



Executive Summary

Introduction

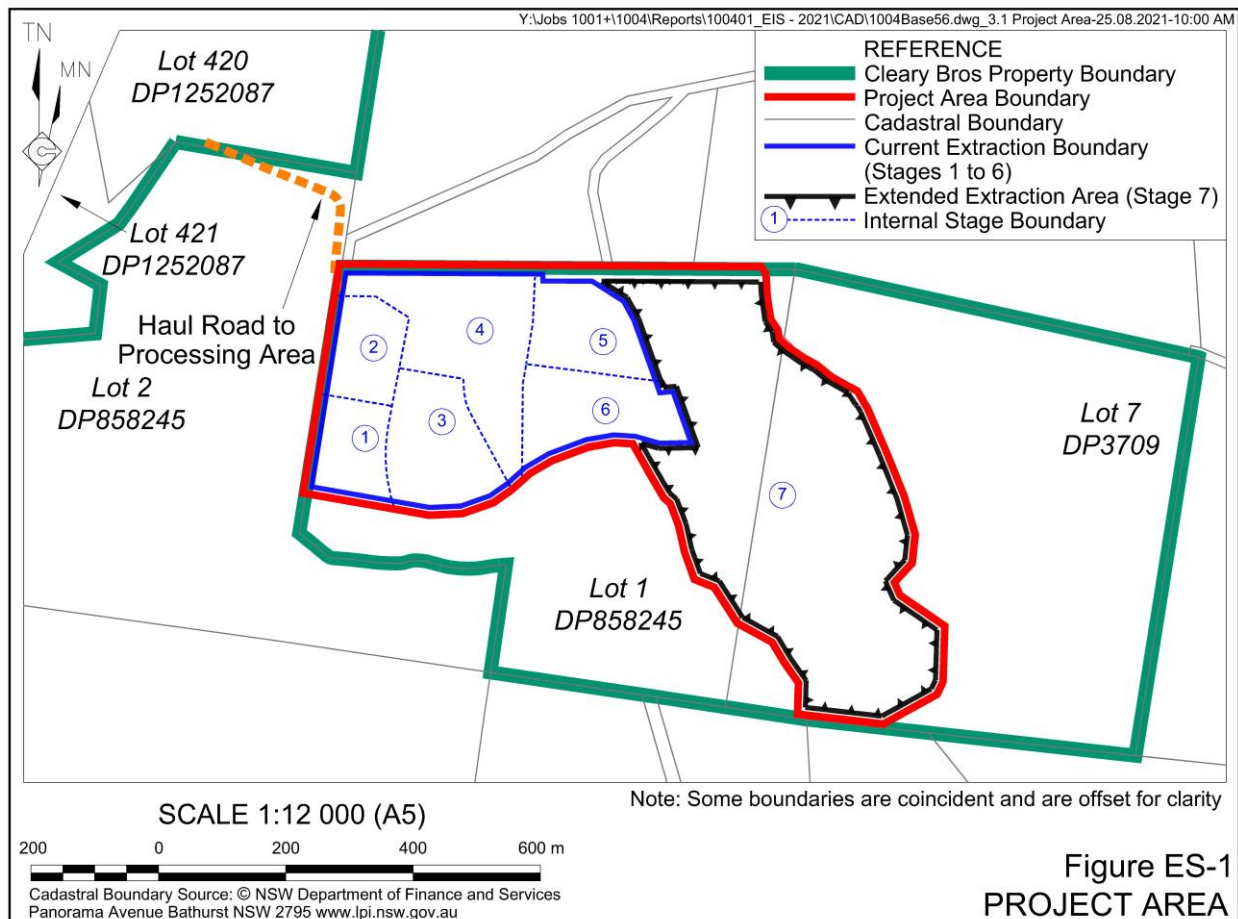
Cleary Bros (Bombo) Pty Ltd (Cleary Bros) proposes to extend the current hard rock extraction area within the Albion Park Quarry (the Quarry) located approximately 20km south-southwest of Wollongong and approximately 4km west of Shellharbour, NSW.

The property on which the Quarry is located covers an area of approximately 140ha of which approximately 54ha is currently disturbed by quarry-related activities. The current extraction area covers Stages 1 to 6, all of which are located wholly within Lot 1 DP858245. The proposed extraction area extension is Stage 7, located immediately east of Stages 1 to 6 and extends onto the adjoining Lot 7 DP3709. Cleary Bros

proposes to continue the extraction of remnant material within Stages 1 to 6 and extend extraction into Stage 7, together with the progressive rehabilitation of all stages (the Project). Collectively, Stages 1 to 7 form the Project Area (see **Figure ES-1**).

The Applicant

Cleary Bros (Bombo) Pty Ltd is a company within the privately-owned Cleary Bros group based in the Illawarra-Shoalhaven Region of NSW. The Cleary Bros Group operates several divisions, including quarrying, earthmoving and transportation, pre-mixed concrete manufacturing and construction. The Cleary Bros Group has expanded and diversified over a century and represents a significant operator in the construction and materials supply industries.





Quarry History

Initial operations at the Quarry were approved in 1963 with initial extraction commencing in Pit 1. Extraction operations commenced within the Beacon Hill Quarry (Pit 2) in 1977 followed by Pit 3, the current extraction area in 2008. The approved Pit 3 encompasses six stages of extraction. Stages 1 to 4 were initially established and Stages 5 and 6 were activated in 2017. Extraction is currently undertaken within Stages 4 to 6 although some raw materials remain in Stage 2.

The current fixed processing plant, office, workshop and product stockpile areas and ancillary infrastructure are located largely within the footprint of Pit 1. Quarry products are transported from the Quarry by highway trucks.

The 1963 approval remains in force and provides the basis for the ongoing material processing within the fixed processing plant and a range of associated activities, including product stockpiling and despatch. These activities apply to the ongoing extraction operations in Stages 1 to 6 and would similarly apply to the extraction in Stage 7.

Objectives

Cleary Bros' objectives in developing and operating the Project are to:

- secure access to a long-term hard rock resource that would provide a range of high quality aggregates, armour rock, and pavement products for use in the Illawarra-Shoalhaven and Greater Sydney Regions;
- continue to produce up to 900 000 tonnes per annum (tpa) of aggregates, armour rock and pavement products and to meet the increasing supply demands of these markets over the next 30 years;

- maximise resource recovery within the defined extended extraction area;
- undertake activities in an environmentally responsible manner to meet all relevant criteria and satisfy reasonable community expectations;
- ensure the Project's contribution to the cumulative impact of the quarries in the Albion Park area is proportionate to the overall impacts of all quarries;
- maintain local employment levels; and
- operate in a cost-efficient manner.

Strategic Context

From a strategic perspective, the Project Area is well located given the following.

- The high quality hard rock resources within the Project Area are located in a defined Mineral Resource Area within the Dunmore-Shellharbour Hills Area. The Quarry is one of four quarries currently operating in the defined Mineral Resources Area.
- The transition area around the defined Mineral Resource Area comprises rural land with a low population density and comparatively few landowners within 1.1km of the Project Area.
- The local and regional community provide both the markets for the Quarry's products and the workforce, suppliers and services required to operate the Quarry.
- The local infrastructure, particularly the local road network, provides an excellent basis for the distribution of the Quarry products.
- The Project Area is well situated in that it is not prone to flooding, landslips, mine subsidence or coastal hazards.



Project Description

Project Area

The Project Area covers Stages 1 to 6 of the current approved extraction area and the proposed Stage 7 extension area (**Figure ES-1**). Stages 1 to 6 occupy an area of approximately 16ha and the adjoining Stage 7 covers an area of approximately 20ha. Stages 1 to 6 are included in the Project Area as a quantity of rock remains to be extracted in those stages and greater efficiencies would be achieved by extracting the remaining rock currently in Stages 4, 5 and 6 in conjunction with Stage 7.

Figure ES-2 displays the layout of the Project Area and the internal stage boundaries with the key components being the northern amenity barrier, the Stage 7a barrier and tree screens, the proposed haul road and the Eastern Rim.

Geology and Resources

The hard rock resource is contained within lava flows in the Bombo Latite, which comprises two flows separated by an interburden layer of volcanic breccia (agglomerate). The latite produces a high-quality aggregate. The agglomerate is used to produce a range of second grade products such as road base, drainage aggregates, and specific pavement materials.

The estimated recoverable quantity of latite and agglomerate within the Project Area is 33 million tonnes.

Extraction Operations

Extraction in Stage 7 would continue as it has in Stages 1 to 6. Rock would be removed by blasting and initially primary crushed and screened before being transported by off-road haul trucks to the fixed processing plant northwest of the Project Area or further in-pit processing. Extraction in Stage 7 would be

undertaken progressively in four substages 7a to 7d and would proceed in a manner that maximises acoustic and visual shielding to sensitive receivers to the north and east. Stage 7 extraction would culminate in the Eastern Rim within Stages 7c and 7d (**Figure ES-2**).

The ongoing extraction rate at the Quarry would retain the current approved maximum annual production level of 900 000tpa. The average annual extraction rate is expected to be approximately 750 000tpa.

Processing Operations

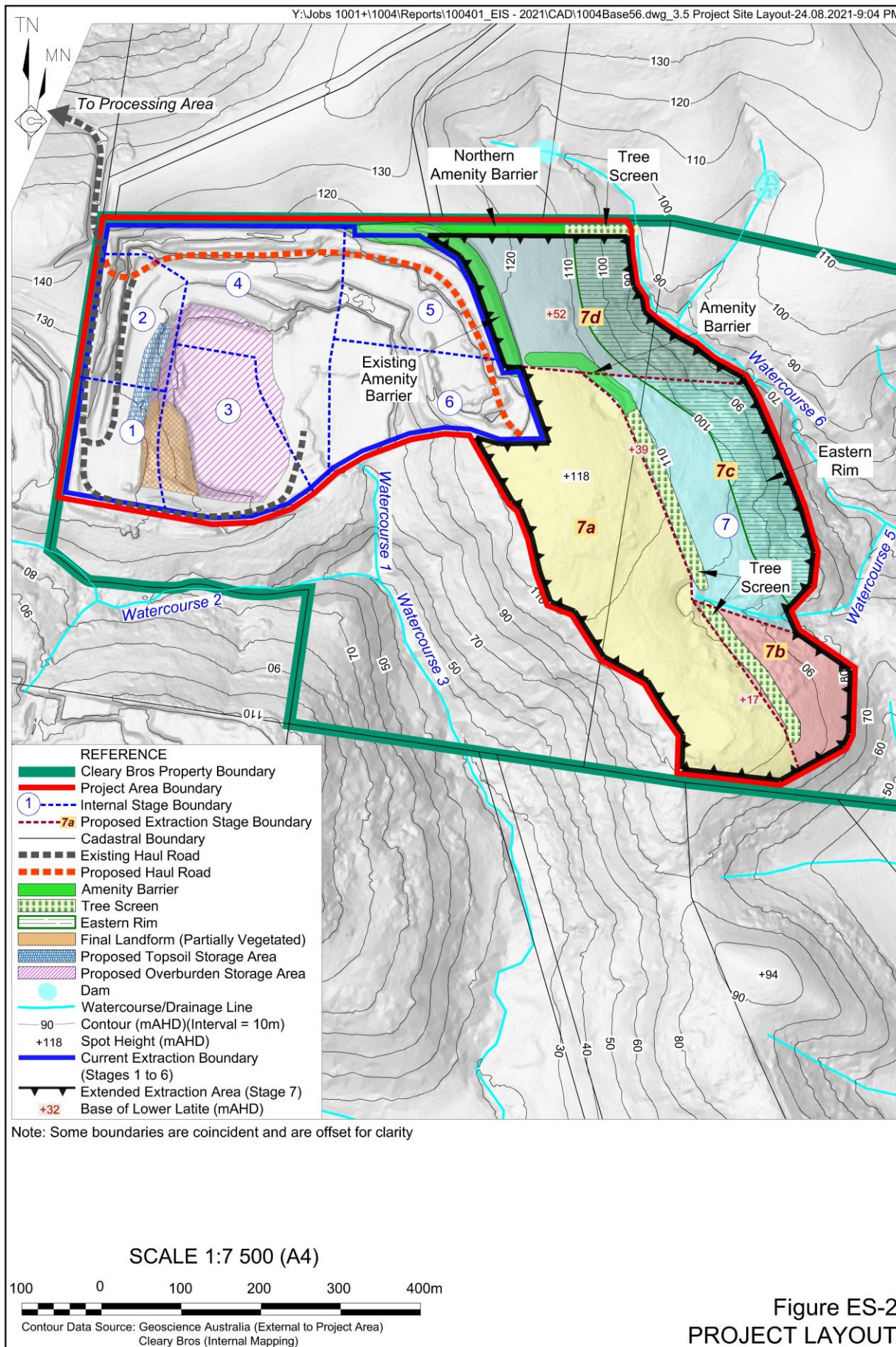
A mobile primary crushing and screening plant would be introduced into the extraction area to crush and screen all blasted rock. The plant would be positioned on the active bench close to each pile of blasted rock and the nearby extraction face to maximise noise attenuation from this activity. The bulk of the primary crushed and screened rock would be transported to the fixed processing plant for further processing.

The current activity involving the campaign use of a smaller secondary crushing and screening plant on the extraction floor would continue.

Transportation

Processed quarry products would continue to be stockpiled adjacent to the fixed processing plant for loading from the product stockpiles and delivery to customers/projects using either Cleary Bros-owned highway trucks, subcontractor trucks, or trucks owned by self-haul customers.

The transportation of quarry products and the importation of VENM for reprocessing would continue to operate under separate approvals.





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Albion Park Quarry Extraction Area Stage 7 Extension

Hours of Operation

The proposed hours of operation within the Project Area would be unchanged from the current hours of operation, namely 7:00am to 5:30pm Monday to Friday and 7:00am to 1:00pm Saturday. However, operations in the Stage 7 Area would be reduced to a maximum of 16 Saturdays per calendar year.

Blasting operations would only be undertaken between 9:00am and 5:00pm, Monday to Friday, or at other times as approved by the EPA. A maximum of one blast would be undertaken per week.

Project Life

The extraction of the defined 33Mt of latite and agglomerate resources within the Project Area and the completion of rehabilitation activities would occur over a period of approximately 45 years, assuming an average extraction rate of 750 000tpa. It is the preference of Cleary Bros that a development consent is granted for the extraction of all recoverable resources within the Project Area, i.e. for a period ending 31 December 2066 i.e. 30 years after the current development consent expires.

In the event development consent is only granted for 30 years, Cleary Bros would, at a future date, request that the development consent be extended for a further 15 years to allow the remaining resource to be fully recovered and the disturbed areas fully rehabilitated.

Final Landform

The final landform would comprise five rehabilitated domains, defined principally by slope, as summarised below.

- Terrace Domain – steep terminal faces and berms within the extraction area.
- Slope Domain – the intermediate zone between the Terrace and Plains Domains.

- Plains Domain – gentle sloping floor of the extraction area.
- Open Water Domain – the final landform would incorporate up to three sumps for water collection, subject to prevailing licencing requirements.
- Foreshore Domain – gently sloping area between the Plains Domain and the Open Water Domain.

The proposed final landform would re-establish the catchment of a pre-extraction drainage within the western section of the Project Area. The eastern section of the Project Area would be internally draining and incorporate retained sumps which would effectively act as dams for stock watering.

The final land uses within the Project Area would comprise agricultural activities on the Slopes and Plains Domains and nature conservation on the Terrace Domain. The Open Water and Foreshore Domains would complement the agricultural activities undertaken within the Project Area. The types of agricultural activities undertaken could include grazing, selected vegetable crops and related activities, which are consistent with the surrounding land uses of grazing in native vegetation or modified pastures.

Approvals Required

The Project requires the following approvals.

- Development Consent as a “State Significant Development” under Clause 7 Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011*.
- Approval from the Commonwealth as a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999*.
- A variation from the Environment Protection Authority for Environment Protection Licence (EPL) 299 to cover the extended footprint of the extraction area.



Upon receipt of the Development Consent for the Project, Cleary Bros would continue to operate the Quarry in conjunction with the following approvals.

- Shellharbour Council 1963 Deed (as amended in 1964) – operation of the fixed processing plant and related activities and components.
- DA614/2006 – use of the haul road linking the Stages 1 to 7 extraction area to the processing area.
- DAM0136-2020 – consolidation of DA 77/6, DA88/67 and DA195/64 for extraction activities in Pit 2, the importation and reprocessing of VENM in Pit 2, modification to front access and carpark, and replacement concrete batching plant.

Upon receipt of the Development Consent for the Project, Cleary Bros intends to undertake the following.

- Surrender Development Consent LEC 10639 of 2005 (MOD 3) for the extraction operations covering Stages 1 to 6.
- Lodge an application with Shellharbour City Council to extend the term of DA 614/2006 for the ongoing use of the haul road between the Project Area and the fixed processing plant.

Engagement

Engagement and consultation have been undertaken to inform the community and government agencies about the Project and to gain an understanding of the issues that need to be considered by Cleary Bros and addressed in the *Environmental Impact Statement*.

Cleary Bros has maintained periodic contact with its fence-line neighbours for many years and has responded to matters and/or complaints raised about its operations.

Cleary Bros has consulted extensively with the owners of “Figtree Hill” during preparation of this document and in recent years. The parties have negotiated an agreement that addresses a range of matters, including air quality, noise, blasting and visual impacts. Under that agreement, the owners have agreed to accept Project-related impacts to the extent identified in this EIS.

The Dunmore/Croom area is recognised by the wider community as a “Quarry Area” in a rural setting. As such, the bulk of the interest in the Project is from the owners/occupiers of the larger land holdings surrounding the Project Area. A community survey also garnered some input from the wider community, with the majority of feedback obtained from local businesses.

Environmental Safeguards and Impacts

Air Quality

Key activities likely to contribute to particulate emissions would include vegetation clearing, blasting, extraction and ongoing processing of materials, material haulage (i.e. wheel-generated emissions) and wind erosion of exposed surfaces. The Quarry’s existing Air Quality Management Plan would be updated and implemented to ensure that particulate matter impacts and greenhouse gas emissions are minimised.

Modelling of predicted air quality impacts at surrounding sensitive receivers indicates that concentrations of total suspended particulates, PM₁₀, PM_{2.5}, deposited dust and nitrogen dioxide generated by the Project would remain below the relevant annual, 24-hour, and 1-hour assessment criteria, as applicable.

The greenhouse gas assessment concluded that the Project would generate 7 712.2t CO₂-equivalent per year of Scope 1 emissions and 396.2t CO₂-equivalent per

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year of Scope 3 emissions. The Scope 1 emissions generated by the Project would represent <0.0059% of total NSW greenhouse gas emissions and <0.00014% of total Australian greenhouse gas emissions per year.

Noise and Blasting

Noise generated by earthmoving equipment and mobile processing equipment during typical extraction and processing operations would be attenuated principally through the design of the Stage 7 area and a range of standard noise mitigation and management measures. With the adoption of these measures, noise levels at all surrounding residences and the Shellharbour Anglican College would satisfy the respective Project Noise Trigger Levels.

When short-term operations are underway, compliance is also predicted at all residences and the Shellharbour Anglican College except those on "Figtree Hill". Cleary Bros and the owners of "Figtree Hill" have negotiated an agreement that addresses noise impacts. Under that agreement, the owners of "Figtree Hill" have agreed to accept Project-related noise impacts to the extent identified in this EIS.

The Project Noise Trigger Levels would not be exceeded at any other residences or receivers throughout the Project life given the considerable intervening distance and/or topography.

Airblast and ground vibration generated during blasting would be controlled through the detailed design of each blast utilising the site laws prepared from monitoring results of previous blasts. Compliance with standard blasting limits for airblast overpressure and ground vibration is predicted for all blasts within the Stage 7 extension at all existing residences including those on the "Figtree Hill" property.

Visibility

The staged design of the extraction operations within Stage 7, together with proposed amenity barriers and tree screens, would result in little visibility of the extraction activities during the first 10 to 15 years of operations. Beyond that time, parts of the upper extraction faces on the western side of Stage 7 would progressively become visible from the "Figtree Hill" property to the north and from elevated areas within Shell Cove West, east of the Princes Highway. However, the west to east progression through Stages 7c and 7d and the adoption of the Eastern Rim would minimise visual impacts during the latter half of the Project life. The establishment of vegetation on the upper western benches and the dark grey exposed extraction faces would effectively minimise contrasts and soften views of the exposed upper sections of the extraction area visible from the "Figtree Hill" residences and Shell Cove West. Cleary Bros and the owners of "Figtree Hill" have negotiated an agreement that addresses visibility impacts. Under that agreement, the owners of "Figtree Hill" have agreed to accept Project-related visibility impacts to the extent identified in this EIS.

Overall, the proposed visual impacts generated by the Project have been assessed to be acceptable given the extent of visual mitigation that would be adopted in the context of the quantity of resources that would be recovered to provide high quality raw materials for the ongoing development of the Illawarra-Shoalhaven and Greater Sydney Regions.

Biodiversity

Cleary Bros has minimised impacts to biodiversity values within the Project Area through minimising the area of higher condition threatened ecological communities disturbed. Residual biodiversity impacts associated with the Project would be managed through a combination of biodiversity offsetting and various



management measures which would be outlined in a Biodiversity Management Plan for the Quarry.

A landscape assessment and targeted biodiversity surveys within the Stage 7 area concluded that the Project would result in the removal of 7.61ha of native vegetation, including areas of the following two threatened ecological communities:

- 4.69ha of 'Whalebone tree – Native Quince dry subtropical rainforest' (PCT 1300); and
- 2.92ha of '*Melaleuca armillaris* Tall Shrubland' (PCT 720).

This constitutes the removal of approximately 0.07% of PCT 1300 and approximately 1.46% of PCT 720 from the total area of these communities. Additionally, the Project would result in the loss of 3.01ha of *Zieria granulata* habitat (including an estimated 2 170 mature plants) and 0.15ha of *Cynanchum elegans* habitat (including one known individual).

Both *Z. granulata* and *C. elegans* are species credit species for the Project, with no other flora or fauna species credit species identified during site surveys. A total of 14 ecosystem credit species were also assumed to be present.

A referral for the Project was lodged with the Commonwealth Department of Agriculture, Water and the Environment, who confirmed that the Project is a controlled action as it is likely to impact on threatened species and communities listed within the *Environment Protection and Biodiversity Conservation Act 2000*.

Cleary Bros intends to offset impacts from the Project by retiring credits based on the like-for-like rules via:

- establishment of a Stewardship Site; and/or

- facilitating the establishment of a Stewardship Site by a third party; and/or
- making a payment into the Biodiversity Conservation Fund calculated using the offset payments calculator.

Aboriginal Heritage

The Project Area is located within the Illawarra Region, which is the traditional land of the Wodi Wodi, a group which spoke a variant of the Dharawal language. Evidence of occupation of the Illawarra Region obtained through analysis of middens at Lake Illawarra indicates Aboriginal occupation of these areas dates back at least 6 000 to 7 000 years. An analysis of Aboriginal sites previously recorded within a 6.5km by 6.5km area centred on the Project Area identified a total of 92 Aboriginal sites, with the majority representing either artefact (64%) or shell (26%) site types.

No Aboriginal sites, potential archaeological deposits, artefacts or features were identified during a survey of the Stage 7 area. The area was assessed as having low scientific and historical value, moderate aesthetic value and high cultural value. Due to the low potential for the presence of Aboriginal sites, in combination with the post-settlement history of disturbance from human activity, it is not anticipated that the Project would impact any Aboriginal heritage values.

Historic Heritage

Heritage items and associated deposits and features within the Belmont Estate in the Stage 7 area contribute to the understanding of local agricultural dairying and domestic cultural practices from the late 19th century to the late 20th century. Construction of the main house within the Belmont Estate in a typical Victorian and Edwardian Style occurred in c1900 (Belmont Main House). An assessment of the historic heritage items

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within the Stage 7 area concluded that Belmont Main House has high archaeological potential, the associated former Bails and Dairy and dry stone walls have moderate archaeological potential and all other items have low archaeological potential. Both Belmont Main House and the former Bails and Dairy were determined to have local significance, whilst all other items hold no heritage significance.

The Project would directly impact the heritage significance of the Belmont Estate through the demolition of Belmont Main House and associated structures. A photographic archival recording of Belmont Main House has been completed in accordance with the relevant guidelines and a full archival recording would be completed prior to demolition. The Quarry's existing Heritage Management Plan would be updated to detail measures including the salvage and reconstruction of dry stone walls and the monitoring of demolition and ground disturbance works within the Stage 7 area.

Soil and Land Capability

Soil stripping and management would be undertaken progressively during the Project life. Topsoil and subsoil would be progressively stripped within each stage and either stockpiled, used to construct amenity barriers, or placed directly on completed landforms for rehabilitation. A soil assessment for Stage 7 identified no significant constraints for the use of these soils for rehabilitation and revegetation purposes. Amelioration and fertilisation of topsoil and subsoil would be undertaken to ensure ideal growing conditions. As a result, the Project would not have a significant impact on soil resources.

The existing land capability of Stage 7 varies between Class III (high capability) in flatter areas to Class VI (low capability) generally in steeper areas. Post extraction, the slopes and plain domains within the final landform would be re-established as Class IV to

Class VI land, suitable for grazing purposes. The other domains, comprising approximately 25% of the Project Area would comprise Class VII and VIII land suitable for nature conservation.

Surface Water

The Project would generate sediment-laden runoff which would be directed to internal sumps within the Project Area. The accumulated water would either be used for dust suppression or tested, and if necessary treated, to ensure that it meets quality criteria nominated in the Quarry's Environment Protection Licence, prior to controlled discharge after rainfall events through the Quarry's licensed discharge point(s). As a result, the Project would not have a significant impact on surface water quality or overall downstream flow.

Groundwater

Modelled groundwater inflow rates indicate increasing inflow as extraction within the Stage 7 area progresses. The current groundwater inflow into Stages 1 to 6 (38kL/day) is predicted to increase to a peak of approximately 187kL/day during Stage 7d. Groundwater drawdown of 2m would extend to an average of 150m from the boundary of Stage 7, with a maximum extension of the 2m drawdown level occurring approximately 250m to the west of Stage 7. Modelled baseflow reductions to adjacent watercourses associated with groundwater level drawdown would peak at <5kL/day during Stage 7d.

Project-related groundwater impacts have been assessed as less than the *NSW Aquifer Interference Policy's* Minimal Impact Considerations. The 2m groundwater level drawdown would not encroach on any registered groundwater bores for water supply and no drawdown impacts would be experienced by high priority groundwater dependent ecosystems. Additionally, the Project is unlikely to lower the groundwater beneficial use category beyond 40m from the



Project Area and the risk of potential groundwater contamination was assessed as low risk.

The Project would require groundwater entitlements for 66ML from the Sydney Basin South Groundwater Source and surface water entitlements for 2ML under the Minnamurra River Management zone of the Illawarra Rivers Water Source. Cleary Bros would secure the necessary entitlements either through a controlled allocation or through the purchase of existing entitlements on the open market.

Traffic and Transportation

The Project would not result in additional Quarry-related traffic on the public road network. Taking into consideration the substantial improvements in the local traffic environment associated with the recently completed Albion Park Rail Bypass and that the vast majority of the Quarry-related transportation would continue to utilise only a 750m section of the East West Link before accessing the State Road network, the Project would have a negligible impact on traffic and transportation.

Economic Impacts

The Economic Assessment determined that the Project would provide net production benefits to NSW and would provide direct economic activity, including jobs, to the local area economy, and indirect economic activity to the local area via both wage and non-wage expenditure.

Social Impacts

The Social Impact Assessment determined that the Project would generate positive impacts within the wider community in terms of continuation of employment, workforce and supplier expenditure and community investment.

The Project Area is suitably located in a rural area where surrounding residents are few in number compared to the more distant suburban areas.

A range of mitigation measures would be adopted to minimise adverse impacts to rural residents and suburban areas, many of which relate to noise, blasting, air quality, visibility and historic heritage. Enhancement of Cleary Bros' social investment and engagement strategies are also proposed.

Evaluation of the Project

The Project has been evaluated and justified through consideration of its potential impacts on the environment and likely benefits to the local and wider community.

An evaluation of the Project has been undertaken by firstly assessing the risks posed to the local environment by the proposed activities following the implementation of all operational controls, safeguards and mitigation measures. The Project has also been evaluated against the principles of ecologically sustainable development.

This evaluation has found that, with the implementation of the proposed operational controls, safeguards and mitigation measures, the Project has addressed each of the sustainable development principles, and on balance, it is concluded that the Project achieves a sustainable outcome for the local and wider environment.

The Project and associated activities have been assessed in terms of a wide range of biophysical, social and economic issues. Potential residual impacts can be justified in terms of the positive economic and social benefits to the local community and Illawarra-Shoalhaven and Greater Sydney Regions.



Conclusion

The Project has been designed to address the matters raised by the community and all levels of government, as well as the principles of ecologically sustainable development. The Project provides for the extraction of the identified hard rock resource and general operation of the Quarry in an environmentally responsible manner.

The Project incorporates a range of design and operational mitigation measures to ensure all relevant statutory goals and criteria, environmental objectives and reasonable community expectations are satisfied. Importantly, the environmental aspects of the Project have been assessed cumulatively with those of the adjoining quarries with the collective impacts assessed to be acceptable.

This document and the range of specialist consultant studies undertaken have identified that the Project should proceed because it would:

- contribute towards satisfying the demand for hard rock products required for the construction industry, particularly within the Illawarra-Shoalhaven and Greater Sydney Regions;
- have a minimal and manageable impact on the biophysical environment;
- satisfy sustainable development principles; and
- result in a net benefit for the local community, the Shellharbour Local Government Area and the State of NSW.



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