TfNSW). The design prohibits heavy vehicles turning right into the southbound lanes of the Pacific Highway. Instead, vehicles looking to travel south will first travel north to the intersection of the Pacific Highway and Tarean Road interchange at Karuah to turn around to travel south along Pacific Highway.

The Disturbance footprint design and location is considered optimal as it will not require any ancillary quarrying infrastructure including haul roads. Therefore, the existing operational Quarry road infrastructure in the Project area will be used to provide access during the development, operational and completion stages of the Proposed action.

The Quarry is located approximately 13 kilometres (km) north of Raymond Terrace and 26 km north of Newcastle.

The Project area is zoned RU2 Rural Landscape under the Port Stephens Local Environmental Plan 2013 (Port Stephens LEP) and is primarily within a rural setting. Land uses immediately surrounding the Project area include rural residences, agriculture, and conservation. The vegetation surrounding the Quarry and associated infrastructure typically comprises Eucalyptus species forest.

The Quarry is situated in hilly terrain with forested ridges around it. There is a high ridge running south-west to north-east along the north-western side of the quarry highwall. The ridge reaches an elevation of 150 m Australia Height Datum (AHD) and quickly slopes down to the plains along the Williams River, west of the Project area. These plains sit at an elevation of 10–15 m AHD. To the north-east of the Project

area is the Wallaroo State Forest. Ringwood Park Motor complex, a racing circuit and car club, is located east of the site with the Pacific Highway beyond it. South of the site sits a number of forested hills and ridges with the residential suburb of Eagleton.

The vegetation within the Disturbance footprint is primarily native forest in good condition, with a high native species diversity and good cover of canopy species across the Disturbance footprint, except at the interface of the Quarry pit, where safety bunds and access trails occur. Owing to past and ongoing disturbance, areas that interface with the Quarry contain a lower diversity of native species and a higher diversity and cover of exotic plant species including lantana (*Lantana camara*), a High Threat Weed (HTW).

The Project area has high vegetation connectivity with adjoining lands to the north, south and west, and forms part of a large expanse of remnant forest vegetation extending from north of Raymond Terrace to Wallaroo State Forest and Wallaroo National Park. Italia Road and Hunter Water's Balickera Canal result in some habitat disconnect between the vegetation in the Project area and the Wallaroo State Forest and Wallaroo National Park to the north. The MI Pacific Highway is a barrier to habitat connectivity in an east-west direction and may limit fauna movement from west of the highway to larger expanses of vegetation associated with the Grahamstown Dam and Medowie State Conservation Area.

There are no karst, caves, crevices, cliffs, or other areas of geological significance within the Disturbance footprint. The existing Quarry contains vertical rock faces; however, they are part of the working Quarry with high levels of disturbance, minimising habitat value for fauna.

There are no permanent rivers, creeks, or streams within the Disturbance footprint. There are some drainage lines that hold water periodically after rain events, which would provide habitat for a range of fauna species. There are some first order streams in the broader Project area, being ephemeral, outermost tributaries of the floodplains of the Williams River, located to the west of the Project area. Seven Mile Creek, Hunter Water's Balickera Canal, as well a number of streams, occur within the broader landscape.

There are a series of dams in the Project area, associated with the operational Quarry. Despite being operating quarry dams, some provide habitat for a number of common fauna species, including frogs, microbats, and birds.

Due to the current operational Quarry, the following indirect impacts are likely to be impacting upon the environment (including fauna habitat) surrounding the existing Quarry:

- weed introduction and spread
- potential inadvertent disturbance of retained habitats
- noise, vibration, light and dust levels resulting in disturbance of fauna species, and consequent abandonment of habitat, or changes in behaviour (including breeding behaviour)

The site has not been impacted by natural hazards such as bushfire or flood in recent years.

3.1.2 Describe any existing or proposed uses for the project area.

The Project area (comprising Lot C DP 164505 and Lot 66 DP753200) is approximately 303 ha in size, comprising:

- 234 ha of native vegetation
- 69 ha of cleared land, associated with the operating Quarry.

The area subject to the Proposed action (Disturbance footprint) is approximately 30.36 ha in size, comprising:

- 26.50 ha of native vegetation
- 3.86 ha of cleared land, associated with the operating Quarry.

Refer to Att 1-EPBC Referral Supplementary Report-2023, Figure 1.1 and Figure 1.2.

The Proposed action involves a lateral and vertical expansion to the approved Ignimbrite Pit (the Quarry's primary pit) as well as changes to certain operational parameters. The Proposed action involves the following key components:

- Increase the approved extraction area by approximately 30.36 ha
- Increase the depth of the approved extraction area to 35 m RL
- Allow quarry operations for an additional 30 years
- Annual extraction of up to 2,000,000 tpa
- 24-hours operation, 7 days a week
- Importation and use of virgin excavated natural material (VENM) in progressive rehabilitation.

Other relevant development applications

Separate to the Proposed action, there are two separate development applications that are currently being progressed that are relevant to the Proposed action:

Boral is currently progressing an application to modify the Quarry's development consent DA 2683_85, Modification 6, to lower the northern extent of the approved extraction area at the Quarry to 45 m RL to create a uniform pit depth. No lateral extension to the approved extraction area or additional disturbance is being sought within the application.

Boral, together with the proponents of nearby planned quarries including Eagleton Rock Syndicate and the Australian Resource Development Group, is presently progressing a development application for the upgrade of the M1 Pacific Highway and Italia Road intersection in order to accommodate existing and future quarry traffic associated with the Quarry and other proposed quarries in the locality. The preliminary design for the intersection facilitates prohibition of the southbound right turn movement from Italia Road for heavy vehicles.

Both applications are currently in preparation and will be submitted to Port Stephens Council for determination.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

No areas of outstanding biodiversity value (AOBV) are present within the Project area.

There are no karst, caves, crevices, cliffs or other areas of geological significance within the Project area. The existing quarry contains vertical rock faces; however, they are part of a working quarry with high levels of disturbance, minimising habitat value for fauna.

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The Project area has steep and rugged topography with an elevated ridge extending north-east along the north-western side of the ignimbrite quarry highwall. The topography rises from approximately 145 mAHD at the western side of the ignimbrite quarry to approximately 150 mAHD at the highest point along the ridgeline. Site elevation decreases to approximately 55 mAHD towards the north-east and 65 mAHD towards the south near the rhyolite quarry.

The Project will not be in a marine area.

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

The Project area occurs within the NSW North Coast Interim Biogeographic Regionalisation for Australia (IBRA) Region and the Upper Hunter IBRA Sub Region. In addition, the Karuah Manning IBRA Sub Region occurs directly east of (but not within) the Disturbance footprint.

Three native plant community types (PCTs) have been recorded within the Project area, two of which have been recorded within the Disturbance footprint:

- PCT 1590 Spotted Gum – Broad – leaved Mahogany – Red Ironbark shrubby open forest (171.29 ha in Project area, 24.08 ha in Disturbance footprint)
- PCT 1584 White Mahogany – Spotted Gum – Grey Myrtle semi-mesic shrubby open forest of the central and lower Hunter Valley (28.52 ha in Project area, 2.46 ha in Disturbance footprint)
- PCT 1619 Smooth-barked Apple – Red Bloodwood – Brown Stringybark – Hairpin Banksia heathy open forest of coastal lowlands (34.59 ha in Project area, 0 ha in Disturbance footprint)

All areas of PCT 1590 within the Project area align with the Lower Hunter Spotted Gum Ironbark Forest in the Sydney Basin and NSW North Coast Bioregions, an endangered ecological community listed under the NSW *Biodiversity Conservation Act 2016* (BC Act). The vegetation communities within the Project area do not align with any Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed Threatened Ecological Communities (TECs).

Targeted threatened species surveys, undertaken to date, have identified the following EPBC Act and BC Act listed threatened fauna species within the Project area:

- Koala (*Phascolarctos cinereus*)

- South-eastern Glossy Black-Cockatoo (*Calyptorhynchus lathami lathami*)

In addition, the following BC Act listed threatened fauna species have been recorded within the Project area:

- Brush-tailed Phascogale (*Phascogale tapoatafa*)
- Squirrel Glider (*Petaurus norfolcensis*)

No EPBC Act or BC Act listed threatened flora species have been recorded within the Disturbance footprint to date.

A Biodiversity Development Assessment Report (BDAR) in accordance with the Biodiversity Assessment Method (BAM) (DPIE 2020) is currently being prepared to accompany the SSD project application.

Refer to Att 1-EPBC Referral Supplementary Report-2023, Section 3, Figure 3.1, Figure 3.2, and Figure 3.3.

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

Vegetation within the Project area consists primarily of dry sclerophyll forest with a diverse canopy of eucalypt species, open shrub layer and grassy ground layer with a mix of forbs, small ferns and other graminoids. In gullies and on sheltered aspects of the Project area, wet sclerophyll forest occurs, characterised by a canopy of lower eucalypt diversity, a mid-story of small mesic trees and an open shrub layer with various climbers. The ground layer in these sheltered areas is predominately a mix of grasses and ferns with a sparse cover of other graminoids and forbs.

Owing to past and ongoing disturbance, areas that interface with the Quarry contain a lower diversity of native species and a higher diversity and cover of exotic plant species. Lantana (*Lantana camara*), a High Threat Weed (HTW), is a prevalent weed within the Project area, occurring at varying densities, forming dense thickets in some locations.

The Project area occurs within the Newcastle Coastal Ramp NSW (Mitchell) Landscape. The Disturbance footprint is located in the ‘Ten mile road variant a’ (tma) and ‘Gilmore hill’ (gi) soil landscapes, both mapped as Rudosols under the Australian Soil Classification (ASC), with land and soil capability (LSC) of low to very low capability land with very high to severe limitations for high-impact land uses. The LSC of the present soil landscapes is constrained by hazards including shallow soils, water erosion or soil acidification. A ten mile road (tm) soil landscape is proximal to the Project area but not expected to be impacted by the Proposed action.

3.3 Heritage

3.3.1 Describe any Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area.

There are no listed heritage items within the Project area. Two listed heritage items are located in proximity:

- Balikera House (1 km north of the Project area; listed under the Port Stephens Local Environmental Plan 2013)
- Balickera Canal and Pumping Station (1 km north of the Project area; listed under the Heritage Act1977)

3.3.2 Describe any Indigenous heritage values that apply to the project area.

The Project area is situated within the traditional boundaries of the Worimi people and within the Worimi Local Aboriginal Land Council (LALC). A search of the NSW Native Title Vision identified no determined or registered native title claim or Indigenous Land Use Agreements (ILUAs) existing over the Project area.

A search of the AHIMS database identified 99 previously documented Aboriginal objects, sites or places within an area of 520 km² centered on the Project area.

The AHIMS database identified two previously documented sites are located within the Project area.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

Ground water:

The local flow system is a fractured rock groundwater aquifer contained within the ignimbrite and rhyolite sequences. The Quarry intercepts Eagleton Volcanics which has a very low primary porosity with groundwater flow occurring within secondary porosity features such as fractures or along contact boundaries between the volcanic rock and igneous dikes. Recharge areas to the Eagleton Volcanics are generally considered to be via rainfall on the upper slopes, ridgelines and hilltops of the landscapes where the rock sub-crops or outcrops Discharge points are likely to comprise of natural locations such as springs, spring fed dams, lower slopes and the relatively lower lying areas.

Surface water:

Despite being located approximately 15 km north of the Hunter Estuary RAMSAR Wetland, and being within the upstream catchment of that wetland, any potential surface water discharges from the Project area will not drain towards the Williams River or Hunter River. The Project area is located within the contributing catchment area to Grahamstown Dam. Grahamstown Dam is operated by Hunter Water Corporation and is the primary source of drinking water for the greater Newcastle region. Grahamstown Dam does not discharge upstream of the Hunter Estuary RAMSAR Wetland except for when the dam spills, which happens occasionally (i.e. once every 5 to 10 years) for short periods of time during and following extended wet periods and major flood events. The Proposed action (30.36 ha Disturbance footprint), when added to the existing Quarry footprint, will result in a total Quarry footprint of approximately 107 ha, which is less than 1% of the Grahamstown Dam catchment area (11,500 ha). Hence, any discharges from the Quarry do not have potential to materially change the water quality of any water that spills occasionally from Grahamstown Dam.

It is possible that to mitigate potential water quality impacts to Grahamstown Dam, some treated surface water from the Proposed action will be pumped to a discharge location on the Williams River floodplain. This water management approach is currently under consideration and if proposed would require consultation with relevant stakeholders before being formally proposed. If proposed, the State Significant Development (SSD) application will include a description of potential water quality impacts to local receiving watercourses (i.e. those that would receive the discharged water) and the larger watercourses that receiving watercourse drains to (i.e. the Williams River floodplain and Hunter Estuary RAMSAR Wetland).

Due to the considerable distance between the Proposed action and the Ramsar Wetland, and with suitable mitigation measures that would be in place for any proposed water management approach, the Proposed action is not expected to have any direct or indirect impact on the Hunter Estuary RAMSAR Wetland.

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	Yes	Yes

EPBC Act section	Controlling provision	Impacted	Reviewed
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No World Heritage properties were identified through the Protected Matters Search Tool (PMST).

The closest World Heritage site is the Old Great North Road located in Wiseman's Ferry which is approximately 170 km to the south-west of the Project area. Due to the considerable distance between the two sites, the Proposed action will not result in any direct or indirect impacts on a World Heritage site.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No National Heritage places were identified through the PMST.

The closest National Heritage site is the Old Great North Road located in Wiseman's Ferry which is approximately 170 km to the south-west of the Project area. Due to the considerable distance between the two sites, the Proposed action will not result in any direct or indirect impacts on a National Heritage site.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Ramsar wetland
No	No	Hunter Estuary Wetlands

4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The PMST identified the Hunter Estuary wetlands, a Ramsar Wetland that is located approximately 15 km south-west of the Project area.

Due to the distance between the wetland and the Project area, the Proposed action is not expected to result in any direct or indirect impacts on a Ramsar Wetland.

Despite being located approximately 15 km north of the Hunter Estuary RAMSAR Wetland, and being within the upstream catchment of that wetland, any potential surface water discharges from the Project area will not drain towards the Williams River or Hunter River. The Project area is located within the contributing catchment area to Grahamstown Dam. Grahamstown Dam is operated by Hunter Water Corporation and is the primary source of drinking water for the greater Newcastle region. Grahamstown Dam does not discharge upstream of the Hunter Estuary RAMSAR Wetland except for when the dam spills, which happens occasionally (i.e. once every 5 to 10 years) for short periods of time during and following extended wet periods and major flood events. The Proposed action (30.36 ha Disturbance footprint), when added to the existing Quarry footprint, will result in a total Quarry footprint of approximately 107 ha, which is less than 1% of the Grahamstown Dam catchment area (11,500 ha). Hence, any discharges from the Quarry do not have potential to materially change the water quality of any water that spills occasionally from Grahamstown Dam.

It is possible that to mitigate potential water quality impacts to Grahamstown Dam, some treated surface water from the Proposed action will be pumped to a discharge location on the Williams River floodplain. This water management approach is currently under consideration and if proposed would require consultation with relevant stakeholders before being formally proposed. If proposed the State Significant Development (SSD) application will include a description of potential water quality impacts to local receiving watercourses (i.e. those that would receive the discharged water) and the larger watercourses that receiving watercourse drains to (i.e. the Williams River and Hunter Estuary RAMSAR Wetland).

Due to the considerable distance between the Proposed action and the Ramsar Wetland, and with suitable mitigation measures that would be in place for any proposed water management approach, the Proposed action is not expected to have any direct or indirect impact on the Hunter Estuary RAMSAR Wetland.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species
No	No	Angophora inopina

Direct impact	Indirect impact	Species
Yes	No	Anthochaera phrygia
No	No	Arthraxon hispidus
No	No	Asperula asthenes
No	No	Botaurus poiciloptilus
No	No	Caladenia tessellata
No	No	Calidris ferruginea
Yes	No	Callocephalon fimbriatum
Yes	No	Calyptorhynchus lathami lathami
Yes	No	Chalinolobus dwyeri
No	No	Charadrius leschenaultii
Yes	No	Climacteris picumnus victoriae
No	No	Cryptostylis hunteriana
No	No	Cynanchum elegans
Yes	No	Dasyurus maculatus maculatus (SE mainland population)
No	No	Dichanthium setosum
No	No	Erythrotriorchis radiatus
No	No	Eucalyptus camfieldii
No	No	Eucalyptus glaucina
No	No	Euphrasia arguta
No	No	Falco hypoleucos
Yes	No	Grantiella picta
No	No	Grevillea parviflora subsp. parviflora
Yes	No	Hirundapus caudacutus
Yes	No	Lathamus discolor
No	No	Limosa lapponica baueri
No	No	Litoria aurea
No	No	Melaleuca biconvexa
No	No	Melanodryas cucullata cucullata
No	No	Mixophyes balbus
No	No	Neophema chrysostoma
No	No	Notamacropus parma
No	No	Numenius madagascariensis
No	No	Persicaria elatior
No	No	Petauroides volans
No	No	Petaurus australis australis

Direct impact	Indirect impact	Species
Yes	No	Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)
No	No	Potorous tridactylus tridactylus
No	No	Prasophyllum sp. Wybong (C.Phelps ORG 5269)
No	Yes	Pseudomys novaehollandiae
Yes	No	Pteropus poliocephalus
No	No	Pycnoptilus floccosus
No	No	Rhizanthella slateri
No	No	Rhodamnia rubescens
No	No	Rhodomyrtus psidioides
No	No	Rostratula australis
No	No	Stagonopleura guttata
No	No	Syzygium paniculatum
No	No	Tetratheca juncea
No	No	Thesium australe
No	No	Uperoleia mahonyi

Ecological communities

Direct impact	Indirect impact	Ecological community
No	No	Central Hunter Valley eucalypt forest and woodland
No	No	Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community
No	No	Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland
No	No	Lowland Rainforest of Subtropical Australia
No	No	River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria
No	No	Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Direct impact (removal of 26.5 ha of native vegetation that is habitat) for the Proposed action will impact the following EPBC Act listed threatened species:

- *Chalinolobus dwyeri* (Large-eared Pied Bat)
- *Lathamus discolor* (Swift Parrot)
- *Phascolarctos cinereus* (Koala)
- *Anthochaera phrygia* (Regent Honeyeater)
- *Hirundapus caudacutus* (White-throated Needletail)
- *Dasyurus maculatus maculatus* (Spot-tailed Quoll)
- *Callocephalon fimbriatum* (Gang-gang Cockatoo)
- *Calyptorhynchus lathami lathami* (South-eastern Glossy Black Cockatoo)

- *Grantiella picta* (Painted Honeyeater)
- *Pteropus poliocephalus* (Grey-headed Flying Fox)
- *Climacteris picumnus victoriae* (Brown Treecreeper – south-eastern).

Refer to Att 1-EPBC Referral Supplementary Report-2023 (Section 5, Appendix B).

Indirect impact (<1 ha of native vegetation that is suboptimal habitat, located near the Disturbance footprint) for the Proposed action will impact the following EPBC Act listed threatened species:

- *Pseudomys novaehollandiae* (New Holland Mouse).

There is no suitable habitat for the New Holland Mouse within the Disturbance footprint, however there is a small area (<1 ha) of suboptimal habitat in the Project area, near the disturbance footprint, to the north of the existing group of small dams, in an area mapped as 'Plant Community Type 1590 (Melaleuca variant)' (refer to Att 1-EPBC Referral Supplementary Report-2023, Figure 3.2). These areas contain softer substrate, compared to the rocky substrate of the Disturbance footprint. However, this area is suboptimal habitat for the New Holland Mouse, as the top soil is still very shallow and is not soft. Due to the proximity of the sub-optimal habitat to the disturbance footprint, the Proposed action may have an indirect impact on the threatened species, namely erosion and sedimentation, weed introduction and spread, potential inadvertent disturbance of retained habitats, removal of habitat resources for threatened fauna, increased noise, vibration, light and dust levels resulting in disturbance and consequent abandonment of habitat, or changes in behaviour (including breeding behaviour).

The PCTs mapped within the Project area and Disturbance footprint do not align with any EPBC Act listed endangered communities, therefore no ecological community (EPBC Act listed) will be impacted.

Refer to Att 1-EPBC Referral Supplementary Report-2023, Section 5, and Appendix B.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

Yes

4.1.4.5 Describe why you consider this to be a Significant Impact. *

For those protected matters that were considered to have potential to occur within the Disturbance footprint, or that were recorded within the Disturbance footprint, assessments of significance were prepared, in accordance with Matters of National Environmental Significance. Significant Impact Guidelines 1.1 (DoE 2013), as presented in Att 1-EPBC Referral Supplementary Report-2023 (Appendix C).

The Proposed action is likely to have a significant impact on the EPBC Act listed Endangered Koala (combined populations of QLD, NSW and the ACT), through removal of 26.5 ha of suitable habitat (forest that contains Koala feed trees and other trees of importance to Koala for shelter and movement). The Proposed action will lead to a long-term decrease of 26.5 ha of suitable Koala habitat.

The Proposed action's impact upon all other threatened species identified in section 4.1.4.2 is not considered to be significant (refer to Att 1-EPBC Referral Supplementary Report-2023, Appendix C).

4.1.4.7 Do you think your proposed action is a controlled action? *

Yes

4.1.4.8 Please elaborate why you think your proposed action is a controlled action. *

The Proposed action is likely to have a significant impact on the Endangered Koala, as listed under the EPBC Act through the removal of 26.5 ha of habitat.

It is considered that the Proposed action is likely to constitute a controlled action and require approval under the EPBC Act.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

The hierarchy of avoid and minimise has been used in the design of the Proposed action; the pit design has been through several iterations with biodiversity values being a key consideration in the design process. Boral engaged EMM Consulting Pty Ltd (EMM) during 2017 to undertake initial biodiversity constraints assessment within the Project area. Since then, the Proposed action has been informed by iterative environmental constraint assessment comprising both desktop and field survey, with the aim to reasonably avoid and minimise significant impacts to biodiversity values. EMM has been undertaking vegetation mapping, vegetation integrity assessment, habitat assessment, threatened species targeted survey, and providing ongoing advice between 2017-2023 to assist Boral in this process (refer to Att 1-EPBC Referral Supplementary Report-2023, Section 2, Section 3).

The Proposed action involves the mining of hard-rock resources. Therefore, the consideration of alternate locations and designs of the Quarry pit area are limited by resource availability. Nonetheless, Boral has chosen not to pursue a southern extension option of the ignimbrite pit, thereby avoiding a larger biodiversity impact than originally planned (refer to Att 1-EPBC Referral Supplementary Report-2023, Figure 4.1). The avoidance of this area has resulted in avoidance of 5.7 ha of forest, which is Koala habitat.

Mitigation measures are proposed to reduce residual potential impacts on EPBC Act listed matters, including a Biodiversity Management Plan (BMP) for the Proposed action in accordance with the relevant NSW and Commonwealth legislation and/or policies (refer to Att 1-EPBC Referral Supplementary Report-2023, Section 4.2). All works will be undertaken in accordance with general mitigation measures to be identified in the Environmental Management Strategy (EMS). Prior to construction, a BMP, forming part of the EMS, will be prepared and will include the management measures proposed. Key minimisation and mitigation measures for biodiversity will include (but are not limited to):

- employee education and training
- retention of vegetation and habitat where possible
- fencing and access control
- traffic control measures
- staged progressive clearance
- weed and pest animal control
- erosion and sedimentation control
- minimising injury of all native animals during clearing and construction, via pre-clearance procedures using appropriately qualified ecologists
- specific pre-clearance procedures for Koala using appropriately qualified ecologists
- threatened biodiversity unexpected finds procedures
- noise, light and dust controls
- blasting controls

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Residual unavoidable impacts of the Proposed action will be calculated in accordance with the NSW *Biodiversity Conservation Act 2016* (BC Act) and the Biodiversity Assessment Method (BAM) (DPIE 2020a). Offsets will be in accordance with the NSW Biodiversity Offset Scheme (BOS). Accordingly, the biodiversity offset strategy for the Proposed action will be developed in consultation with the NSW Department and Planning and Environment (DPE).

If the Proposed action is deemed by the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) to be a controlled action, Boral proposed to use the NSW Assessment Bilateral Agreement (DCCEEW, 2023) to assess the Proposed action at both the state and Commonwealth level. The DCCEEW supports the use of the NSW BOS and the BAM (DPIE, 2020a) as the underpinning methodology for assessment of biodiversity values, including the calculation of biodiversity credit requirements.

(Refer to Att 1-EPBC Referral Supplementary Report-2023, Section 4.3).

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species
No	No	Actitis hypoleucos

Direct impact	Indirect impact	Species
Yes	No	Apus pacificus
No	No	Calidris acuminata
No	No	Calidris ferruginea
No	No	Calidris melanotos
No	No	Charadrius leschenaultii
Yes	No	Cuculus optatus
No	No	Gallinago hardwickii
Yes	No	Hirundapus caudacutus
Yes	No	Monarcha melanopsis
No	No	Motacilla flava
Yes	No	Myiagra cyanoleuca
No	No	Numenius madagascariensis
Yes	No	Rhipidura rufifrons
Yes	No	Symposiachrus trivirgatus

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.5.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Direct impact (removal of 26.5 ha of native vegetation that is habitat) for the Proposed action will impact the following EPBC Act listed migratory species:

- *Cuculus optatus* (Oriental Cuckoo)
- *Apus pacificus* (Fork-tailed Swift)
- *Rhipidura rufifrons* (Rufous Fantail)
- *Monarcha melanopsis* (Black-faced Monarch)
- *Hirundapus caudacutus* (White-throated Needletail)
- *Symposiachrus trivirgatus* (Spectacled Monarch)
- *Myiagra cyanoleuca* (Satin Flycatcher)

Refer to Att 1-EPBC Referral Supplementary Report-2023, Section 5.1 and Appendix B.

4.1.5.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.5.6 Describe why you do not consider this to be a Significant Impact. *

For those migratory species that were considered to have potential to occur within the Disturbance footprint, assessments of significance were prepared, in accordance with the Draft referral guideline for 14 birds listed as migratory species under the EPBC Act (DoE 2015), as presented in Att 1-EPBC Referral Supplementary Report-2023 (Appendix C).

The Proposed action's impact upon all threatened migratory species identified in section 4.1.5.2 is not considered to be significant (refer to Att 1-EPBC Referral Supplementary Report-2023, Appendix C).

4.1.5.7 Do you think your proposed action is a controlled action? *

No

4.1.5.9 Please elaborate why you do not think your proposed action is a controlled action. *

For those migratory species that were considered to have potential to occur within the Disturbance footprint, assessments of significance were prepared, in accordance with the Draft referral guideline for 14 birds listed as migratory species under the EPBC Act (DoE 2015), as presented in Att 1-EPBC Referral Supplementary Report-2023, Appendix C.

The assessments concluded that the Disturbance footprint is unlikely to support an ecologically significant proportion of the populations of the migratory species. Therefore, the Proposed action is unlikely to disrupt the lifecycles of an ecologically significant proportion of the migratory species.

4.1.5.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

The Proposed action involves the extraction of hard-rock resources. Therefore, the consideration of alternate locations and designs of the pit area are limited by resource availability.

The avoidance and mitigation measures explained in Section 4.1.4.10 are also proposed to minimise any potential impacts upon Migratory species listed under the EPBC Act.

4.1.5.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Residual unavoidable impacts of the Proposed action will be calculated in accordance with the NSW *Biodiversity Conservation Act 2016* (BC Act) and the Biodiversity Assessment Method (BAM) (DPIE 2020a). Offsets will be in accordance with the NSW Biodiversity Offset Scheme (BOS). Accordingly, the biodiversity offset strategy for the Proposed action will be developed in consultation with the NSW Department and Planning and Environment (DPE).

If the Proposed action is deemed by the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) to be a controlled action, Boral proposes to use the NSW Assessment Bilateral Agreement (DCCEEW, 2023) to assess the Proposed action at both the State and Commonwealth level. The DCCEEW supports the use of the NSW BOS and the BAM (DPIE, 2020a) as the underpinning methodology for assessment of biodiversity values, including the calculation of biodiversity credit requirements.

(Refer to Att 1-EPBC Referral Supplementary Report-2023, Section 4.3).

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed action does not include any nuclear action, nor does the Project area or Disturbance footprint contain nuclear hazards. The hard rock resource at the Quarry does not have the potential for radioactive properties (there is no granite rock with naturally occurring concentrations of uranium, thorium, or radon).

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed action is not proposed within or near a Commonwealth Marine Area and will not result in any direct or indirect impacts upon a Commonwealth Marine Area.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Great Barrier Reef is approximately 900 km north of the Project area; therefore, the Proposed action will not result in any direct or indirect impacts on the Great Barrier Reef.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed action is not related to coal seam gas development or coal mining and will, therefore, not result in any direct or indirect impacts on water resources in relation to such actions.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Project area is not located on or near Commonwealth Land and will, therefore, not result in any direct or indirect impacts on such places.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Project area is not located near nor is it in relation to a Commonwealth heritage place overseas and will, therefore, not result in any direct or indirect impacts on such places.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

- Threatened Species and Ecological Communities (S18)

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

The Proposed action involves the mining of hard-rock resources. Therefore, the consideration of alternate locations and designs of the pit area are limited by resource availability.

1. Current projections estimate that the ignimbrite that is accessible under the current approval will be depleted by 2025. The existing development approval is currently being modified (Modification 6 to DA 2683_85 – see question 3.1.2) to lower the pit floor of the approved Ignimbrite Pit and access additional resources. This vertical expansion, if approved, will allow for a further 2 years of operation until 2027. Further vertical expansion beyond the 2 years is limited due to:

- ground water interception, and
- engineering constraints associated with the width of the pit (if the pit becomes too narrow, it isn't possible to go any deeper).

With the targeted resource being soon significantly depleted, lateral expansion is critical to ensure ongoing operations at the Quarry.

Alternate expansion locations within the Boral landholding at 139 Italia Road were considered throughout the design process.

The proposed extraction area, within which the lateral extension will occur, is approximately 30.36 ha, extending westward, northward, and eastward from the Quarry's current pit.

Boral has avoided a southern extension option of the ignimbrite pit, to reduce biodiversity impacts (Refer to Att 1-EPBC Referral Supplementary Report-2023, Figure 4.1). The avoidance of this area has resulted in avoidance of 5.7 ha of forest, which is Koala habitat.

Alternate considerations:

Other Boral quarries - the nearest Boral quarry is Peats Ridge. It has less than 10 years of reserve and a lower production rate (800,000 tpa) and could not replace Seaham Quarry in addition to the Central Coast market. The longer distance from Peats Ridge would also increase delivered costs and make Boral less competitive in the Lower Hunter.

Another greenfield quarry in the Lower Hunter - any other greenfield location in the region would be introducing new and increased impacts to the community and environment. A new quarry would involve establishing all quarry infrastructure, not just an extraction area, so would introduce new and additional social and environmental impacts.

Seaham Quarry Project (the Proposed action) - the social and environmental impacts at the Quarry are largely known and understood by the community and regulators. All the existing activities at the Quarry would continue with the only material changes being the pit extension and changes to water management (Disturbance footprint) and operational changes (changes to proposed plant, all within the operational footprint). The areas that interface with the Quarry contain a lower diversity of native species and a higher diversity and cover of exotic plant species, compared to vegetation within the Project area that occurs further away from the existing Quarry operations, making this the most viable option. Extension to the existing Quarry pit as opposed to the construction of a new pit/quarry is the best social and environmental outcome to maintain aggregate supply into the Lower Hunter region.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	11/08/2023	No	High

1.2.6 Commonwealth or state legislation, planning frameworks or policy documents that are relevant to the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Link				

		Biodiversity Assessment Method 2020 https://www.environment.nsw.gov.au/research-and-..	High
#2.	Link	New South Wales bilateral agreement for environmental assessment https://www.dcceew.gov.au/environment/epbc/appro..	High

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 2-Boral Environmental Policy-2022.pdf Boral Environmental Policy and Framework	01/12/2022	No	High

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Link	Port Stephens Local Environmental Plan 2013 https://legislation.nsw.gov.au/view/html/inforce..			High

3.1.2 Existing or proposed uses for the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	10/08/2023		High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	10/08/2023		High
#2.	Link	Biodiversity Assessment Method https://www.environment.nsw.gov.au/research-and-..			High

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	10/08/2023		High

4.1.4.5 (Threatened Species and Ecological Communities) Why you consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	10/08/2023		High
#2.	Link	Matters of National Environmental Significance: Significant Impact Guidelines 1.1 https://www.dcceew.gov.au/sites/default/files/do..			High

4.1.4.10 (Threatened Species and Ecological Communities) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	10/08/2023		High

4.1.4.11 (Threatened Species and Ecological Communities) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	10/08/2023		High
#2.	Link	Biodiversity Assessment Method https://www.environment.nsw.gov.au/research-and-..			High
#3.	Link	New South Wales bilateral agreement for environmental assessment https://www.dcceew.gov.au/environment/epbc/appro..			High

4.1.5.2 (Migratory Species) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	10/08/2023		High

4.1.5.6 (Migratory Species) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	10/08/2023		High
#2.	Link	Referral guideline for 14 birds listed as migratory species under the EPBC Act https://www.dcceew.gov.au/environment/biodiversi..			High

4.1.5.9 (Migratory Species) Why you do not think your proposed action is a controlled action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	10/08/2023		High
#2.	Link	Referral guideline for 14 birds listed as migratory species under the EPBC Act https://www.dcceew.gov.au/environment/biodiversi..			High

4.1.5.11 (Migratory Species) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	10/08/2023		High
#2.	Link	Biodiversity Assessment Method https://www.environment.nsw.gov.au/research-and-..			High
#3.	Link	New South Wales bilateral agreement for environmental assessment https://www.dcceew.gov.au/environment/epbc/appro..			High

4.3.8 Why alternatives for your proposed action were not possible

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf EPBC Referral Supplementary Report	10/08/2023		High

4.3.5 Why an alternative location for your proposed action was not possible

Type	Name	Date	Sensitivity	Confidence
#1. Document	Att 1-EPBC Referral Supplementary Report-2023.pdf.pdf EPBC Referral Supplementary Report	06/06/2023	No	High

4.3.4.9 (Impact and mitigation) How this alternative has different impacts or mitigations from the original proposal relating to listed threatened species, their habitat, or threatened ecological communities

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att 1-EPBC Referral Supplementary Report-2023.pdf.pdf EPBC Referral Supplementary Report	06/06/2023	No	High

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	28141736558
Organisation name	EMM CONSULTING PTY LIMITED
Organisation address	2065 NSW
Representative's name	Madeleine Hunt
Representative's job title	Ecologist
Phone	0421069780
Email	mhunt@emmconsulting.com.au
Address	Level 3, 175 Scott Street, Newcastle NSW 2300

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ By checking this box, I, **Madeleine Hunt of EMM CONSULTING PTY LIMITED**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	51000756507
Organisation name	BORAL RESOURCES (NSW) PTY LTD
Organisation address	2113 NSW
Representative's name	Liam Riordan
Representative's job title	Planning and Approvals Manager (VIC/TAS)

Phone	0431231218
Email	liam.riordan@boral.com.au
Address	251-259 Salmon Street, Port Melbourne, VIC 3207

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ I, **Liam Riordan of BORAL RESOURCES (NSW) PTY LTD**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

☑ Check this box to indicate you have read the referral form. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *

☑ I, **Liam Riordan of BORAL RESOURCES (NSW) PTY LTD**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

☑ I would like to receive notifications and track the referral progress through the EPBC portal. *