



Newman Quarrying Pty Ltd

Proposed Quarry Expansion at Lot 2 DP 1055044,
Tullymorgan-Jackybulbin Road, Mororo
Environmental Impact Statement

May 2015

Submission of an Environmental Impact Statement (EIS)

Prepared under the Environmental Planning and Assessment Act 1979 Section 78A(8)

EIS Prepared by

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In Respect of GHD Pty Ltd

Development Application

Applicant Name: Newman Quarrying Pty Ltd
Applicant address: PO Box 70, Woodburn, 2472
Lot No. DP No. and Address of Land to be Developed: Lot 2 DP 1055044, Tullymorgan-Jackybulbin Road, Mororo, NSW

Environmental Impact Statement

Section 5 of the EIS assesses the potential environmental impact of the proposed development.

Certificate

I certify that I have prepared the contents of this Statement and to the best of my knowledge:

- It has been prepared in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*.
- It contains all available information that is relevant to the environmental assessment of the development to which the statement relates.
- The information contained in this Statement is neither false nor misleading.

Signature:



Name Ben Luffman

Date: 04 May 2015

Glossary of terms	
Acoustic	Relating to hearing, noise and sound.
Ambient	Surrounding, background or existing.
dB(A)	A unit of sound measurement which has its frequency modified by an A-weighted filter so that results are more like the frequency response of the human ear.
Emission	The release of material into the environment (eg dust).
Flora and Fauna	Plants and animals
Hydrology	The science dealing with water on the land or under the surface and its properties, distribution and other characteristics
L _{A10} (Time)	The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.
L _{Aeq} (Time)	Equivalent sound pressure level: the steady sound level that, over a specified period of time, would produce the same energy equivalence as the fluctuating sound level actually occurring.
L _{A90} (Time)	The A-weighted sound pressure level that is exceeded for 90 per cent of the time over which a given sound is measured. This is considered to represent the background noise e.g. L _{A90} (15 min).
Particulate	Small particles, usually occurring in suspension.
Putrescible	Capable of biological decomposition.
State Environmental Planning Policy	A planning instrument made by the Minister for Urban Affairs and Planning that deals with matters of significance for environmental planning in NSW.
Threatened species	Species of flora and fauna that are listed as endangered species or vulnerable species under the <i>Threatened Species Conservation Act 1995</i> .

List of Abbreviations	
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
DA	Development Application
DCP	Development Control Plan
DGB	Densely Graded Base
DGS	Densely Graded Sub-base
DPE	Department of Planning and Environment (formerly Department of Planning and Infrastructure)
ECRTN	Environmental Criteria for Road Traffic Noise
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
ENCM	Environment Noise Control Manual
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPL	Environment Protection Licence
ESD	Ecologically Sustainable Development
FFMP	Flora and Fauna Management Plan
GDE	Groundwater dependant ecosystems
INP	Industrial Noise Policy
KTP	Key threatening process
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LOS	Level of service
mgbs	Meters below ground surface
MHRDC	Maximum Harvestable Rights Dam Capacity
MNES	Matters of National Environmental Significance
NPI	National Pollution Inventory
OEH	NSW Office of Environment and Heritage
PEA	Preliminary Environmental Assessment
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Roads and Maritime	NSW Roads and Maritime Service
SEARs	Secretary Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
SISD	Safe Intersection Sight Distance
TEC	Threatened Ecological Community
tpa	Tonnes per annum
TSC Act	<i>Threatened Species Conservation Act 1995</i>
vtpd	Vehicle trips per day
WIRES	Wildlife Information Rescue and Education Service
WMP	Waste Management Plan

Executive summary

Newman Quarrying Pty Ltd (Newman Quarrying) proposes to expand its operations at Sly's Quarry (the proposal) which is located at Lot 2 DP 1055044, Tullymorgan-Jackybulbin Road, Mororo, NSW. The proposed expansion would include the following:

- expanding the approved sandstone quarry pit by 11.1 hectares
- extracting a total resource of 7 million tonnes
- increasing the maximum extraction rate of sandstone to 500,000 tonnes per year
- importing mulch and topsoil for rehabilitation
- closing and rehabilitating two other existing quarry pits

The primary purpose of the quarry would be to supply substantial quantities of quarry materials required for current and proposed Pacific Highway works, and for supply to local councils and contractors.

Statutory position

The proposed quarry is considered to be State Significant Development (by virtue of Clause 7 of Schedule 1 of *State Environmental Planning Policy (SEPP) (State and Regional Development) 2011* and would require development consent from the Minister of Planning pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). To obtain consent, the development application (DA) needs to be accompanied by this environmental impact statement (EIS).

The provisions of SEPP (*State and Regional Development*) 2011, *Mining Petroleum and Extractive Industries SEPP 2007* and *Clarence Valley Local Environmental Plan 2011* permits the proposed development subject to development consent. An Environmental Protection Licence (EPL) to undertake the scheduled activity is also required under the *Protection of the Environment Operation Act, 1997*, as is a licence under Part 5 of the *Water Act 1912*, for the installation of a groundwater monitoring well.

Under the provisions of the EPBC Act, the proposed development is also being referred to the Department of the Environment in relation to the impacts on the identified *Hibbertia marginata* population.

Consultation

Consultation with a range of government agencies and community stakeholders was undertaken as part of the EIS to both inform the stakeholders of the project and to allow any issues of concern to be raised at an early stage of the planning process and incorporated into the EIS.

The only concern raised by the community was the increase in the number of trucks, the speed of the trucks and the maintenance of Tullymorgan-Jackybulbin Road. These issues have been addressed in the relevant assessments.

Land resources

The area surrounding the quarry is undulating with an elevation ranging from approximately 40 m Australian Height Datum (AHD) (near Tullymorgan-Jackybulbin Road) to approximately 229 m AHD at the peak of Mount Doubleduke, outside the northern boundary of the quarry site.

The geology of the area is 'Kangaroo Creek' sandstone formations. The existing quarry produces both solid and blended crushed sandstone products that can be used in a variety of engineering and construction applications.

The area generally has poor soils of sandy composition, mostly derived from the underlying sandstone. In lower-lying areas soils may be derived from stream deposition.

The area immediately surrounding the quarry is heavily vegetated, with rural-residential properties to the west, south and east.

The proposed expansion of the quarry would change the topography of the site, and may limit future land use options following closure and rehabilitation. It is not possible or practical to avoid the impacts of a quarry on the landform, geology, soils or land use of the site, however, this EIS provides a number of measures that would be implemented to mitigate potential impacts.

Surface and groundwater

The site is located within the Clarence River catchment with unnamed ephemeral drainage lines flowing in a southwest direction to Tabbimoble Creek.

Based on limited data, groundwater at the site is expected to be relatively deep and is unlikely to be intercepted by the proposed quarry.

The proposed quarry expansion could potentially impact on surface water by:

- Altering the local topography and drainage patterns
- Entraining sediment in runoff from disturbed areas
- Increasing runoff volumes
- Contaminating water with chemicals or hydrocarbons from site operations
- Using water during site operations

Detailed mitigation measures have been provided to minimise these potential impacts through:

- Erosion and sedimentation control
- Material storage and management
- Monitoring

Noise

Eleven potential sensitive receivers in the vicinity of the quarry have been identified from aerial imagery, however some of these may not be residential receivers. The nearest identified sensitive receiver is located approximately 1.5 km from the quarry boundary.

Site observations at the monitoring locations indicated that the primary noise sources in the area were:

- Road traffic from the Pacific Highway
- Natural sources such as insect and bird noise and wind noise in foliage

Model results indicate that noise levels generated from quarry operations are predicted to comply with the Industrial Noise Policy daytime noise criterion at all receivers.

The predicted growth in traffic due to quarry operations during peak daily production is expected to comply with the Road Noise Policy criteria.

The estimated ground vibration and airblast levels from blasting suggest that the recommended limits of 5 mm/s and 115 dB(L) would be achieved at a minimum distance of approximately 250

m and 650 m respectively from the blast location. As the nearest sensitive receiver is 1.5 km away, the blasting guidelines should be met at all receivers.

It is proposed the predicted noise and blasting levels be verified through compliance monitoring. If an exceedance is measured, control measures should be negotiated and agreed to by Newman Quarrying and the affected land owners.

Air

Few sensitive air receivers were noted in the vicinity of the quarry, with the nearest residence located approximately 1.5 km from the quarry boundary.

An ambient level of particulate matter up to 10 micrometres in size (PM₁₀) of 15 µ/m³ has been assumed for the area. Predicted results indicate compliance with the 24-hour average PM₁₀ criterion at all receptors for both average and peak production rates.

While dust impacts from quarry operations are not expected to be an issue, some mitigation measures are proposed in order to minimise the potential for impacts.

Ecology

The site consists of two plant communities:

- Blackbutt - bloodwood dry heathy open forest on sandstones of the northern North Coast (NR114)
- Blackbutt - Turpentine dry heathy open forest on sandstones of the lower Clarence of the North Coast (NR123)

The proposal includes the clearing of approximately 10.5 hectares of native vegetation, which comprises 4.23 hectares of Blackbutt - Bloodwood dry heathy open forest and 6.27 hectares of Blackbutt - Turpentine dry heathy open forest.

The following is a summary of the threatened communities and species to be impacted by the proposal:

- No threatened ecological communities
- One threatened flora species - Bordered Guinea Flower (*Hibbertia marginata*), and the possibility of a further two EPBC Act listed flora species.
- No threatened fauna species have been recorded within the study area; however potential habitat for three EPBC Act and 23 TSC Act threatened fauna species exists.
- One EPBC Act migratory bird species (Rainbow Bee-eater) was recorded during surveys and there is also potential habitat for three other migratory species.
- No aquatic threatened biota listed under the FM Act or their habitats are likely to occur in the study area or to be affected by the project.

The mitigation of adverse effects arising from the proposal has been presented according to the hierarchy of avoidance, mitigation and offsetting of impacts.

In regards to offsetting the impacts, it was calculated that a total of 768 ecosystem credits and 17,437 species credits would be required to offset the impacts of the project. A preliminary assessment of a potential biobank site, south of Jackybulbin Road, revealed that the vegetation types and condition are comparable with those identified within the proposed quarry footprint.

Due to the potential impact on the *Hibbertia marginata* population, the proposal has also been referred to the Department of the Environment for approval.

Traffic

Tullymorgan-Jackybulbin Road is a two-way single carriageway road and provides access from the Pacific Highway to Sly's Quarry and other rural/residential properties. The access to the quarry is located approximately 2.6 kilometres west of the Pacific Highway.

There have been no crashes recorded in the vicinity of the quarry access or on Tullymorgan-Jackybulbin Road.

Accounting for the background growth in traffic volumes on the Tullymorgan-Jackybulbin Road and Pacific Highway plus the increase in the volume of truck activity at the quarry, both intersections are likely to be suitable for many years to come.

The sight distances in both directions at both intersections meet and exceed the Austroads Guide to Road Design Part 4A.

The quarry site is remote from any source of vulnerable road user (pedestrians and cyclists) activity.

Based on the findings of the assessment, a Road Safety Audit is considered unnecessary.

To minimise any other potential traffic related impacts of the quarry, it is proposed that the access road be maintained, vehicle numbers minimised and a code of conduct implemented.

Heritage

During the field survey and Aboriginal community consultation process, no Aboriginal objects or Aboriginal places were identified and the site was characterised as highly disturbed.

The possibility of isolated Aboriginal objects being located within the site cannot be totally ruled out. However, it is considered highly unlikely that scientifically or culturally significant Aboriginal cultural deposits remain within the site.

There are no potentially significant historic (non-Indigenous) places or objects identified within the site.

Mitigation measures have been identified in regard to discovery of unexpected heritage items.

Visual amenity

The existing and proposed quarry is visually obscured from the majority of the surrounding area by the topography, viewing distance and surrounding vegetation.

The visual assessment concluded there would not be a significant impact on visual amenity as a result of the proposal.

Waste

The types of waste generated from the proposed quarry would include construction and excavation waste, vegetative matter, packaging materials and liquid wastes. The volumes of solid wastes would be relatively small as most waste would be reused or recycled on site e.g. excavation waste and vegetation waste.

All waste would continue to be managed in accordance with the requirements of the *Waste Avoidance and Resource Recovery Act 2001*, the *Protection of the Environment Operations Act 1997*, the *OEH Waste Classification Guidelines 2009* and the principles of the waste management hierarchy.

Risk and hazards

The existing and proposed quarry site is subject to various risks and hazards, including:

- Contamination and dangerous goods
- Bushfire
- Safety

The risk assessment has found that all risks for the selected factors can be mitigated to achieve a residual ranking of “Low” or “Medium” provided the identified mitigation measures are implemented.

Socio-economic

The socio-economic impacts of the proposed expansion are generally considered to be positive. The proposal would provide a valuable resource to the upgrade of the Pacific Highway which is shown to significantly reduce travel times, crashes and fatalities.

The proposal would also have economic benefits via the provision of direct and indirect employment and contributions to Clarence Valley Council for the improvement of the local road infrastructure.

The potential adverse impacts associated with the expansion, in relation to traffic, noise and air have been assessed and appropriate mitigation measures presented.

Cumulative impacts

At a local scale, the proposed upgrade of the Pacific Highway is the only project known to potentially create cumulative or synergistic impacts with the proposal. Cumulative or synergistic impacts are likely in relation to water, noise, air, ecology, traffic and socio-economic but no additional mitigation measures are considered necessary.

Environmental management

A summary of the mitigation measures are provided as a basis for an Environmental Management Plan (EMP), which would be prepared to provide an overall framework for the management of environmental impacts that could potentially arise from the proposed quarry expansion.

Project justification

Project alternatives were considered as part of the EIS. The reasons for justifying the final proposal are presented having regard to biophysical, economic and social considerations and the principles of ecologically sustainable development (ESD).

Conclusion

The EIS has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity. The proposal, as described in the EIS, best meets the project objectives but would still result in some impacts on biodiversity via vegetation clearing, soil and water via erosion, noise, dust and traffic via the increased vehicle movements. Mitigation measures, as detailed in this EIS, would ameliorate or minimise these expected impacts. The proposal would also provide sustained employment and provide a local source of suitable material for the Pacific Highway upgrade with few impacts. On balance the proposal is considered justified.

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Appendix B Secretary's Environmental Assessment Requirements

Appendix C Surface and Groundwater Assessment

Appendix D Noise Impact Assessment

Appendix E Air Quality Impact Assessment

Appendix F Ecology Assessment

Appendix G Traffic Impact Assessment

Appendix H Aboriginal Cultural Heritage Due Diligence Assessment

1. Introduction

1.1 Project overview

Newman Quarrying Pty Ltd (Newman Quarrying) proposes to expand its operations at Sly's Quarry (the proposal) in Mororo, NSW. The sandstone quarry is located at Lot 2 in DP 1055044, on land with frontage to the Tullymorgan-Jackybulbin Road. The site is approximately 2.6 kilometres west of the Pacific Highway.

The location of the quarry and current quarry sites (A, B and C) are shown in Figure 1-1. The quarry is located in the Clarence Valley Local Government Area (LGA).

The proposed expansion of Sly's Quarry would include the following:

- expanding the approved sandstone quarry pit by 11.1 hectares
- extracting a total resource of 7 million tonnes
- increasing the maximum extraction rate of sandstone to 500,000 tonnes per year
- importing mulch and topsoil for rehabilitation
- closing and rehabilitating the existing quarry pits Site B and Site C

The primary purpose of the quarry would be to supply a portion of the substantial quantity of quarry materials required for current and proposed Pacific Highway works, and for supply to local councils and contractors.

The Secretary's Environmental Assessment Requirements (SEARs) for the project have been issued (application SSD 6624), and this Environmental Impact Statement (EIS) assesses the environmental impacts associated with the project. This EIS is necessary to support an application for the proposed quarry expansion as it constitutes State Significant Development (SSD), as discussed in Section 3.2.2.

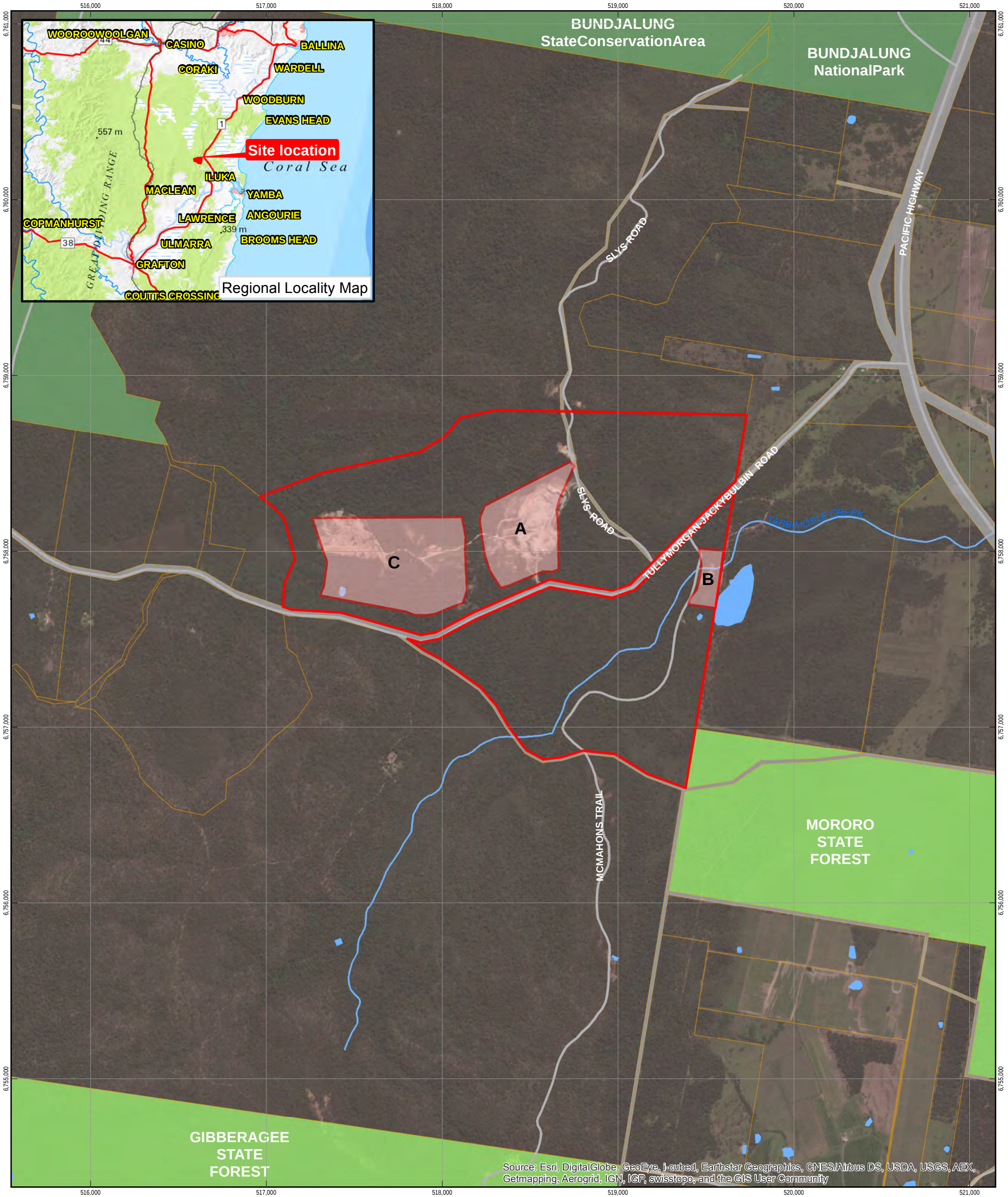
Section 2 provides a detailed description of the project.

1.2 Background

The site has reportedly been used as a quarry since the 1950's. In 1995, Maclean Shire Council (now Clarence Valley Council) granted development consent (1995/128) to the operation according to *State Environmental Planning Policy (SEPP) No. 37 – Continued Mines and Extractive Industries*. A further consent (1997/011) was granted by Maclean Shire Council in 1997.

The approvals were appealed (Appeals 10220, 10274, 10373 and 10377) and heard in the Land and Environment Court in 1998. On 29 January 1999, the court ordered (in part):

2. That Appeal No. 10377 of 1998 be upheld in part and development consent be granted to sand extraction in Sites B and C and rock quarrying in Site A on Lot 26 DP 755629 Jackybulbin Road, Tabbimoble, Maclean Shire, as shown on Exhibit 1 up to 100,000 tonnes per annum maximum extraction rate in each, all subject to and as modified by the Conditions in the attached Schedule.



LEGEND

Current Quarry Areas

Lot 2 DP 1055044

Road

Lot

Waterbody

Natural Parks

Waterways

State Forest

Paper Size A3

0 100 200 400 600 800

Metres

Map Projection: Transverse Mercator

Horizontal Datum: GDA 1994

Grid: GDA 1994 MGA Zone 56

N

Newman Quarrying

Sly's Quarry Environmental Impact Statement

Job Number

Revision

Date

22-17528

A

11 Dec 2014

Site location

Figure 1-1

N:\AU\Coffs Harbour\Projects\22\17528\GIS\Maps\Deliverables\22_17528_2006_Lot2_Site_location.mxd
Level 15, 133 Castlereagh Street Sydney NSW 2000 Australia T 61 2 9239 7100 F 61 2 9239 7199 E sydmall@ghd.com W www.ghd.com
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Data Source: NSW Department of Lands: Cadastre - Jan 2014; Geoscience Australia: 250k Data - Jan 2014; NSW Department of Primary Industry - Jan 2014; ESRI imagery Jan 2014. Created by: qjchung

Following the court decision, Newman Quarrying prepared an Environmental Management Plan (EMP) which was approved by Maclean Shire Council. The EMP outlined, in detail, the proposed operations, including a site plan with designated areas for Sites A, B and C. Sites A, B and C from the EMP are shown on Figure 1-1.

Site A is an area of approximately 22 hectares which contains the sandstone quarry, Site B is a sand extraction operation approximately 5 hectares in area south of Tullymorgan-Jackybulbin Road and Site C is a sand extraction area approximately 44 hectare in area, on the western section of Lot 2 on the northern side of Tullymorgan-Jackybulbin Road.

Site A is currently active and the layout of the area is shown in Figure 1-2. Historic sand extraction has been carried out in Site C and Site B. Site C is still currently active but Site B is no longer active.

Newman Quarrying obtained development consent separately to import and deposit fill at Site C in the areas where sand has been extracted previously. The Development Consent 2004/439 was issued by Clarence Valley Council (CVC) on 8 September 2004. The fill was clean material mainly sourced from Pacific Highway construction sites where it is surplus to requirements or unsuitable for other uses. The filling of the Site C excavation areas is now approximately 80% complete.

A Planning Proposal was submitted to CVC by a third party to change the *Clarence Valley Local Environmental Plan 2011* (CVLEP) 2011 to permit an explosives depot, machinery storage and an ammonium nitrate emulsion mixing plant within the cleared area of Site C. This Planning Proposal has since been withdrawn. No further consideration has therefore been given to the interactions between the proposed quarry expansion and explosives depot.

1.3 EIS scope

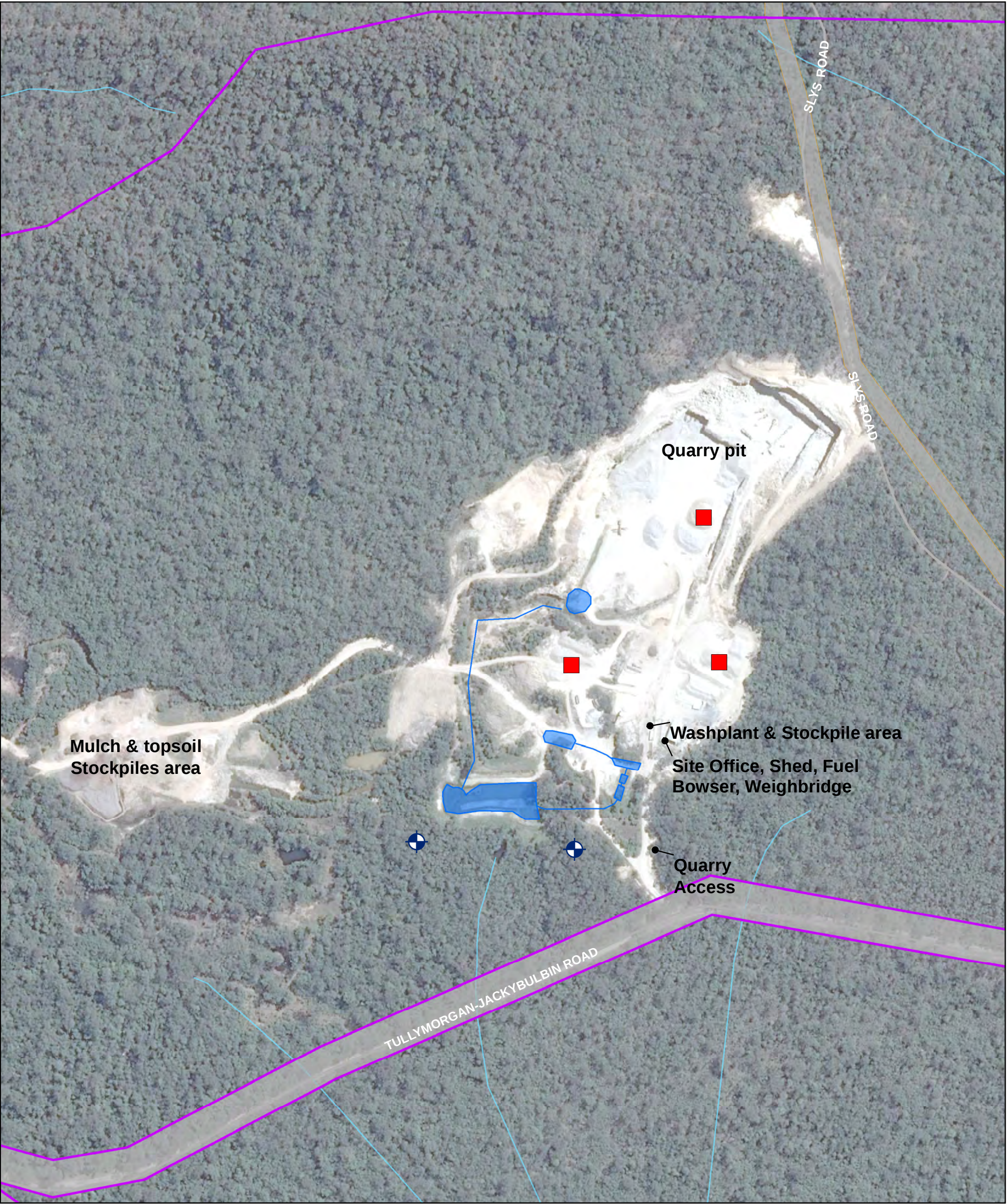
This EIS has been undertaken to assess the significance of the potential environmental impacts associated with expansion of Sly's Quarry. The EIS has been prepared in accordance with the *Environmental Planning and Assessment Act, 1979 (EP&A Act)*, the *Environmental Planning and Assessment Regulation 2000 (EP&A Regulation)* and other relevant legislation.

The proposed quarry is considered to be State Significant Development (by virtue of Clause 7 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* and would require development consent from the Minister of Planning pursuant to Part 4 of the EP&A Act. To obtain consent, the development application (DA) needs to be accompanied by this EIS.

In this instance, the development would be notified and assessed by the NSW Department of Planning and Environment (DPE) and determined by the Minister.

The EIS must comply with the requirements in Clauses 6 and 7 of Schedule 2 of the EP&A Regulation.

The EIS has been prepared to accord with the SEARs developed by the DPE in conjunction with a range of other government agencies. The EIS has been prepared using conservative scenarios for assessments to develop a range of acceptable environmental and social parameters within which the quarry can operate.



LEGEND

Lot 2 DP 1055044

Road

Lot

Groundwater Wells

Stockpiles

Sediment ponds

Waterways

Open Drain

02550100150200

Metres

Paper Size A3

Map Projection: Transverse Mercator

Horizontal Datum: GDA 1994

Grid: GDA 1994 MGA Zone 56

Newman Quarrying

Sly's Quarry Environmental Impact Statement

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22-17528

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18 Feb 2015

Existing Sandstone Quarry Layout

Figure 1-2

N:\AU\Cofts Harbour\Projects\22\17528\GIS\Maps\Deliverables\22_17528_Z007_Lot2_Quarry_Area.mxd
Level 15, 133 Castlereagh Street Sydney NSW 2000 Australia T 61 2 9239 7100 F 61 2 9239 7199 E sydmall@ghd.com W www.ghd.com
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Data Source: NSW Department of Lands: Cadastre - Jan 2014; Geoscience Australia: 250k Data - Jan 2014; NSW Department of Primary Industry - Jan 2014; ESRI imagery Jan 2014. Created by: qjchung

1.4 Disclaimer

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The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

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2. Description of the project

2.1 Project overview

Newman Quarrying proposes to expand a sandstone quarry at Lot 2 DP 1055044, Tullymorgan-Jackybulbin Road, Mororo, known as Sly's Quarry. The project is to expand one portion (Site A) of the approved sandstone quarry by 11.1 hectares, close and rehabilitate two portions (Sites B and C) and increase the extraction rate up to 500,000 tonnes per annum from a total resource of 7 million tonnes. Compared to the currently approved quarry, the net area of the quarry would reduce by 49 hectares and the rate of extraction would increase from 100,000 tonnes per annum.

The primary purpose of the quarry, following the proposed expansion, would be to supply substantial quantities of quarry materials required for current and proposed Pacific Highway works, and for supply to CVC and local contractors. Current Government plans in the region of the quarry are for the Pacific Highway to be upgraded to dual carriageway from Woolgoolga to Ballina which will involve works over a distance of approximately 150 kilometres.

The quarry is located approximately 2.6 kilometres west of the Pacific Highway. The close proximity to the Highway and isolation means that Sly's Quarry presents economic and environmental benefits to supply material for the Pacific Highway upgrade.

Maintaining the current Pacific Highway and the constructing the proposed Pacific Highway upgrade will require a considerable volume of imported quarry materials. Depending on a range of factors, including funding, these works could extend over a period of approximately five years. After completion of the Highway works, the quarry would continue to supply material for maintenance of the Pacific Highway as well as to CVC and private contractors.

To assist with the rehabilitation of Site B, Site C and the proposed quarry expansion, it is also intended to import unsuitable virgin excavated natural material (VENM), excavated natural material (ENM) and mulch from the highway upgrade works.

2.2 Objectives of the project

The objectives of the proposal are to:

- Establish a quarry operation to extract sandstone materials for delivery to highway works projects, local Councils and local industry.
- Operate the quarry so as to minimise any potential environmental impacts and comply with all relevant legislation and guidelines.
- Rehabilitate the extraction area upon exhaustion of the resource to minimise any long term impacts.

2.3 Resource characteristics

A summary of the results from a geotechnical investigation by Hensel Geosciences (2014) suggests the presence of a variety of arenaceous rock types and several, very minor, lithologically distinct interbeds. The sandstone ranges from medium grained to coarse-grained. The former tends to have a pale pinkish colour and is distinctly cross-bedded. The majority of beds are less than 1 m in thickness. In contrast, there are several prominent beds of the coarser sandstone between 2 m and 3 m thick. The general colour of the coarse-grained sandstone is medium to light-grey.

Separating the beds are thin layers of fine sandstone, siltstone and carbonaceous material.

Hensel Geosciences (2014) is confident the sandstone exposed in the existing quarry are continuous into the area of the proposed quarry extension and all the sedimentological characteristics of the exposed sandstone are expected to be present in the areas proposed for extension. This also includes the interbeds. Hensel Geosciences (2014) indicates that the bed sequence (stratigraphy) will not be any different from what is exposed and there is no indication that there has been any structural dislocation of the strata to modify the resource.

The existing quarry produces both solid and blended crushed sandstone products that can be used in a variety of engineering and construction applications. Hensel Geosciences (2014) reports testing has shown that the sandstone is highly siliceous and with only very small amounts of phyllosilicates (mica, illite, chlorite) and carbonaceous material. This virtually categorises the sandstone as inert chemically and physically under most normal natural conditions. It is shown to be well-cemented and quite strong. The proposed extension is very likely to represent a resource that is continuous with the present quarry resource.

2.4 Products and demand

The quarry products sold from the site are all derived from the excavated sandstone. The products include:

- Road base
- Boulders to pebble sized rock
- Sand
- Washed sand

In the past, the quarry's main customers have included:

- NSW Roads and Maritime Services (Roads and Maritime) for major road construction (e.g. recently the Pacific Highway Upgrades at Devils Pulpit and Pimlico).
- John Holland, Lend Lease and Leightons, as Roads and Maritime contractors.
- Property developers for subdivision fill and road base supply.
- CVC for roadbase and rock supply for all road types.
- The National Parks and Wildlife Service (NPWS) for roadbase and rock for retaining walls, flood mitigation, and for riverbank stabilisation works.
- Local contractors and landscapers for all local fill jobs and driveway works.

It is anticipated that the above customers would continue to be the main sources of demand for the proposed expansion, with an emphasis on the Pacific Highway upgrade works. To service these customers in the past, the rate of extraction from the quarry has been between 59,069 and 324,328 tonnes per year as shown in Table 2-1.

Table 2-1 Sly's Quarry past extraction rates

Year	Sales Volume (tonnes)*
1999	113,520
2000	111,604
2001	61,232
2002	83,420
2003	59,069
2004	109,816
2005	114,662
2006	176,185
2007	183,930
2008	108,252
2009	139,522
2010	152,636
2011	287,656
2012	324,328
2013	215,822
2014	80,271

* This is tonnes sold, not extracted. The volume sold may include material stockpiled from previous years. The volumes are reported to CVC and EPA annually.

Excluding 2011 to 2013, when the quarry was supplying the Devils Pulpit Pacific Highway upgrade, the above sale rates represent baseline sales for the quarry. The Pacific Highway upgrade is likely to result in insignificant additional demand, as the 2011 to 2013 years indicate.

The Woolgoolga to Ballina Pacific Highway Upgrade EIS estimates that 4 million tonnes of materials will need to be obtained from local quarries to supply the project. This would comprise an estimated 1.23 million tonnes of road base, about 0.79 million tonnes of sand and about 1.4 million tonnes of aggregate for the construction of drainage structures and pavements, spray sealing works and for the production of concrete and asphalt. In the EIS a further 0.5 to 0.6 million tonnes of earthworks material is also assumed to be required.

The Woolgoolga to Ballina Pacific Highway Upgrade EIS provides a list of the potential quarry sources and their approved extraction limits. In total, the potential quarry sources have an approved extraction limit of 1.4 million tonnes per annum. One million tonnes of this total are located to the north of Ballina and it is unknown if all the quarries listed have material that meet strict RMS specifications. The list includes Sly's Quarry which is one of the only quarries within the region between Woodburn and Harwood (a distance of about 45km).

As it is unlikely that all the quarries listed will have material suitable for the highway upgrade, it is likely there will be a shortfall of suitable quarry material, especially in the region where Sly's Quarry is located. Sly's Quarry consists of material that achieves the RMS specifications and is in a location where there are few alternative sources, it is therefore expected that it will provide a significant source of material for the highway upgrade. Site characteristics

The site is accessed from Tullymorgan-Jackbulbin Road via a gravel access road that travels in a northerly direction. A site office and weighbridge are located approximately 200 m along the access road with a car parking area and maintenance shed located to the east. A generator and fuel storage/fuel bowser are also in this location.

The centre of the existing and proposed quarry is located approximately 150 m north of the site office. This area is also the main stockpiling area, with an additional stockpile area located to the east. The proposed quarry will extend in a northerly and southerly direction from the centre of the current quarry.

The current floor of the quarry is approximately 44 m Australian Height Datum (AHD) with a second level to the east at approximately 58 m AHD. The centre of the existing quarry has active faces to the north, east and west, as shown in the photograph below.



Figure 2-1 Existing Quarry

Another stockpile area is located to the south west of the quarry which also includes a bunded oil storage shed, generator and wash plant.

Stormwater from the quarry is directed to the south into a settling pond and overflows into an open drain that leads to the main sediment basin, located to the south. Runoff from the wash plant travels through a series of small basins located west of the entrance road before entering the main sediment basin. The sediment basin discharges to a wetland to the south.

A plan of the current layout is provided in Figure 1-2.

2.5 Proposed method of extraction

The quarry operation would be carried out in stages and in response to demand. It is therefore difficult to predict exactly how the extraction would progress. In general, the extraction is proposed to move north and east initially, to the extent of the currently approved quarry. The eastern extent of the excavation would remain 10 m from the road reserve located along the eastern boundary and a safety fence would be installed. A 5 m wide buffer would be established around the remaining perimeter of the quarry to cater for access and stormwater controls. The excavation would be to the current floor level of 44 m AHD. Stage 1 would cover an area of 6.9 hectares and extract approximately 2.3 million tonnes. Stage 1 encompasses the area previously approved for a quarry.

Stage 2 would involve expanding the quarry to the north and south and to a depth of 44 m AHD. This would expand the quarry by 5.7 hectares and involve the extraction of approximately 2.8 million tonnes of material. Stage 2 (south) would be exhausted prior to Stage 2 (north) being developed.

Stage 3 would be the final stage and would expand the quarry further north and south. Stage 3 would involve an expansion of 5.4 hectares to a depth of 44 m AHD. This would involve extracting approximately 1.8 million tonnes of material. Stage 3 (south) would be exhausted prior to Stage 3 (north) being developed.

A summary of the area and volumes of each stage are presented in Table 2-2 and the proposed extraction plans are provided in Appendix A. The extraction plans include extraction area, cross sections, long sections, site layout and final levels.

Table 2-2 Quarry area and extraction volumes

Stage	Area (Ha)	Volume (tonnes)
1 (previously approved)	6.9	2,300,000
2 (north)	2.7	1,600,000
2 (south)	3.0	1,200,000
3 (north)	2.2	720,000
3 (south)	3.2	1,040,000
Total	18.0	6,880,000

The extraction of all stages would progress in 10 m by 10 m benches to a final depth of 44 m AHD.

Following extraction, the material would be crushed, screened and where necessary blended with other materials from the quarry, or material imported to the quarry. The materials would be stockpiled on the quarry floor in numbered stockpiles of approximately 4,000 tonnes each. Samples from each stockpile would be analysed for compliance with Roads and Maritime specifications before being transported offsite. This process takes approximately 20 days, per stockpile.

The quarry would operate as efficiently and effectively as possible to maximise the returns of the investment to the operator. It is anticipated that none of the extracted material would be wasted, with the material either sold in its raw state or blended with other products to generate a suitable product for the market. The proposed sequence of operations for each stage would generally be:

- Establish the sediment and erosion control measures and other environmental safeguards.
- Clear vegetation, if necessary. The bulk of cleared vegetative wastes would be piled in a suitable location, clear of adjacent vegetated areas and mulched for future revegetation works.
- Strip and stockpile topsoil and protect it against erosion for use in revegetation works.
- Excavate the weathered rock material, where possible. The deeper layers would be excavated in a similar manner but would also include blasting. Blasting is anticipated to be carried out at a frequency of between two blasts per month to one blast per year, depending on demand and the material encountered. The blasting would be undertaken by a specialist contractor in accordance with regulatory requirements.
- Rock hammer where required, to break large rocks into smaller pieces.
- Crush the rock using an excavator and a jaw crusher. The crusher produces an output of various sizes of fill or aggregate which are separated by a screening machine into various piles based on size. Sand is also produced in this process. The crusher and screener are moved around the quarry floor as necessary to be close to the quarry face and accumulated, excavated stone.
- Load the material directly from the stockpile onto trucks for removal from site.

- Continued excavation, as described above, within each stage until it reaches the ultimate depth of 44 m AHD. During the excavation, 10 m high by 10 m wide benches are established at the quarry face. At the top of each bench, a safety bund/wall is constructed to prevent people or machinery falling over the bench. The benches and quarry floor would be graded to the sediment basin located in the south-western end of the quarry area.
- Rehabilitation once the extraction is complete. Topsoil would be respread on the disturbed areas and revegetated, where possible. The established erosion and water control measures would be maintained until the rehabilitated surface is adequately stabilised.
- Other details relating to quarry operations include:
 - If there is a special order for large boulders, for example for breakwater or river or sea wall repair or construction, these are set aside and transported as such.
 - Occasionally, in order to comply with Roads and Maritime specifications, materials won from the quarry would be blended with other materials won from the quarry, or with imported materials (e.g., sand, clay), prior to being stockpiled on the floor of the quarry.
 - Some sand is transported to the onsite wash plant for processing.

A detailed list of equipment to be used in the operation is provided in Section 2.9 (type of machinery) below.

2.5.1 Imported materials

As outlined above, following the extraction of the raw material from the quarry and screening, additional material may be required for blending to satisfy client specifications. This material may need to be imported to the quarry and could include rock, sand, clay, topsoil or landscaping products. The quantity of this material would be dependent upon the material's end use and is difficult to predict. It is likely that some of the blending materials would be stockpiled on site.

To rehabilitate Area B, Area C and the proposed quarry, topsoil and mulch would be imported to site from the Pacific Highway upgrade works. The topsoil would consist of VENM or ENM that is of an unsuitable quality for use on the highway and the mulch would be from the clearing of native vegetation during highway works. The volumes of topsoil and mulch to be imported and stored onsite are presently unknown but is estimated to be in the order of:

- Topsoil - 10,000 tonnes per year
- Mulch – 5,000 m³ per year

The blending material, topsoil and mulch would be brought to site via trucks returning from their delivery of quarried materials and stored in the same location where it is currently stored, as shown on Figure 1-2. The area would have appropriate sediment erosion controls and tannin management measures installed and maintained.

2.6 Proposed extraction rate and project life

2.6.1 Extraction rate

It is difficult to accurately estimate the annual extraction rate of materials from the quarry in order to service the demand from the Pacific Highway upgrade works because detailed design has not been completed. It may be necessary to extract and process up to 500,000 tonnes per annum although this rate of extraction is expected to be uncommon. It is more likely that the annual extraction rate during the upgrade of the Pacific Highway would be around 250,000 to

300,000 tonnes per annum. After the Highway upgrade is complete, the annual extraction rate is anticipated to reduce to about 100,000 to 150,000 tonnes per annum.

Extraction rates would also be influenced significantly by the type of product in demand. This is because general fill and select materials can be produced at up to four times the rate of aggregates. The various stages of road projects would also influence product needs.

Based on the assessment of the underpinning demand, and allowing for downtime from wet weather etc (about 40%), it is realistic to project a maximum daily extraction and haul rate of about 4,000 tonnes with an average daily win and haul of about 1,500 tonnes. At the other extreme, there will be periods when no materials are extracted or transported from the site. The average daily win and haul rate would reduce significantly following the completion of the highway upgrade.

2.6.2 Project life

Estimated quarry reserves are in the order of 7.4 million tonnes. If extraction was carried out at a rate of 500,000 tonnes per annum, the site would have an extractive life of about 15 years. As mentioned above, it is likely that demand will be high during the current highway upgrade works (about 5 years) and then slow down, resulting in the life of the extraction operation extending to 30 to 40 years.

The life of the quarry and the annual extraction rate are dependent upon the following:

- the timing of Government funding for the Pacific Highway upgrade projects.
- the quantity of materials needed to satisfy that upgrade, and the timeframe within which those materials are needed.
- the total quantity of materials available from the quarry.

2.7 Hours of operation

The hours of operation would depend on demand with some periods of high activity and other times when activity is limited to the occasional loading of haulage trucks. The proposed hours of operation are:

- Weekdays – 6:30am - 6.00pm
- Saturdays – 6:30am - 4.00pm
- Sundays or public holidays - No work

Excavation, crushing or loading would not commence until after 7am. Blasting would only occur on weekdays between the hours of 10am and 4pm.

2.8 Type of machinery

Table 2-3 identifies the items of plant and equipment that are necessary for the operation of the quarry.

Table 2-3 Plant and equipment

Type	Typical Make/Model	Approx. Number	Typical Frequency of use	Description
Excavators	Komatsu pc350 – 8	2	12- 40hrs/ week	Excavating material and stockpiling
	Komatsu pc710-5	1		Clearing and grubbing of vegetation and stripping of topsoil
Screen	Sandvik qe440	1	20 - 40hrs/ week	Aggregate/gravel production and overburden screening
	Sandvik qa340	1		
Front-end Loader	Komatsu wa400-3	1	10hrs/week	Loading material onto the haul trucks and stockpiling material within the pit floor
	Komatsu wa470-3	1	30hrs/week	
	Kawasaki 90zv	1	45hrs/week	
Crusher	McCloskey j50	1	20 - 40hrs/ week	Crushing rock main jaw crusher
	Komatsu br380jg-1	1		Crushing rock spare jaw crusher
Haul Trucks	Truck and dog Contractors	1 Up to 125/day	45hrs/week Up to 125/day	Delivery of materials to customers and stockpiling in pit if needed and carting unsuitable to rehabilitation areas.
Water Cart	Isuzu	1	10hrs/week	Water haul roads and stockpiles
Water Pump	Honda	3	10hrs/week	Dewater excavation/basin and to fill watercart from standpipe
				Water stockpiles and put moisture in products
Generator	Cummins	1	5hrs/week	Provide electricity to washplant and dam pump
	Able	1	9hrs/day	
Hand tools	Various	5	2hrs/week	General activities maintaining plant

It is anticipated that not all of the equipment listed above would be operational on-site at any one time.

2.9 Employment

Currently there are three employees at the existing quarry. If approved, the quarry is anticipated to require a further five full time employees during periods of maximum extraction. Haulage of the material would also provide employment for truck drivers. Haulage trucks would be engaged and operated by contractors external to the quarry operations.

Additional off site employment would also be generated, in the maintenance and support services for equipment and machinery.

2.10 Access and traffic volumes

The majority of traffic to and from the quarry would access the site from the Pacific Highway and Tullymorgan-Jackybulbin Road via an existing, formed gravel access road that runs to the quarry pit. The layout of the quarry provides a loop that allows, trucks and machinery to enter the quarry, load and exit, all while travelling in a forward direction.

Less than 10 deliveries per year would be to the west of the quarry along Tullymorgan-Jackybulbin Road.

2.10.1 Traffic generation

Workforce traffic

During operation it is likely that there would be a maximum of twelve construction workers or plant operators on the site at any one time. This would yield a daily workforce traffic generation in the order of 24 vehicle trips per day (vtpd). It is assumed the majority of the workforce would arrive between 6:30 am and 7:30 am and depart generally between 3:00 pm and 6:30 pm.

Heavy vehicle traffic

Truck and dog trailer combinations have a capacity of about 32 tonnes. At an average daily production, which would generate a win and haul rate of approximately 1,500 tonnes, the quarry is expected to generate about 50 truck and dog loads or 100 truck movements per day. At its peak, the quarry is expected to win and haul about 4,000 tonnes per day which would involve about 125 truck and dog loads or 250 truck movements per day. When the quarry is not in operation, no truck movements would be generated by the quarry.

Once the Pacific Highway upgrade is complete, the demand for quarried material is expected to decrease, as would the number of truck movements. It is anticipated that no more than 150,000 tonnes annually would be won and hauled from the quarry, which would generate, on average, about 750 tonnes per day, over a 200 day working year. This would result in about 25 truck and dog loads or 50 truck movements per day. However, there is no average requirement for materials hence truck numbers may exceed this number for short periods and at other times, no trucks would be operating.

2.11 Site facilities

The site currently consists of a small site office, machinery shed, bunded oil shed, weighbridge, 12,000 L TransTank fuel bowser and pump-out toilet. Water for the site office and amenities is supplied via water tanks and electricity via a generator. No addition or alteration to the existing facilities is proposed as part of this application.

The existing sediment basins would continue to treat stormwater runoff and provide water for dust control, crusher sprinklers and screen. Any excess water would be treated, as required by the Environmental Protection Licence, prior to discharge to the wetland. No water would be extracted from the ephemeral waterways traversing the site for any reason in respect of the operation of the quarry.

A plan of the current layout is provided in Appendix A.



Figure 2-2 Machinery Shed

2.12 Rehabilitation

A rehabilitation plan has been developed and is provided in Appendix A. The rehabilitation plan aims to improve the environmental conditions of the site after quarrying activities have ceased. The proposed approach to the rehabilitation of the extraction area includes:

- Fencing the perimeter of the final contoured (benched) quarry
- Ripping the surface to a depth of 250 mm to key in topsoil
- Spreading the topsoil stripped from the site prior to the quarry operations commencing to form a minimum 100 mm deep layer
- Hydromulching or hand seeding and mulching with a mix of natives and sterile cover crop
- Maintaining sediment and erosion controls until the site is stable

More details on planting, species, maintenance and timing are provided in the Rehabilitation Plan in Appendix A.

In addition to the rehabilitation of the proposed quarry expansion area, Area B and Area C would be rehabilitated if this proposal is approved. The rehabilitation of Area B and Area C would be done in accordance with the applicable approval. Also, 140 hectares of the site have been reserved to offset the ecological impacts of the current proposal, according to the BioBanking methodology (refer to Section 5.5 for more information).

2.13 Capital investment

No major new capital investment in infrastructure, machinery or equipment is required to commence the proposed development. The quarry output can be increased substantially with existing machinery and equipment, which will be replaced and upgraded from time to time as necessary. There is no “construction phase” as the proposal is for the expansion of an existing quarry and new site works would be implemented as output increases. However, site works for mitigation measures are estimated at this stage to require an investment cost of around \$300,000.

3. Statutory legislation

The SEAR's require an assessment of how the EIS has considered the relevant planning, land use and development matters (including relevant strategic matters). This chapter outlines the statutory framework applicable to the project at the state, Commonwealth, regional and local levels. It details the relevant legislation and planning policies that have been addressed in the preparation of this EIS.

3.1 Commonwealth legislation

3.1.1 Environmental Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) prescribes the Commonwealth's role in environmental assessment, biodiversity conservation and the management of protected areas and species, populations and communities, and heritage items. Under the EPBC Act, the approval of the Commonwealth Minister for the Environment is required for the following controlled actions:

- An action which has, would have, or is likely to have a significant impact on matters of national environmental significance, these being:
 - The World Heritage values of a declared World Heritage property
 - The National Heritage values of a listed National Heritage place
 - The Great Barrier Reef Marine Park
 - The ecological character of a declared Ramsar wetland of international importance
 - Listed threatened species and ecological communities
 - Listed migratory species
 - The Commonwealth marine environment
 - Nuclear actions
 - A water resource, in relation to coal seam gas development and large coal mining development
- An action by the Commonwealth or a Commonwealth agency which has, would have, or is likely to have a significant impact on the environment.
- An action which has, would have or is likely to have a significant impact on the environment of Commonwealth land, no matter where it is to be carried out.

Under section 68(1) of the EPBC Act, 'a person proposing to take an action that the person thinks may be or is a controlled action must refer the proposal to the Minister for the Minister's decision whether or not the action is a controlled action.'

In regards to EPBC listed threatened communities and species at the site, there are:

- No threatened ecological communities
- One threatened flora species (Bordered Guinea Flower (*Hibbertia marginata*) within the study area and the possibility that a further two flora species may occur.
- No threatened fauna species have been recorded within the study area; however potential habitat for three threatened fauna species exists.
- One migratory bird species (Rainbow Bee-eater) was recorded during surveys and there is also potential habitat for four other migratory species.

Under the provisions of the EPBC Act, the proposed development is being referred to the Department of the Environment in relation to the impacts on the identified *Hibbertia marginata* population. Other potential impacts on EPBC listed species have been addressed through the FBA and its associated BioBanking assessment.

Under the environmental assessment provisions of the EPBC Act, the following matters of national environmental significance (MNES) and impacts on Commonwealth land are required to be considered to assist in determining whether the project should be referred to the Department of the Environment.

Factor	Impact
a. <i>Any impact on a World Heritage property?</i> The site is not located near any World Heritage areas.	Nil
b. <i>Any impact on a National Heritage place?</i> The project would not have any impact on a National Heritage place.	Nil
c. <i>Any impact on a wetland of international importance?</i> The project would not have any impact on a wetland of international importance.	Nil
d. <i>Any impact on a listed threatened species or communities?</i> The project contains known or potential habitat for three threatened flora species, three threatened fauna species and four migratory bird species listed under the EPBC Act. It is proposed that the proposal be referred to the Federal Minister for the Environment for approval under the EPBC Act, based on the potential to impact <i>Hibbertia marginata</i>. Other potential impacts on EPBC listed species have been addressed through the FBA and its associated BioBanking assessment.	Medium
e. <i>Any impacts on listed migratory species?</i> The project would not impact on any Commonwealth listed migratory species.	Nil
f. <i>Any impact on a Commonwealth marine area?</i> The project would not impact on a Commonwealth marine area.	Nil
g. <i>Does the Proposal involve a nuclear action (including uranium mining)?</i> The project does not involve a nuclear action.	Nil
h. <i>A water resource, in relation to coal seam gas development and large coal mining development</i> The proposal is not associated with coal seam gas or large coal mining development, nor would it have a significant impact on any water resource.	NA
i. <i>Additionally, any impact (direct or indirect) on Commonwealth land?</i> No Commonwealth land would be impacted by the project.	Nil

3.2 State legislation and policies

3.2.1 Environmental Planning and Assessment Act

All development in NSW is assessed in accordance with the provisions of the EP&A Act and the EP&A Regulation. The EP&A Act institutes a system for environmental planning and assessment, including approvals and environmental impact assessment requirements for proposed developments. Implementation of the EP&A Act is the responsibility of the Minister for Planning, statutory authorities and local councils.

The EP&A Act contains three parts that impose requirements for planning approval. These are generally as follows:

- Part 4 provides for control of “development” that requires development consent from the local councils, a regional planning panel or the state government.
- Part 5 provides for control of ‘activities’ that do not require approval or development consent under Part 4.
- Part 5.1 provides for control of State Significant Infrastructure.

The EIS must comply with the requirements in Clauses 6 and 7 of Schedule 2 of the EP&A Regulation.

For the purposes of the EP&A Act, development is classified as State Significant Development (SSD) where:

- It is declared to be SSD by the *State Environmental Planning Policy (State and Regional Development) 2011* (the SRD SEPP).
- It is otherwise called in by the Minister.

The proposed quarry expansion will require development consent from the Minister of Planning pursuant to Part 4 of the EP&A Act and constitutes SSD (see Section 3.2.2 for more information) as it meets criteria concerning scale or impacts such that the development application is required to be assessed by DPE and determined by the Minister. The SEARs for the project have been issued (application SSD 6624) and are contained in Appendix B.

To obtain consent, the development application needs to be accompanied by this EIS.

The need or otherwise for development consent is set out in environmental planning instruments including State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs) which are discussed below.

3.2.2 State Environmental Planning Policy State and Regional Development 2011

The aim of SRD SEPP is to identify development that is SSD or ‘State Significant Infrastructure’ (SSI) and to confer functions on joint regional planning panels to determine development applications.

Part 2 of the SRD SEPP declares development to be SSD if:

- By operation of another environmental planning instrument, it is permissible with development consent.
- It is also included in Schedule 1 or 2 of the SRD SEPP.

The proposed development is not complying development such as to exclude it from being SSD. Also the proposed development is not to be carried out as part of other development that is SSD.

Part 2 of the SRD SEPP (first dot point), and the assessment in Section 3.2.3 below, confirms that extractive industries are permissible with consent on the subject land.

Schedule 1 of the SRD SEPP identifies classes of development which are SSD, based on thresholds such as capital investment, location or some quantifiable criteria. The proposed quarry is therefore considered to be SSD (by virtue of Clause 7 of Schedule 1 of SRD):

Extractive industries

(1) Development for the purpose of extractive industry that:

- (a) extracts more than 500,000 tonnes of extractive materials per year, or*
- (b) extracts from a total resource (the subject of the development application) of more than 5 million tonnes, or*
- (c) extracts from an environmentally sensitive area of State significance.*

(2) Subclause (1) (c) does not apply to extraction:

- (a) by a public authority in maintenance dredging of a tidal waterway, or*
- (b) in maintenance dredging of oyster lease areas, or adjacent areas, in Wallis Lake.*

(3) Development for the purpose of extractive industry related works (including processing plants, water management systems, or facilities for storage, loading or transporting any construction material or waste material) that:

- (a) is ancillary to or an extension of another State significant development project, or*
- (b) has a capital investment value of more than \$30 million.*

(4) This clause does not apply to development for the purpose of extractive industry or extractive industry related works that is part of a single proposed development if any other part of the development is State significant infrastructure.

In respect of these criteria, the proposed sandstone quarry including its expansion:

- Will have a maximum extraction rate of 500,000 tonnes per year.
- Extracts from a total resource of more than 5 million tonnes.
- Is not concerned with dredging as referred to in Clause 7 (2).
- It is not concerned solely with extractive industry related works as referred to in Clause 7 (3).
- It is not part of any other development that is State significant infrastructure

3.2.3 State Environmental Planning Policy Mining Petroleum and Extractive Industries 2007

The aims of the *Mining Petroleum and Extractive Industries SEPP 2007* (MPEI SEPP), in recognition of the importance to New South Wales of mining, petroleum production and extractive industries, are:

- (a) to provide for the proper management and development of mineral, petroleum and extractive material resources for the purpose of promoting the social and economic welfare of the State,*
- (b) to facilitate the orderly and economic use and development of land containing mineral, petroleum and extractive material resources, and*

(c) to establish appropriate planning controls to encourage ecologically sustainable development through the environmental assessment, and sustainable management, of development of mineral, petroleum and extractive material resources.

Under the MPEI SEPP, extractive industries may be carried out with consent on any land for which agriculture or industry is permitted with or without consent. The proposed site is predominantly zoned RU2 Rural Landscape under CVLEP 2011, where 'extensive agriculture' is permissible without consent.

All of the existing sandstone quarry operation and the area of its proposed expansion are located in the RU2 zone.

Extractive industries, as defined in the dictionary of the CVLEP 2011, are not listed in the Land Use Table for the RU2 zone. However, the permissibility of the proposed development is determined by the MPEI SEPP which prevails over the LEP. Refer to Sections 3.2.2 and 3.3.1 for more discussion on permissibility.

A sandstone quarry falls within the definition of extractive industry in the MPEI SEPP as being:

*"... the winning or removal of extractive materials (otherwise than from a mine) by methods such as excavating, dredging, or **quarrying**, including the storing, stockpiling or processing of extractive materials by methods such as recycling, washing, crushing, sawing or separating, but does not include:*

(a) turf farming, or

(b) tunnelling for the purpose of an approved infrastructure development, or

(c) cut and fill operations, or the digging of foundations, ancillary to approved development, or

(d) the creation of a farm dam if the material extracted in the creation of the dam is used on site and not removed from the site."

Part 2 Permissible development of the MPEI SEPP provides in Clause 7(3):

"(3) Extractive industry

Development for any of the following purposes may be carried out with development consent:

*(a) extractive industry on land on which development for the purposes of **agriculture** or industry may be carried out (with or without development consent),*

(b) extractive industry in any part of a waterway, an estuary in the coastal zone or coastal waters of the State that is not in an environmental conservation zone."

On this basis the MPEI SEPP permits extractive industries with development consent on the land in the RU2 zone.

The MPEI SEPP establishes specific requirements for the assessment of development permissible under the SEPP. These include (in this case with respect to an extractive industry):

- Consideration of the compatibility of the proposal with the existing uses and approved uses of land in the vicinity, potential impacts on preferred land uses in the vicinity, a comparison of the public benefits of these land uses with the proposal, and measures to avoid or minimize incompatibility.
- Consideration of conditions to be imposed on consents to ensure extractive industries are carried out in an environmentally responsible manner in respect of water resources, biodiversity and greenhouse gas emissions.
- Resource recovery aspects of the proposed extractive industry.

- The transport impacts of the proposal, including impacts and management of truck movements on public roads, taking into account advice from the Roads and Maritime.
- The need for conditions concerning rehabilitation

This EIS has been prepared to support a DA and includes an assessment of all matters for consideration prescribed within MPEI SEPP.

3.2.4 State Environmental Planning Policy (Rural Lands) 2008

The aims of the *Rural Lands SEPP* are as follows:

- to facilitate the orderly and economic use and development of rural lands for rural and related purposes*
- to identify the Rural Planning Principles and the Rural Subdivision Principles so as to assist in the proper management, development and protection of rural lands for the purpose of promoting the social, economic and environmental welfare of the State*
- to implement measures designed to reduce land use conflicts*
- to identify State significant agricultural land for the purpose of ensuring the ongoing viability of agriculture on that land, having regard to social, economic and environmental considerations*
- to amend provisions of other environmental planning instruments relating to concessional lots in rural subdivisions*

The project involves the expansion of a quarry operation that is on land currently zoned RU2 Rural Landscape under the CVLEP 2011. The proposed extension area is vegetated and has limited agricultural value (as discussed in Section 5.1). This is supported by the Mid North Coast Regional Farmland Mapping project 2008, which maps the site as “Other Rural Land”.

3.2.5 State Environmental Planning Policy 33 – Hazardous and Offensive Development

Clause 3 of the *Hazardous and Offensive Development SEPP* defines a ‘Potentially Hazardous Industry’ as:

“a development for the purposes of any industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would pose a significant risk in relation to the locality:

- to human health, life or property, or*
- to the biophysical environment, and includes a hazardous industry and a hazardous storage establishment.*

Clause 3 of the SEPP defines a ‘Potentially Offensive Industry’ as:

potentially offensive industry means a development for the purposes of an industry which, if the development were to operate without employing any measures (including, for example, isolation from existing or likely future development on other land) to reduce or minimise its impact in the locality or on the existing or likely future development on other land, would emit a polluting discharge (including for example, noise) in a manner which would have a significant adverse impact in the locality or on the existing or likely future development on other land, and includes an offensive industry and an offensive storage establishment.

The very nature of extractive industries suggests there is the potential for such uses to be hazardous or offensive to the local environment if not appropriately managed.

However, all appropriate site management controls and environmental impact mitigation measures would be implemented and monitored during the site's operations.

Additionally, given the location of the site, its separation from neighbours, and the intended management, mitigation and monitoring measures proposed to be implemented, no such detrimental impacts are anticipated to occur. A preliminary hazard analysis is provided in Section 5.10. In summary, if all mitigation measures provided in this EIS are implemented:

- There would be limited potential for polluting discharge from the site which would pose a significant risk to human health, life or property.
- There would be limited potential for polluting discharge from the site which would pose a significant risk to the biophysical environment.

3.2.6 State Environmental Planning Policy 44 – Koala Habitat Protection

State Environmental Planning Policy No. 44 – Koala Habitat Protection (SEPP 44) aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for Koalas. SEPP 44 also aims to ensure a permanent free-living population of Koalas over their present range, and reverse the current trend of Koala population decline by:

- Requiring the preparation of plans of management before development consent can be granted in relation to areas of core Koala habitat.
- Encouraging the identification of areas of core Koala habitat.
- Encouraging the inclusion of areas of core Koala habitat in environment protection zones.

Despite the presence of 'potential' Koala habitat as defined by SEPP 44, the limited number of recent records within close proximity to the site suggests that the site does not provide 'core' Koala habitat. Although the Clarence Valley Comprehensive Koala Plan of Management does not cover the site, using the definitions outlined in the plan, the site is classified as 'preferred Koala habitat: secondary (class A)' due to the presence of listed primary (Tallowwood) and secondary food tree species (Red Mahogany and Pink Bloodwood).

Based on this information, the presence of the Koala was considered likely on a transient basis and consequently this species has been included in the BioBanking assessment credit calculations ., refer to Section 5.5 and Appendix F.

3.2.7 State Environmental Planning Policy No 55—Remediation of Land

State Environmental Planning Policy No. 55 - Remediation of Land (SEPP 55) provides a state-wide planning approach to the remediation of contaminated land and states that all remediation work must be carried out in accordance with:

- The contaminated land planning guidelines
- Any guidelines in force under the Contaminated Land Management Act 1997
- In the case of remediation work defined as category 1 remediation work under SEPP 55, a plan of remediation approved by the consent authority and prepared in accordance with the contaminated land planning guidelines

Clause 7(1) of the Policy states that 'a consent authority must not consent to the carrying out of any development on land unless:

- a) it has considered whether the land is contaminated
- b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out

- c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.'

The quarry has not been identified to be contaminated and the proposal is not changing the current land use. It is therefore considered that the site is suitable for the proposed use in respect to contamination.

3.2.8 State Environmental Planning Policy - North Coast Regional Environmental Plan

The following clauses of the *North Coast Regional Environmental Plan SEPP* are relevant to the proposal:

Clause 12

Clause 12 prevents the approval of an application unless it has considered its impact on adjoining or adjacent agricultural land and whether or not the development would cause a loss of prime crop or pasture land.

The adjacent and adjoining land is heavily vegetated, steep and with relatively poor soils for agriculture. This is supported by the area not being considered to be "Regionally Significant Farmland" as mapped by the NSW Government *Mid North Coast Regional Farmland Mapping project 2008*. The project is therefore not expected to negatively impact on adjoining or adjacent agricultural properties.

Clause 18

Clause 18 prevents the approval of a development application for an extractive industry unless it includes any necessary conditions of consent to require implementation both during and after extractive operations of an erosion and sediment control plan and rehabilitation plan.

As described in Section 2 the project includes rehabilitation and erosion and sediment controls.

3.2.9 Protection of the Environment and Operations Act 1997

The objectives of the *Protection of the Environment and Operations Act 1997* (PoEO Act) are to protect, restore and enhance the quality of the environment, in recognition of the need to maintain ecological sustainable development.

The PoEO Act provides for an integrated system of licensing and contains a core list of activities requiring EPLs from the Environment Protection Authority (EPA). These activities are called 'scheduled activities' and are listed in Schedule 1 of the Act.

Extractive industries including crushing, grinding and separating is defined as an activity that requires an EPL when the operations exceed 30,000 tonnes per year. As the proposal involves the extraction of up to 500,000 tonnes per year, an EPL would be required for the operation of the quarry. The current operation on the subject land already has such a licence (Licence 11649) and this would be reviewed for the proposed expansion.

The importing and reuse of topsoil and mulch would also be considered a scheduled activity by virtue of Clause 39 of Schedule 1 of the PoEO Act and require an EPL.

The EPL would include requirements for the protection against water, air and noise pollution, waste disposal and incident reporting requirements for actual or potential pollution incidents.

3.2.10 Water Act 1912

The *Water Act 1912* (Water Act) governs access, trading and allocation of licences associated with both surface and underground water sources, where a Water Sharing Plan (WSP) has not been put in place. The elements to which the Water Act applies include extraction of water from a river, extraction of water from underground sources, aquifer interference and capture of surface runoff in dams.

The groundwater assessment (Section 5.2) indicates the project is unlikely to intercept the aquifer, therefore a licence under Part 5 of the Water Act is not required. However, it is proposed that a monitoring well is installed and this will require a licence.

3.2.11 Water Management Act 2000

The *Water Management Act 2000* (WM Act) is intended to ensure that water resources are conserved and properly managed for sustainable use benefitting both present and future generations. It is also intended to provide formal means for the protection and enhancement of the environmental qualities of waterways and their in-stream uses as well as to provide for protection of catchment conditions.

The site is not currently covered by a WSP, although a draft WSP for Clarence Unregulated and Alluvial Water Sources is currently being prepared by NSW Office of Water (NOW). This WSP is expected to commence in 2015.

The water collected in the sediment basins may be in excess of the “maximum harvestable right dam capacity” (MHRDC) for the site, however a Water Access Licence (WAL) would not be required because under the WM Act sediment basins do not require a licence. It is also envisaged that a Controlled Activity Approval (CAA) will not be required because the proposal does not impact any drainage lines that meet the definition of a “river” under this Act.

3.2.12 Roads Act 1993

Section 138 of the *Roads Act, 1993* sets out the requirement for approval to carry out certain works undertaken within the vicinity of a road. Under Section 138 a person must not, without consent of the appropriate roads authority:

- erect a structure or carry out a work in, on or over a public road
- dig up or disturb the surface of a public road
- remove or interfere with a structure, work or tree on a public road
- pump water into a public road from any land adjoining the road
- connect a road (whether public or private) to a classified road

The proposal does not involve any of the above works and therefore a Section 138 approval is not required.

3.2.13 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act) provides for the protection of Aboriginal objects (sites, objects and cultural material) and Aboriginal places. Under the NPW Act, an Aboriginal object is defined as ‘*any deposit, object or material evidence (not being a handicraft for sale) relating to indigenous and non-European habitation of the area that comprises New South Wales, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction, and includes Aboriginal remains*’.

An Aboriginal place is defined under the NPW Act as an area which has been declared by the Minister administering the Act as a place of special significance for Aboriginal culture. It may or may not contain physical Aboriginal objects.

It is an offence under Section 86 of the NPW Act to 'harm or desecrate an object the person knows is an Aboriginal object'. It is also a strict liability offence to 'harm an Aboriginal object' or to 'harm or desecrate an Aboriginal place', whether knowingly or unknowingly. Section 87 of the NPW Act provides a series of defences against the offences listed in Section 86 which includes if the harm was authorised by and conducted in accordance with the requirements of an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the NPW Act.

As discussed in Section 5.7, it is considered highly unlikely that scientifically or culturally significant Aboriginal cultural deposits remain at the site.

3.2.14 Rural Fires Act 1997

The Act requires referral to the Rural Fire Service where land is bushfire prone land identified by a "Bushfire Prone Land Map" prepared under Section 146 of the EP&A Act.

CVC has mapped the site as 'Vegetation Category 1' bushfire prone land.

To demonstrate compliance with *Planning for Bush Fire Protection* (NSW RFS, 2006), as required by Section 79BA of the EP&A Act, a bushfire risk assessment has been presented in Table 3-1.

Table 3-1 Bush Fire Risk Assessment

Performance Criteria	Response
Asset Protection Zones (APZ)	In the location of the site office, machinery shed and fuel storage, the site is relatively level with very little vegetation. However the site is surrounded by established forest on all sides. An assessment of the site office and shed based on a Bushfire Attack Level (BAL) 29 and AS3959-2009 indicates APZ required is: North – 0 m East – 21 m South - 27 m West – 0 m The required APZ is achievable without the need for vegetation clearing. The fuel storage area is at least 100 m from any bushfire hazard and would have a BAL of 12.5. Based on advice from RFS, this is acceptable protection.
Siting and design	The site office and shed are metal structures, as shown in Figure 2-2. They are located and designed appropriately in terms of bushfire protection.
Construction standards	AS3959-2009 construction standards are not applicable to Class 10 buildings, however, it is considered the site office and shed comply with BAL 29.
Access	The access is within 200 m of Tullymorgan Jackybulbin Road.

Performance Criteria	Response
Services	Electricity would be provided via a generator. Water would be provided by rainwater. The dedicated water supply for firefighting purposes would be the water in the sediment basins. This is supplied by runoff from the quarry and is considered a reliable water source.
Landscaping	The landscaping would be maintained, in accordance with Appendix 5 of NSW RFS (2006)

3.2.15 NSW Threatened Species Conservation Act 1995

The *Threatened Species Conservation Act 1995* (TSC Act) lists a number of threatened species, populations or ecological communities to be considered in deciding whether there is likely to be a significant impact on threatened biota, or their habitats. If a species of flora or fauna listed in Schedule 1 or 2 of the TSC Act is identified, a review must be undertaken of the factors set out to establish if there is likely to be a significant effect on that species, population, ecological community or habitat. If any of these could be impacted by the proposal, an assessment of significance that addresses the requirements of Section 5A of the EP&A Act must be completed to determine the significance of the impact. If a significant impact on a threatened species, population or ecological community is likely, a Species Impact Statement (SIS) must be completed including consultation with the NSW Office of Environment and Heritage (OEH).

As discussed in Section 5.5, the project may result in direct and indirect impacts on threatened biota listed under the TSC Act including the removal of occurrences of the threatened plant, *Hibbertia marginata*; the removal of habitat for up to 24 threatened fauna species that may occur in the study area and the removal of native vegetation within the local occurrence of Swamp sclerophyll forest. Impacts on threatened biota listed under the TSC Act have been assessed through the BioBanking calculations included in Section 5.5 and Appendix F.

3.2.16 Native Vegetation Act 2003

The *Native Vegetation Act 2003* (NV Act) and *Native Vegetation Regulation 2005* guide the way native vegetation is managed in NSW by preventing broad scale clearing, unless it improves or maintains environmental outcomes.

Under Section 89(J) of the EP&A Act, because the proposal is considered SSD, an authorisation referred to in section 12 of the NV Act to clear native vegetation is not required.

3.3 Local Environmental Plans

LEPs are prepared by Councils to guide planning decisions in their LGAs and establish the requirements for the use and development of land. The CVLEP 2011 is the current LEP for the LGA.

3.3.1 Clarence Valley Local Environmental Plan 2011

The subject land is zoned RU2 Rural Landscape pursuant to CVLEP 2011. The objectives for this zone are as follows:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.

- To maintain the rural landscape character of the land.
- To provide for a range of compatible land uses, including extensive agriculture.
- To provide land for less intensive agricultural production.
- To prevent dispersed rural settlement.
- To minimise conflict between land uses within the zone and with adjoining zones.
- To ensure that development does not unreasonably increase the demand for public services or public facilities.
- To ensure development is not adversely impacted by environmental hazards.

One small area in the north portion of the land parcel is zoned E3 Environmental Management. This is located adjacent to the northern edge of Lot 2, and applies to the steeper slopes leading up to Mt Doubleduke.

Figure 3-1 displays the current land use zoning of the site.

All of the existing sandstone quarry operation and the area of its proposed expansion are located in the RU2 zone.

Extractive industries, as defined in the Dictionary of the CVLEP 2011, are not listed in the Land Use Table for the RU2 zone. However, the permissibility of the proposed development is determined by the MPEI SEPP which prevails over the LEP, as explained in Section 3.2.3.

Lot 2 is not in or in the vicinity of any land designated in the CVLEP 2011 as a drinking water catchment, flood planning area, coastal risk area or urban release area. The CVLEP 2011 does not identify any of Lot 2 as reserved for future acquisition. No part of Lot 2 or its surrounding area is classified as containing acid sulfate soils under the CVLEP 2011.

Lot 2 (on which the quarry is located), and large areas to the south and south west of Lot 2 are subject to a 40 ha minimum subdivision lot size, while land to the north and west has a 200 ha minimum lot size.

As outlined in section 3.2.3, the MPEI SEPP permits extractive industries on any land for which agriculture or industry is permitted with or without consent, and therefore extractive industries are considered to be permissible with development consent.

Other relevant clauses of the CVLEP 2011 include:

Clause 5.9 - Preservation of trees or vegetation

The objective of this clause is to preserve the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation.

This clause applies to species or kinds of trees or other vegetation that are prescribed for the purposes of this clause by a development control plan made by the Council.

A development control plan may prescribe the trees or other vegetation to which this clause applies by reference to species, size, location or other manner. The vegetation clearing associated with the proposal has been assessed in Section 5.5.



LEGEND

Subject site

Study area

cadastre

roads

Waterways

Waterbody

Land use zone

E3, Environmental Management

RU2, Rural Landscape

RU3, Forestry

Paper Size A3

0 50 100 200 300 400

Metres

Map Projection: Transverse Mercator

Horizontal Datum: GDA 1994

Grid: GDA 1994 MGA Zone 56

N

GHD

Newman Quarrying

Sly's Quarry Environmental Impact Statement

Biodiversity Assessment

Job Number

Revision

Date

22-17528

A

18 Feb 2015

Land Use Zoning

Figure 3-1

N:\AUI\Coffs Harbour\Projects\22\17528\GIS\Maps\Deliverables\22_17528_2010_Zoning.mxd

Level 15, 133 Castlereagh Street Sydney NSW 2000 Australia T 61 2 9239 7100 F 61 2 9239 7199 E sydmail@ghd.com W www.ghd.com

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Data Source: NSW Department of Lands: Cadastre - Jan 2014; Geoscience Australia: 250k Data - Jan 2014; NSW Department of Primary Industry - Jan 2014; ESRI image Jan 2014. Created by: qichung

Clause 5.10 – Bush fire hazard reduction

Bush fire hazard reduction work authorised by the *Rural Fires Act 1997* may be carried out on any land without consent. The *Rural Fires Act 1997* also makes provision relating to the carrying out of development on bush fire prone land. See Section 3.2.14 above.

Clause 7.2 – Earthworks

The objective of this clause is to ensure that earthworks for which development consent is required would not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land.

The impact of the excavation is assessed in detail in Section 5.1. This indicates that while the project would have some negative impacts resulting from excavation, with the implementation of the mitigation measures, these impacts would be minimised.

3.3.2 Development Control Plans and other plans or policies

Development Control Plan 2011 – Rural Zones

The aim of Clarence Valley Council Development Control Plan (DCP) - *Development in Rural Zones* is to encourage development of land in rural zones that complements the rural character of a locality and is at an appropriate scale and form to minimise land use conflicts.

The Clarence Valley Rural Zones DCP applies to land zoned RU2 Rural Landscape under CVLEP.

The proposed quarry is considered to be SSD and by virtue of Clause 11 of the SRD SEPP, it is therefore excluded from the provisions of the DCP.

3.4 Statutory position

The provisions of the SRD SEPP, MPEI SEPP and CVLEP 2011 allow the proposed development to be permissible with consent as discussed in sections 3.2.1, 3.2.2 and 3.3.1.

The proposed quarry is considered to be SSD (by virtue of Clause 7 of Schedule 1 of SRD SEPP) and will require development consent from the Minister of Planning pursuant to Part 4 of the EP&A Act. To obtain consent, the DA needs to be accompanied by this EIS.

This EIS has been prepared to accord with the SEAR's developed by DPE in conjunction with a range of other government agencies.

The project would require additional licences and approvals under a range of applicable NSW legislation and is therefore also considered to be integrated development. An EPL to undertake a schedule activity under the POEO Act would also be required as would a licence under Part 5 of the *Water Act 1912* for the groundwater monitoring well.

Prior to granting development consent for the project, the consent authority must obtain general terms of approval from each relevant approval body administering the relevant legislation.

Under the provisions of the EPBC Act, the proposed development is being referred to the Department of the Environment in relation to the impacts on the identified *Hibbertia marginata* population.

4. Consultation

4.1 Introduction

The SEARs require consultation with community groups and affected landholders during the preparation of the EIS.

A consultation strategy was formulated as a part of the EIS process to assist in the identification of key stakeholders and issues for consideration. Consultation with a range of government agencies and community stakeholders was incorporated into the strategy to both inform the stakeholders of the project and to allow any issues of concern to be raised at an early stage of the planning process and incorporated into the EIS.

This chapter provides a description of the government and community consultation activities undertaken and outlines the key issues identified and where they are addressed in this document.

It is considered that the proposed expansion of the quarry does not meet criteria of complexity or scale of impacts that would warrant a Planning Focus Meeting (PFM) being held prior to the DPE issuing the SEARs.

4.2 Consultation with government agencies

Prior to preparation of the preliminary assessments, the proponent consulted the CVC Development Management Unit concerning the permissibility of the proposal. The Unit advised of the range of issues that would need to be addressed in a development application and the appropriate approach to community consultation.

During the preparation of the EIS, regular consultation was maintained with State government agencies and CVC, where there was uncertainty on what was required. Consultation has been both formal and informal and has been used to refine the proposal and develop the assessment methodology. A summary of the consultation is provided in 1.

Table 4-1 Agency Consultation

Date	Agency	Details
February 2015	CVC	Confirming that we had sufficiently addressed the items raised in their requirements in the SEARs, especially in relation to the road safety audit
18th March 2015	OEH	Requesting clarification as to how the FBA process links with the referral requirements under the EPBC Act and confirmation as to whether the proposed bilateral agreement has been approved
23rd March 2015	OEH	Advising that the bilateral agreement between the NSW and Australian Government has not yet been agreed.
2nd April 2015	OEH	Requesting confirmation as to whether the bilateral agreement has been approved and advice as to whether SEPP 44 applies to SSD when using the FBA.
7th April 2015	OEH	Advising that the assessment bilateral has now been approved and a referral will still need to be made to determine whether the bilateral applies to the project. Also advised that the FBA does not disable SEPP 44 and will still need to be addressed in the report.

4.2.1 Secretary's environmental assessment requirements

The SEARs for the preparation of this EIS were provided by the DPE following submission of the Preliminary Environmental Assessment (PEA) and subsequent agency consultation. A summary of key issues raised in the SEARs and the section of the EIS where they are addressed is provided in Table 4-2. An unabridged copy of the SEARs and associated agency submissions are provided in Appendix B.

Table 4-2 Secretary's Environmental Assessment

Issue category	Requirement	Section addressed in ES
General Requirements	- A detailed description of the proposal including: - Resource identification/extraction (having regard to DREs requirements) - Site layout and extraction plan - Processing activities - Waste (overburden, leachate, etc.) management strategy - Water management strategy (having regard to EPA and Department of Primary Industry (DPI) requirements) - Rehabilitation strategy (key principles in the Strategic Framework for Mine Closure) - likely interactions between the development and any other existing, approved or proposed extractive industry development in the vicinity of the site, including the proposed explosives depot	Section 2
	a list of any approvals that must be obtained before the development may commence	Section 3.4
	- an assessment of the likely impacts of the development on the environment, focussing on the specific issues identified below, including: - a description of the existing environment likely to be affected by the development, using sufficient baseline data - an assessment of the likely impacts of all stages of the development, including any cumulative impacts - a description of the measures that would be implemented to mitigate and/or offset the likely impacts of the development, and an assessment of: - whether these measures are consistent with industry best practice, and represent the full range of reasonable and feasible mitigation measures that could be implemented - the likely effectiveness of these measures - whether contingency plans would be necessary to manage any residual risks	Section 5

Issue category	Requirement	Section addressed in EIS
	– a description of the measures that would be implemented to monitor and report on the environmental performance of the development if it is approved – a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS – consideration of the development against all relevant environmental planning instruments (including Part 3 of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007) – the reasons why the development should be approved having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development	
	• In addition to the matters set out in schedule I of the EP&A Regulation 2000, the development application must be accompanied by a signed report from a suitably qualified expert that includes an accurate estimate of the: – capital investment value (as defined in Clause 3 of the EP&A Regulation 2000) of the development, including details of all the assumptions and components from which the capital investment value calculation is derived – jobs that would be created during each stage of the development	Section 2.10 and 2.14
Key issues	The EIS must address the following specific matters:	
	Noise and Blasting	Section 5.3 and Appendix D
	• an assessment of the likely operational noise impacts of the development under the NSW Industrial Noise policy, paying particular attention to the obligations in Chapters 1 and 9 of the policy	
	• if a claim is made for specific construction noise criteria for certain activities, then this claim must be justified and accompanied by an assessment of the likely construction noise impacts of these activities under the Interim Construction Noise Guideline	
	• an assessment of the likely road noise impacts of the development under the NSW Road Noise Policy	

Issue category	Requirement	Section addressed in ES
	an assessment of the likely blasting impacts of the development on people, animals, buildings, and infrastructure, and significant natural features, having regard to the relevant ANZEC guidelines	
	Water - an assessment of the likely impacts of the development on the quantity and quality of the region's surface and groundwater resources, having regard to the EPA's and DPI's requirements - an assessment of the likely impacts of the development on aquifers, watercourses, riparian land, water-related infrastructure, and other water users - the development of a Stormwater Management Plan	Section 5.2 and Appendix C
	Social and Economic - Including an assessment of the likely social and economic impacts of the development, paying particular attention to: - the significance of the resource - economic benefits of the project for the State and region - the demand for the provision of local infrastructure and services	Section 5.11
	Traffic and transport - an assessment of the likely traffic impacts of the development on the capacity, condition, safety and efficiency of the local and State road network, having regard to any requirements of the Roads and Maritime and Council's requirements - consideration of access arrangements for the proposed development, as well as the proposed explosives depot	Section 5.6 and Appendix G
	Biodiversity - an assessment of the likely biodiversity impacts of the development, having regard to OE's requirements - a biodiversity offset strategy to ensure the development would maintain or improve the biodiversity values of the region in the medium to long term	Section 5.5 and Appendix F
	Hazards a consideration of the associated local development	Section 5.10

Issue category	Requirement	Section addressed in EIS
	proposal for the explosives depot the potential for bushfire	
	Visual including an assessment of any visual impacts of the development on nearby private landowners and key vantage points in the public domain, including potential lighting impacts	Section 5.8
	Heritage including an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, having regard to the Heritage Council's and OEH's requirements	Section 5.7 and Appendix H
	Land – an assessment of the compatibility of the development with other land uses in the vicinity of the development in accordance with the requirements in Clause 12 of the MPEI SEPP	Section 5.1
	Air Quality - including an assessment of the likely air quality impacts of the development in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants	Section 5.4
Consultation	During the preparation of the EIS, you must consult with relevant local, State or Commonwealth Government authorities, infrastructure and service providers, Aboriginal stakeholders, community groups and affected landowners. The EIS must describe the consultation that was carried out, identify the issues raised during this consultation, and explain how these issues have been addressed in the EIS	Section 4 and Appendix A

In addition to the SEARs, additional key issues raised by statutory agencies through formal correspondence are summarised in Table 4-3 together with the relevant chapter/section of the environmental assessment which addresses that issue.

Table 4-3 Key issues raised by statutory agencies

Agency	Issues raised	Location in EIS
NSW Department of Primary Industries	Agriculture NSW advise that a DPI guideline, Agriculture issues for extractive industry development, sets out the relevant agricultural issues to consider in the preparation of an EIS for an extractive industry development.	Section 5
	Fisheries NSW advise the proponent to note that Tabbimobile Creek (located on the same lot as the proposal, south of the Tullymorgan-Jackybulbin Road), is considered a key fish habitat.	Section 5.2.2 and 5.5

Agency	Issues raised	Location in EIS
	Crown Lands advise the following issues: • The eastern boundary of the proposed quarry expansion comprises a Crown Public road that is excluded from the development proposal (as shown on the site survey plan and referred to in final paragraph of Site). Location & Land Uses on PB of the Preliminary Environmental Assessment • The EIS should recognise the status of the Crown Public road and acknowledge legal rights of public access under the <i>Roads Act 1993</i> • There should be no obstruction of legal public access along the Crown Public road • The EIS should address potential impacts and risks associated with the Crown Public road • The necessity for a fence along the road boundary should be addressed • The Crown road is not subject to an enclosure permit administered by Crown Lands. It should therefore be fenced out of the adjoining Lot 2 DP 1055044 owned by Noel & Kerry Newman • It is inappropriate for the limits of extraction to extend to the Crown Public road boundary as shown in the PEA. The EIS should adjust the boundary of the proposed extraction limit and provide an appropriate buffer zone and batters to protect the road reserve and address any risks to public rights of access • Alternatively, the option of applying to close and purchase the road should be considered. Contact Crown Lands for further details	Appendix A
	The NSW Office of Water (NOW) requested the following: • Details of water proposed to be taken (including through inflow and seepage) from each surface and groundwater source as defined by the relevant water sharing plan • Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of the project) • The identification of an adequate and secure water supply for the life of the project and confirmation that water can be sourced from an appropriately authorised and reliable supply. This is to include an assessment of the current market depth where water entitlement is required to be purchased • A detailed and consolidated site water balance • A detailed assessment against the <i>NSW Aquifer Interference Policy (2012)</i> using the NOW's assessment framework • Assessment of impacts on surface and groundwater sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems, and	Section 5.1, Section 5.2 and Appendix C

Agency	Issues raised	Location in EIS
	measures proposed to reduce and mitigate these impacts • Full technical details and data of all surface and groundwater modelling, and an independent peer review • Proposed surface and groundwater monitoring activities and methodologies • Proposed management and disposal of produced or incidental water • Details surrounding the final landform of the site, including final void management (where relevant) and rehabilitation measures • Assessment of any potential cumulative impacts on water resources, and any proposed options to manage the cumulative impacts • Consideration of relevant policies and guidelines • A statement of where each element of the SRs is addressed in the EIS (i.e. in the form of a table)	
	NOW noted the proponent's comments about groundwater. If the proposal will not interfere with an aquifer, then it may not be an aquifer interference activity, however this would need to be demonstrated through adequate on-site studies	Section 5.2 and Appendix C
	The southern and eastern sections of the property contain upriver alluvials which are currently embargoed from new water licences.	Noted
	Additional Comment by NOW: • The EIS should take into account the objects and regulatory requirements of the Water Act and WM Act, and associated regulations and instruments, as applicable:	Section 3.2.10 and Section 3.2.11
	WM Act key points: • Volumetric licensing in areas covered by water sharing plans • Works within 40 m of waterfront land • SSD & SSI projects are exempt from requiring water supply work approvals and controlled activity approvals as a result of the EP&A Act • No exemptions for volumetric licensing apply as a result of the EP&A Act • Basic landholder rights, including harvestable rights dams • Aquifer interference activity approval and flood management work approval provisions have not yet commenced and are regulated by the Water Act 1912 • Maximum penalties of \$2.2 million plus \$264,000 for each day an offence continues apply under the WM Act	
	Water Act key points: • Volumetric licensing in areas where no water sharing plan applies • Monitoring bores	

Agency	Issues raised	Location in EIS
	• Aquifer interference activities that are not regulated as a water supply work under the WMA 2000 • Flood management works • No exemptions apply to licences or permits under the Water Act as a result of the EP&A Act • Regulation of water bore driller licensing	
	<i>Water Management (General) Regulation 2011</i> Key points: • Provides various exemptions for volumetric licensing and activity approvals • Provides further detail on requirements for dealings and applications	
	• <u>Water Sharing Plans</u> - these are considered regulations under the WM Act – The proposed quarry expansion is not located within an area covered by a WSP, therefore any licensing requirements are under the Water Act. Once a WSP is gazetted for the area, on site groundwater and/ or surface water would be regulated by the WM Act. – A WSP for the area is currently targeted for commencement in 2015. • Access Licence Dealing Principles Order 2004	
	The EIS should take into account the following policies (as applicable): • <i>NSW Guidelines for Controlled Activities on Waterfront Land</i> (NOW, 2012) • <i>NSW Aquifer Interference Policy</i> (NOW, 2012) • <i>Risk Assessment Guidelines for Groundwater Dependent Ecosystems</i> (NOW, 2012) • <i>Australian Groundwater Modelling Guidelines</i> (NWC, 2012) • <i>NSW State Rivers and Estuary Policy</i> (1993) • <i>NSW Wetlands Management Policy</i> (1996) • <i>NSW State Groundwater Policy Framework Document</i> (1997) • <i>NSW State Groundwater Quality Protection Policy</i> (1998) • <i>NSW State Groundwater Dependent Ecosystems Policy</i> (2002) • <i>NSW Water Extraction Monitoring Policy</i> (2007)	Appendix C
	<u>Licensing Considerations</u> The EIS is required to provide: • Identification of water requirements for the life of the project in terms of both volume and timing (including predictions of potential ongoing groundwater take following the cessation of operations at the site - such as evaporative loss from open	Section 5.2 and Appendix C

Agency	Issues raised	Location in EIS
	voids or inflows). • Details of the water supply source(s) for the proposal including any proposed surface water and groundwater extraction from each water source as defined in the relevant Water Sharing Plan/s and all water supply works to take water. • Explanation of how the required water entitlements will be obtained (i.e. through a new or existing licence/s, trading on the water market, controlled allocations etc). • Information on the purpose, location, construction and expected annual extraction volumes including details on all existing and proposed water supply works which take surface water, (pumps, dams, diversions, etc). • Details on all bores and excavations for the purpose of investigation, extraction, dewatering, testing and monitoring. All predicted groundwater take must be accounted for through adequate licensing. • Details on existing dams/storages (including the date of construction, location, purpose, size and capacity) and any proposal to change the purpose of existing dams/storages. • Details on the location, purpose, size and capacity of any new proposed dams/storages. • Applicability of any exemptions under the <i>Water Management (General) Regulation 2011</i> to the project.	
	• <u>Water allocation</u> account management rules, total daily extraction limits and rules governing environmental protection and access licence dealings also need to be considered. • The <u>Harvestable Right</u> gives landholders the right to capture and use for any purpose 10 % of the average annual runoff from their property. The Harvestable Right has been defined in terms of an equivalent dam capacity called the Maximum Harvestable Right Dam Capacity (MHRDC). The MHRDC is determined by the area of the property (in hectares) and a site-specific run-off factor. The MHRDC includes the capacity of all existing dams on the property that do not have a current water licence. Storages capturing up to the harvestable right capacity are not required to be licensed but any capacity of the total of all storages/dams on the property greater than the MHRDC may require a licence.	Section 3.2.11
	<u>Dam Safety</u> Where new or modified dams are proposed, or where new development will occur below an existing dam, the NSW Dams Safety Committee should be consulted in relation to any safety issues that may arise. Conditions of approval may be recommended to ensure safety in relation to any new or existing dams.	NA

Agency	Issues raised	Location in EIS
	<u>Surface Water Assessment</u> The predictive assessment of the impact of the proposed project on surface water sources should include the following: • Identification of all surface water features including watercourses, wetlands and floodplains transected by or adjacent to the proposed project. • Identification of all surface water sources as described by the relevant water sharing plan. • Detailed description of dependent ecosystems and existing surface water users within the area, including basic landholder rights to water and adjacent/downstream licensed water users. • Description of all works and surface infrastructure that will intercept, store, convey, or otherwise interact with surface water resources. • Assessment of predicted impacts on the following: – flow of surface water, sediment movement, channel stability, and hydraulic regime, – water quality, – flood regime, – dependent ecosystems, – existing surface water users, and – planned environmental water and water sharing arrangements prescribed in the relevant water sharing plans.	Section 5.2 and Appendix C
	<u>Groundwater Assessment</u> To ensure the sustainable and integrated management of groundwater sources, the EIS needs to include adequate details to assess the impact of the project on all groundwater sources including • Works likely to intercept, connect with or infiltrate the groundwater sources. • Any proposed groundwater extraction, including purpose, location and construction details of all proposed bores and expected annual extraction volumes. • Bore construction information is to be supplied NOW by submitting a "Form A" template. NOW will supply "GW" registration numbers (and licence/approval numbers if required) which must be used as consistent and unique bore identifiers for all future reporting. • A description of the water table and groundwater pressure configuration, flow directions and rates and physical and chemical characteristics of the groundwater source (including connectivity with other groundwater and surface water	Section 5.2 and Appendix C

Agency	Issues raised	Location in ES
	sources). • Sufficient baseline monitoring for groundwater quantity and quality for all aquifers and groundwater dependent ecosystems (GDEs) to establish a baseline incorporating typical temporal and spatial variations. • The predicted impacts of any final landform on the groundwater regime. • The existing groundwater users within the area (including the environment), any potential impacts on these users and safeguard measures to mitigate impacts. • An assessment of groundwater quality, its beneficial use classification and prediction of any impacts on groundwater quality. • An assessment of the potential for groundwater contamination (considering both the impacts of the proposal on groundwater contamination and the impacts of contamination on the proposal). • Measures proposed to protect groundwater quality, both in the short and long term. • Measures for preventing groundwater pollution so that remediation is not required. • Protective measures for any GDEs. • Proposed methods of the disposal of waste water and approval from the relevant authority. • The results of any models or predictive tools used	
	Where potential impact/s are identified the assessment will need to identify limits to the level of impact and contingency measures that would remediate, reduce or manage potential impacts to the existing groundwater resource and any dependent groundwater environment or water users, including information on: • Any proposed monitoring programs, including water levels and quality data. • Reporting procedures for any monitoring program including mechanism for transfer of information. • An assessment of any groundwater source/aquifer that may be sterilised from future use as a water supply as a consequence of the proposal. • Identification of any nominal thresholds as to the level of impact beyond which remedial measures or contingency plans would be initiated (this may entail water level triggers or a beneficial use category). • Description of the remedial measures or contingency plans	

Agency	Issues raised	Location in EIS
	proposed. Any funding assurances covering the anticipated post development maintenance cost, for example on-going groundwater monitoring for the nominated period.	
	<u>Groundwater Dependent Ecosystems</u> The EIS must consider the potential impacts on any GDEs at the site and in the vicinity of the site and: - Identify any potential impacts on GDEs as a result of the proposal including: - the effect of the proposal on the recharge to groundwater systems; - the potential to adversely affect the water quality of the underlying groundwater system and adjoining groundwater systems in hydraulic connections; and - the effect on the function of GDEs (habitat, groundwater levels, connectivity). - Provide safeguard measures for any GDEs.	Section 5.2 and Appendix C
	<u>Watercourses, Wetlands and Riparian Land</u> The EIS should address the potential impacts of the project on all watercourses likely to be affected by the project, existing riparian vegetation and the rehabilitation of riparian land. It is recommended the EIS provides details on all watercourses potentially affected by the proposal, including: - Scaled plans showing the location of: - wetlands/swamps, watercourses and top of bank - riparian corridor widths to be established along the creeks - existing riparian vegetation surrounding the watercourses (identify any areas to be protected and any riparian vegetation proposed to be removed) - the site boundary, the footprint of the proposal in relation to the watercourses and riparian areas - proposed location of any asset protection zones. - Photographs of the watercourses/wetlands and a map showing the point from which the photos were taken. - A detailed description of all potential impacts on the watercourses/riparian land. - A detailed description of all potential impacts on the wetlands, including potential impacts to the wetlands hydrologic regime; groundwater recharge; habitat and any species that depend on the wetlands. - A description of the design features and measures to be	Appendix A, Section 5.2 and Appendix C

Agency	Issues raised	Location in EIS
	incorporated to mitigate potential impacts. Geomorphic and hydrological assessment of water courses including details of stream order (Strahler System), river style and energy regimes both in channel and on adjacent floodplains.	
	<u>Drill Pad, Well and Access Road Construction</u> - Any construction activity within 40 m of a watercourse, should be designed by a suitably qualified person, consistent with the <i>NSW Guidelines for Controlled Activities on Waterfront Land</i> (July 2012). - Construction of all wells must be undertaken in accordance with the <i>Minimum Construction Requirements for Water Bores in Australia</i> (3rd edition 2012) by a driller holding a bore drillers' licence valid in New South Wales. - The length of time that a core hole is maintained as an open hole should be minimised.	Appendix C
	<u>Landform rehabilitation (including final void management)</u> The Environmental Impact Statement report should include: - Justification of the proposed final landform with regard to its impact on local and regional surface and groundwater systems; - A detailed description of how the site would be progressively rehabilitated and integrated into the surrounding landscape; - Outline of proposed construction and restoration of topography and surface drainage features if affected by the project; - Detailed modelling of potential groundwater volume, flow and quality impacts of the presence of an inundated final void (where relevant) on identified receptors specifically considering those environmental systems that are likely to be groundwater dependent; - An outline of the measures to be put in place to ensure that sufficient resources are available to implement the proposed rehabilitation; and - The measures that would be established for the long-term protection of local and regional aquifer systems and for the ongoing management of the site following the cessation of the project.	Section 2.13 and Appendix A
Roads and Maritime Services	Roads and Maritime would like the following issues to be included in the transport and traffic impact assessment of the proposed development: The total impact of existing and proposed development on the state road network with consideration for a 10 year horizon.	Section 5.6 and Appendix G

Agency	Issues raised	Location in ES
	• The volume and distribution of traffic generated • Intersection sight distances at key intersections along the primary haulage route • Existing and proposed access conditions • Details of improvements for road intersections with consideration for the current Austroads Guidelines, particularly; – The intersection of Tullymorgan- Jackybulbin Road with the Pacific Highway. • Detail of servicing and parking arrangements • Traffic Management for construction and operational phases of the proposed development • Impact on public transport (public and school bus routes) and consideration for alternative transport modes, eg. cyclists and pedestrians • Impacts of road traffic noise and dust generated along the primary haulage route. • Consideration for Clause 16(1) of the MPEI SEPP regarding; – Impact on School Zones and Residential areas. – Truck Management Plan – Code of Conduct for Haulage Operators – Road Safety Assessment of key haulage routes	
	Where any road safety assessment of the key haulage routes identifies potential safety concerns, Roads and Maritime recommends that the traffic impact assessment be supported by a road safety audit undertaken by suitably qualified persons	
	The current Austroads Guidelines, Australian Standards and Roads and Maritime Services supplements are to be adopted for any proposed works on the classified road network. The Developer would be required to enter into a 'Works Authorisation Deed' (WAD) with Roads and Maritime for any works deemed necessary on the Pacific Highway. The developer would be responsible for all costs associated with the works and administration for the WAD.	
Office of Environment and Heritage	Environmental impacts of the project Impacts related to the following environmental issues need to be assessed, quantified and reported on: • Aboriginal cultural heritage • Historic heritage • Biodiversity • OEH Estate - Land reserved or acquired under the NPW Act	

Agency	Issues raised	Location in ES
	Water and Soils - Acid sulfate soils, Flooding and coastal erosion, Water quality ES should address the specific requirements outlined under each heading below and assess impacts in accordance with the relevant guidelines mentioned. A full list of guidelines is at Attachment	
	<u>Aboriginal cultural heritage</u> The ES report should contain: - A description of the Aboriginal objects and declared Aboriginal places located within the area of the proposed development. - A description of the cultural heritage values, including the significance of the Aboriginal objects and declared Aboriginal places, that exist across the whole area that will be affected by the proposed development, and the significance of these values for the Aboriginal people who have a cultural association with the land. - A description of how the requirements for consultation with Aboriginal people as specified in clause SOC of the National Parks and Wildlife Regulation 2009 have been met. - The views of those Aboriginal people regarding the likely impact of the proposed development on their cultural heritage. If any submissions have been received as a part of the consultation requirements, then the report must include a copy of each submission and your response. - A description of the actual or likely harm posed to the Aboriginal objects or declared Aboriginal places from the proposed activity, with reference to the cultural heritage values identified. - A description of any practical measures that may be taken to protect and conserve those Aboriginal objects or declared Aboriginal places. - A description of any practical measures that may be taken to avoid or mitigate any actual or likely harm, alternatives to harm or, if this is not possible, to manage (minimise) harm. - A specific Statement of Commitment that the proponent will complete an Aboriginal Site Impact Recording Form and submit it to the Aboriginal Heritage Information Management System (AHIMS) Registrar, for each AHIMS site that is harmed through the proposed development. In addressing these requirements, the proponent must refer to the following documents: <i>Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation</i> (Department of Planning, 2005). These guidelines identify the factors to be considered in Aboriginal cultural heritage assessments for	Appendix H

Agency	Issues raised	Location in EIS
	development proposals under Part 3A of the EP&A Act. • <i>Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010</i> (DECCW, 2010). This document further explains the consultation requirements that are set out in clause SOC of the NPW Regulation 2009. The process set out in this document must be followed and documented in the EIS • <i>Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales</i> (DECCW, 2010)	
	<u>Biodiversity</u> • The EIS report should include a detailed biodiversity assessment, including assessment of impacts on threatened biodiversity, native vegetation and habitat. This assessment should address the matters included in the following sections. • A field survey of the site should be conducted and documented in accordance with relevant guidelines, including: the <i>Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna -Amphibians</i> (DECCW, 2009) <i>Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft</i> (DEC, 2004), and <i>Threatened species survey and assessment guideline information on www.environment.nsw.gov.au</i> • If a proposed survey methodology is likely to vary significantly from the above methods, the proponent should discuss the proposed methodology with OEH prior to undertaking the EA, to determine whether OEH considers that it is appropriate. • Recent (less than five years old) surveys and assessments may be used. However, previous surveys should not be used if they have: – been undertaken in seasons, weather conditions or following extensive disturbance events when the subject species are unlikely to be detected or present – utilised methodologies, survey sampling intensities, timeframes or baits that are not the most appropriate for detecting the target subject species • unless these differences can be clearly demonstrated to have had an insignificant impact upon the outcomes of the surveys. If a previous survey is used, any additional species listed under the TSC Act since the previous survey took place, must be surveyed for. Determining the list of potential threatened species for the site must be done in accordance with the <i>Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities - Working Draft</i> (DEC, 2004) and the <i>Guidelines for Threatened Species Assessment</i> (Department of Planning 2005). The OEH Threatened Species website and the Atlas of NSW Wildlife database must be	Appendix F

Agency	Issues raised	Location in EIS
	the primary information sources for the list of threatened species present. The BioBanking Threatened Species Database, the Vegetation Types databases and other data sources (e.g. PlantNET, Online Zoological Collections of Australian Museums, previous or nearby surveys etc.) may also be used to compile the list. • The EIS should contain the following information as a minimum: – The requirements set out in the Guidelines for Threatened Species Assessment (Department of Planning 2005). – Description and geo-referenced mapping of study area (and spatial data files), e.g. overlays on topographic maps, satellite images and /or aerial photos, including details of map datum, projection and zone, all survey locations, vegetation communities (including classification and methodology used to classify), key habitat features and reported locations of threatened species, populations and ecological communities present in the subject site and study area. – Description of survey methodologies used, including timing, location and weather conditions. – Details, including qualifications and experience of all staff undertaking the surveys, mapping and assessment of impacts as part of the EA. – Identification of national and state listed threatened biota known or likely to occur in the study area and their conservation status. – Description of the likely impacts of the proposal on biodiversity and wildlife corridors, including direct and indirect and construction and operation impacts. Wherever possible, quantify these impacts such as the amount of each vegetation community or species habitat to be cleared or impacted, or any fragmentation of a wildlife corridor. – Identification of the avoidance, mitigation and management measures that will be put in place as part of the proposal to avoid or minimise impacts, including details about alternative options considered and how long term management arrangements will be guaranteed. – Description of the residual impacts of the proposal. If the proposal cannot adequately avoid or mitigate impacts on biodiversity, then a biodiversity offset package is expected. – Provision of specific Statement of Commitments relating to biodiversity. • An assessment of the significance of direct and indirect impacts of the proposal must be undertaken for threatened biodiversity known or considered likely to occur in the study area based on	

Agency	Issues raised	Location in ES
	the presence of suitable habitat. This assessment must take into account: – the factors identified in s.5A of the EP&A Act, and – the guidance provided by <i>The Threatened Species Assessment Guideline - The Assessment of Significance</i> (DECCW, 2007) • OEH recommends that the SEARs address the offsetting principles and policy as set out below. This requires the use of the Biobanking Assessment Methodology (BBAM) to assess biodiversity impacts arising from the proposal. The NSW Government is currently developing a new whole of government draft Biodiversity Offsets Policy for Major Projects which will be used in assessing impacts to biodiversity and determining acceptable offsets for state significant development and state significant infrastructure projects. This policy has been recently publicly exhibited and submissions are now being considered. In the interim, the following advice is provided. <u>Biodiversity Offsetting Principles</u> Projects must avoid and minimise impacts and offset any remaining impacts in accordance with the following seven offsetting principles: – Before offsets are considered, impacts must first be avoided and unavoidable impacts minimised through mitigation measures. Only then should offsets be considered for the remaining impacts. – Offset requirements should be based on a reliable and transparent assessment of losses and gains. – Offsets must be targeted to the biodiversity values being lost or to higher conservation priorities. – Offsets must be additional to other legal requirements. – Offsets must be enduring, enforceable and auditable. – Supplementary measures can be used in lieu of offsets. – Offsets can be discounted where significant social and economic benefits accrue to NSW as a consequence of the proposal. • During this transitional phase OEH is willing to provide assistance to applicants to ensure they meet their offsetting obligations. • Where appropriate, likely impacts (both direct and indirect) on any adjoining and/or nearby OEH estate reserved under the NPW Act or any marine and estuarine protected areas under the FM Act or the Marine Parks Act 1997 should be considered. Refer to the Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECC, 2010).	Appendix F

Agency	Issues raised	Location in ES
	With regard to the EPBC Act, the assessment should identify any relevant MNES and whether the proposal has been referred to the Commonwealth or already determined to be a controlled action	
	<u>Historical Heritage</u> The ES report should address the following: - The heritage significance of the site and any impacts the development may have upon this significance should be assessed. This assessment should include natural areas and places of Aboriginal, historic or archaeological significance. It should also include a consideration of wider heritage impacts in the area surrounding the site. - The Heritage Council maintains the State Heritage Inventory which lists some items protected under the <i>Heritage Act 1977</i> and other statutory instruments. In addition, lists maintained by the National Trust, any heritage listed under the Australian Government's EPBC Act and the local council should be consulted in order to identify any known items of heritage significance in the area affected by the proposal. These lists are constantly evolving and items with potential heritage significance may not yet be listed - Non-Aboriginal heritage items within the area affected by the proposal should be identified by field survey. This should include any buildings, works, relics (including relics underwater), gardens, landscapes, views, trees or places of non-Aboriginal heritage significance. A statement of significance and an assessment of the impact of the proposal on the heritage significance of these items should be undertaken. Any policies/measures to conserve their heritage significance should be identified. This assessment should be undertaken in accordance with the guidelines in the NSW Heritage Manual. The field survey and assessment should be undertaken by a qualified practitioner/consultant with historic sites experience.	Appendix H
	Water and Soils <u>Acid sulfate soils</u> - The potential impacts of the development on acid sulfate soils must be assessed in accordance with the relevant guidelines in the <i>Acid Sulfate Soils Manual</i> (Stone et al. 1998) and the <i>Acid Sulfate Soils Laboratory Methods Guidelines</i> (Ahern et al. 2004). - Describe mitigation and management options that will be used to prevent, control, abate or minimise potential impacts from the disturbance of acid sulfate soils associated with the project and to reduce risks to human health and prevent the degradation of	Section 5.1

Agency	Issues raised	Location in ES
	the environment. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented.	
	<u>Flooding and coastal erosion</u> The ES should include an assessment of the following referring to the relevant guidelines in Attachment 2: • The potential effect of coastal processes and coastal hazards including potential impacts of climate change such as sea level rise: – on the proposed development; and – arising from the proposed development. • Whether the proposal is consistent with any coastal zone management plans. • Whether the proposal is consistent with any floodplain risk management plans. • Whether the proposal is compatible with the flood hazard of the land. • Whether the proposal will significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties. • Whether the proposal will significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses. • Whether the proposal incorporates appropriate measures to manage risk to life from flood. • Whether the proposal is likely to result in unsustainable social and economic costs to the community as a consequence of flooding. The ES should take into account the considerations set out in the <i>NSW Government Floodplain Development Manual</i>. The implications of flooding over the full range of potential flooding, including the probable maximum flood, should be considered	Section 5.2 and Appendix C
	<u>Water</u> Describe Proposal • Describe the proposal including position of any intakes and discharges, volumes, water quality and frequency of all water discharges. • Demonstrate that all practical options to avoid discharge have been implemented and environmental impact minimised where discharge is necessary.	

Agency	Issues raised	Location in EIS
	- Where relevant include a water balance for the development including water requirements (quantity, quality and source(s)) and proposed storm and wastewater disposal, including type, volumes, proposed treatment and management methods and re-use options. Background Conditions: - Describe existing surface and groundwater quality. An assessment needs to be undertaken for any water resource likely to be affected by the proposal. - State the Water Quality Objectives for the receiving waters relevant to the proposal. These refer to the community's agreed environmental values and human uses endorsed by the NSW Government as goals for ambient waters. Where groundwater may be impacted the assessment should identify appropriate groundwater environmental values. - State the indicators and associated trigger values or criteria for the identified environmental values. This information should be sourced from the ANZECC (2000) Guidelines for Fresh and Marine Water Quality. - State any locally specific objectives, criteria or targets which have been endorsed by the NSW Government Impact Assessment: - Describe the nature and degree of impact that any proposed discharges will have on the receiving environment. - Assess impacts against the relevant ambient water quality outcomes. Demonstrate how the proposal will be designed and operated to: - protect the Water Quality Objectives for receiving waters where they are currently being achieved - contribute towards achievement of the Water Quality Objectives over time where they are not currently being achieved - Where a discharge is proposed that includes a mixing zone, the proposal should demonstrate how wastewater discharged to waterways will ensure the ANZECC (2000) water quality criteria for relevant chemical and non-chemical parameters are met at the edge of the initial mixing zone of the discharge, and that any impacts in the initial mixing zone are demonstrated to be reversible. - Assess impacts on groundwater and GDEs - Describe how stormwater will be managed both during and after construction. The EIS needs to identify all site drainage, stormwater quality devices and erosion/sedimentation control measures. The EIS should also detail the onsite treatment of	

Agency	Issues raised	Location in ES
	stormwater and effluent runoff and predicted stormwater discharge quality from the development Monitoring Describe how predicted impacts will be monitored and assessed over time	
Heritage Council	The ES should contain the following: - The heritage significance of the site and any impacts the development may have upon this significance should be assessed. This assessment should include natural areas and places of Aboriginal, historic or archaeological significance. It should also include a consideration of wider heritage impacts in the area surrounding the site. - The Heritage Council maintains the State Heritage Inventory which lists some items protected under the <i>Heritage Act, 1977</i> and other statutory instruments. - In addition, you should consult lists maintained by the National Trust, any heritage listed under the EPBC Act and the local council in order to identify any identified items of heritage significance in the area affected by the proposal. - Non-Aboriginal heritage items within the area affected by the proposal should be identified by field survey. This should include any buildings, works, relics (including relics underwater), gardens, landscapes, views, trees or places of non-Aboriginal heritage significance. A statement of significance and an assessment of the impact of the proposal on the heritage significance of these items should be undertaken. Any policies/measures to conserve their heritage significance should be identified. This assessment should be undertaken in accordance with the guidelines in the NSW Heritage Manual. The field survey and assessment should be undertaken by a qualified practitioner/consultant with historic sites experience. The proposal should have regard to any impacts on places, items or relics of significance to Aboriginal people. Where it is likely that the project will impact on Aboriginal heritage, adequate community consultation should take place regarding the assessment of significance, likely impacts and management/mitigation measures.	Appendix H
Clarence Valley Council	Planning The quarry is in existence and has approval to operate over three areas on the land (sites A, B and C) to a capacity of 100,000 tonne per annum (DA1977/111). At a recent pre-lodgement meeting, the owners advised that they have an EPA	Section 1.2 and Section 5

Agency	Issues raised	Location in ES						
	licence to extract up to 500,000 tonne per annum (Council has not sighted that licence). - It is noted that a planning proposal to allow an explosives depot is also proposed (by a separate applicant) on the same lot as the quarry extraction. - The quarry area has considerable separation from the area of lot sought be used for the explosives depot, which is still subject to the planning proposal/rezoning process. The explosives depot is not part of the sandstone quarry and has no operational relationship to the quarry. The company intending to operate the explosives depot provides blasting services to many other quarries in the Northern Rivers area, including the subject quarry. This process has been delayed pending resolution by the proponent of post - exhibition issues - We note that the PEA document acknowledges the planning proposal/rezoning process for the proposed explosives depot. We request that any proposal for expansion of the extractive area consider the explosives depot proposal and note any conflicts or impacts. - In particular, the proposed explosives depot intends to utilise the existing quarry entrance and internal quarry access road to the existing quarry site office & weighbridge, and the existing track west from that point to quarry site C being the chosen site for the proposed explosives depot. Assuming the expanded quarry will use the existing quarry entrance and internal quarry roads, it is considered that an EIS for the expanded quarry should address access arrangements for both enterprises and associated traffic management arrangements see further comment under 'engineering' below). - It should be noted that the site is covered by the Bushfire Prone Land Overlay and is referable to the NSW Rural Fire Service as Integrated Development. - The effects on the existing water course should be addressed in any application, as well as proposals for remediation of the site post development. - If Council were assessing the application, Section 94 contributions would apply to any approval. The calculation used is as per the table below, and we ask that this requirement be kept in mind when the application is decided.							
<table><tr><th colspan="2">Clarence Valley Contributions Plan 2011 Section 94A Levy Rates for Development</th></tr><tr><th>Development Type*</th><th>Levy Rate</th></tr><tr><td>Proposed cost of carrying out the development is up to and</td><td>Nil</td></tr></table>			Clarence Valley Contributions Plan 2011 Section 94A Levy Rates for Development		Development Type*	Levy Rate	Proposed cost of carrying out the development is up to and	Nil
Clarence Valley Contributions Plan 2011 Section 94A Levy Rates for Development								
Development Type*	Levy Rate							
Proposed cost of carrying out the development is up to and	Nil							

Agency	Issues raised	Location in ES				
	<table><tr><td>Proposed cost of carrying out the development is more than \$100,000 and up to and including</td><td>\$ (Value of Development) x 0.005 =</td></tr><tr><td>Proposed cost of carrying out the development is more than More than \$200,000</td><td>\$ (Value of Development) x 0.01 = \$</td></tr></table> There is also a Section 94 Plan specific to maintenance of quarry roads for this area. Details can be provided to the Director General at a later date	Proposed cost of carrying out the development is more than \$100,000 and up to and including	\$ (Value of Development) x 0.005 =	Proposed cost of carrying out the development is more than More than \$200,000	\$ (Value of Development) x 0.01 = \$	
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Proposed cost of carrying out the development is more than More than \$200,000	\$ (Value of Development) x 0.01 = \$					
	Engineering - A Traffic Impact Assessment and Road Safety Audit should be provided that lists a number of relevant issues. This would consider the intersection servicing the quarry site off Tullymorgan-Jackybulbin Road, and Tullymorgan- Jackybulbin Road and the intersection with the Pacific Highway. The report should include an assessment of; - Conflict/potential for conflict between the quarry operation and the proposed explosives depot (should it be approved); i.e., traffic movements (as mentioned above); and - The suitability of internal access roads including widths, drainage and pavement to safely accommodate both activities. - A stormwater management plan should be included.					
	Building From the documents submitted there doesn't appear to be any buildings proposed to be constructed on the site so no Construction Certificates will be required. However, if buildings are proposed for site management, etc, the location of those structures should be included on the plans. If employees/contractors are based on the site then appropriate sanitary facilities and associated wastewater management facilities will need to be provided on site for their use. This should be addressed.					
	Environmental Health Council's Environmental health section has requested that the following matters be fully addressed: - Noise issues - noise will be a major consideration. Noise from drilling, blasting, trucks, crushing, transport and machinery etc - Air quality - dust emissions - Surface water run off - Ground water impacts and monitoring - Vibrations from processes - Sediment and erosions controls - during building phase and					

Agency	Issues raised	Location in EIS
	ongoing during operation Trade waste and adequate environmental management of commercial operation by-products, such as fuel storage, oils Correct waste management procedures from persons on site, also from unwanted commercial by-products etc.	

4.3 Community consultation

A program of community consultation was developed and implemented, focused on landowners and occupiers likely to be impacted by the proposed development, as well as any local community group that may exist and are relevant.

The location of the quarry is relatively isolated, so large scale community consultation was considered unnecessary. The two neighbours to the east and the nearest neighbour to the west have been consulted. During the consultation, the residents were shown a copy of the plans for proposed quarry, a description of the proposal and the preliminary results of the detailed assessments.

The only concern raised was the increase in the number of trucks, the speed of the trucks and the maintenance of Tullymorgan-Jackybulbin Road. The neighbour to the west did not want to complete the Community Consultation Record because they were tenants. They did not raise any concerns regarding the proposal.

Newman Quarrying have had informal discussions with most of the immediate neighbours to the quarry over the past couple of months. The neighbours have not raised any concerns regarding the proposal.

The Jackybulbin Progress Association have existed in the past and have raised concerns regarding the quarry but we understand the association no longer exists.