NSW GOVERNMENT | Planning & Environment

# *STATE SIGNIFICANT DEVELOPMENT: Sly's Quarry Expansion Project (SSD 6624)*

Environmental Assessment Report
Section 89E of the
*Environmental Planning and Assessment Act 1979*

April 2016

Cover Photograph: View of the quarry from the western face (GHD Geological Resource Assessment, supplementary report, 2015)


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## EXECUTIVE SUMMARY

Newman Quarrying Pty Ltd (Newman) operates Sly's Quarry; an existing approved sandstone and sand quarry located approximately 17 kilometre (km) north of Maclean in the Clarence Valley local government area. The Sly's Quarry Expansion Project involves expansion of the existing quarry by 11.1 hectares (ha) and an increase in the maximum rate of extraction from 100,000 tonnes to 500,000 tonnes per annum from a total resource of 7.4 million tonnes. The proposal would also involve an increased hours of operation (but not for blasting). Newman intends to target supply of construction material for the approved Pacific Highway upgrade between Woolgoolga and Ballina, which is an approved State significant infrastructure (SSI) project.

The proposed development is classified as State significant development under section 89C of the *Environmental Planning and Assessment Act 1979* as it meets the criteria in clause 7 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011.* Under existing Ministerial delegations, the Executive Director Resource Assessments and Compliance may determine the development application as there was only one submission that objected to the application, Clarence Valley Council did not object and no political donations have been declared.

The Environmental Impact Statement (EIS) was exhibited from 18 May to 17 June 2015. One objection was received from a neighbouring landowner. A total of nine government agencies, including the Council, made submissions with some requesting additional information or providing recommended conditions of consent. Newman provided a response to submissions (RTS) report in several parts between October 2015 and January 2016. Newman asked to revise its Biodiversity Assessment Report (BAR) in February 2016.

The Department undertook an assessment of the EIS, public and agency submissions, the RTS, revised BAR and additional correspondence. The Department considers the key assessment issues relate to potential traffic and transport, biodiversity and water impacts.

The proposal is expected to see a daily maximum of 125 laden trucks dispatched from the site (ie a total of 250 truck movements) under peak operating conditions. This would be slightly less than the 140 laden trucks (280 movements) allowed in the existing development consent. Road safety concerns were raised in the public submission and also by Council, who requested that a road safety audit is undertaken for the 2.6 km section of Tullymorgan-Jackybulbin Road that forms the haul route to the Pacific Highway. As part of its assessment the Department undertook a site visit with Council officers in November 2015 and viewed the existing condition of the local road and intersections. Based on the site visit and the EIS, the Department considers that the existing road network is capable of accommodating the volume of trucks expected under peak operating conditions, subject to conditions. Consequently, the Department does not consider a road safety audit to be necessary.

The proposal would cause the loss of 1,130 individuals of vulnerable Bordered Guinea Flower (*Hibbertia marginata*) and 10.5 ha of native vegetation. The BAR was further revised in April 2016 following Office of Environment and Heritage (OEH) advice to address incorrect application of the biobanking credit calculator, lack of sufficient survey work to justify conclusions about species presence and the need to consider additional threatened flora and fauna species. OEH and the Department were satisfied with the revisions and that Newman would offset the residual impacts to biodiversity in accordance with the *NSW Biodiversity Offsets Policy for Major Projects*.

In consultation with the Environment Protection Authority, the Department has confirmed that the quarry's existing water management system is capable of accommodating the surface water runoff from an expanded quarry footprint provided that the main sediment dam is enlarged, as is proposed. The project is not expected to intercept any shallow or deep groundwater sources. However, Department of Primary Industries - Water recommended that the shallow alluvial aquifer southeast of the site is monitored. The Department is satisfied that the operation would not cause unacceptable noise, air quality or blasting impacts to nearby residents.

Overall, the Department considers the proposal is a well-located source of construction materials, which would provide a local supply to an important SSI project without significantly compromising the amenity of nearby residents and landowners, or affecting the environment. The proposal would also maintain and contribute to employment in the local region. Accordingly, the Department considers the proposal to be in the public interest and recommends that it be approved, subject to the recommended conditions of consent.

# 1 INTRODUCTION

Sly's Quarry is an existing sandstone and sand quarry located 2.6 kilometres (km) west of the Pacific Highway on Tullymorgan-Jackybulbin Road (Tullymorgan Road) in Mororo. The quarry is approximately 17 km north of the town of Maclean and 50 km northeast of Grafton in the Clarence Valley local government area (LGA) (see **Figure 1**). The operator and Applicant is Newman Quarrying Pty Ltd (Newman).

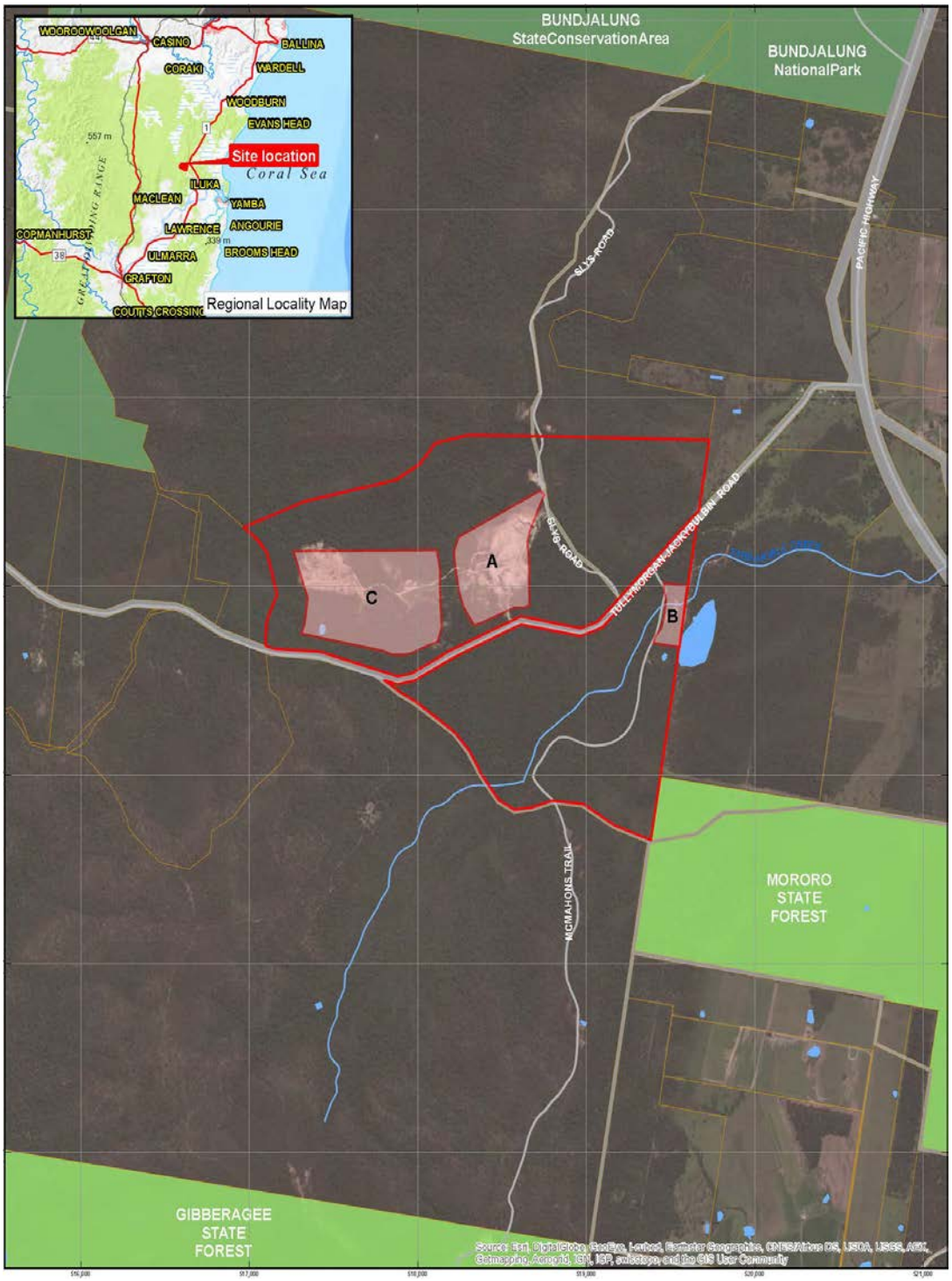


***Figure 1:*** *Location of Sly's Quarry*

The quarry is situated on the southern side of Mount Doubleduke on land that slopes from the north to the south. The unformed Slys Road (a Crown road reserve) runs along a ridge line on the eastern boundary of the site, which extends from Tullymorgan Road up towards Mount Doubleduke.

In geological terms, the site is located at the southern end of the Clarence Moreton Basin which comprises a broad basin of sedimentary rocks of Jurassic to Cretaceous age. The quarry's target resource (the Kangaroo Creek Sandstone) outcrops across the site and consists of distinct beds of medium to coarse-grained sandstone with minor lenses of conglomerate, coal and thin carbonaceous inter-beds.

The quarry is located in the Clarence River catchment, with unnamed ephemeral drainage lines flowing in a southwest direction under Tullymorgan Road to Tabbimoble Creek. This creek flows east beneath the Pacific Highway and through the Bundjalung National Park, Devils Pulpit State Forest and a protected wetland listed under *State Environmental Planning Policy No 14 – Coastal Wetlands* to its confluence with the Esk River. The Esk River in turn flows south to the Clarence River near Iluka.

The quarry operates under development consents issued by Maclean Shire Council in 1995 and 1997, which allow rock quarrying at Site A (22 hectares (ha)) and sand extraction at Sites B (5 ha) and C (44 ha) up to a maximum limit of 100,000 tonnes per annum (tpa) at each site (see **Figure 1**). Newman and the Jackybulbin Progress Association separately appealed these two approvals and the conditions attached to them. The NSW Land and Environment Court upheld two appeals and issued revised conditions of consent while a further two appeals were withdrawn. The sand resource at Sites B and C was then extracted until exhaustion and Newman obtained development consent from Clarence Valley Council (Council) in 2004 to import fill to Site C for rehabilitation purposes. The quarry is also regulated by the Environment Protection Authority (EPA) under Environment Protection Licence (EPL) number 11649.

Access to the quarry is via Tullymorgan Road (see **Figure 2**). The site office, weighbridge and other infrastructure is situated 200 metres (m) north along the private access road. The extraction area extends from the office area to the northeast towards the ridge line and the unformed Slys Road.

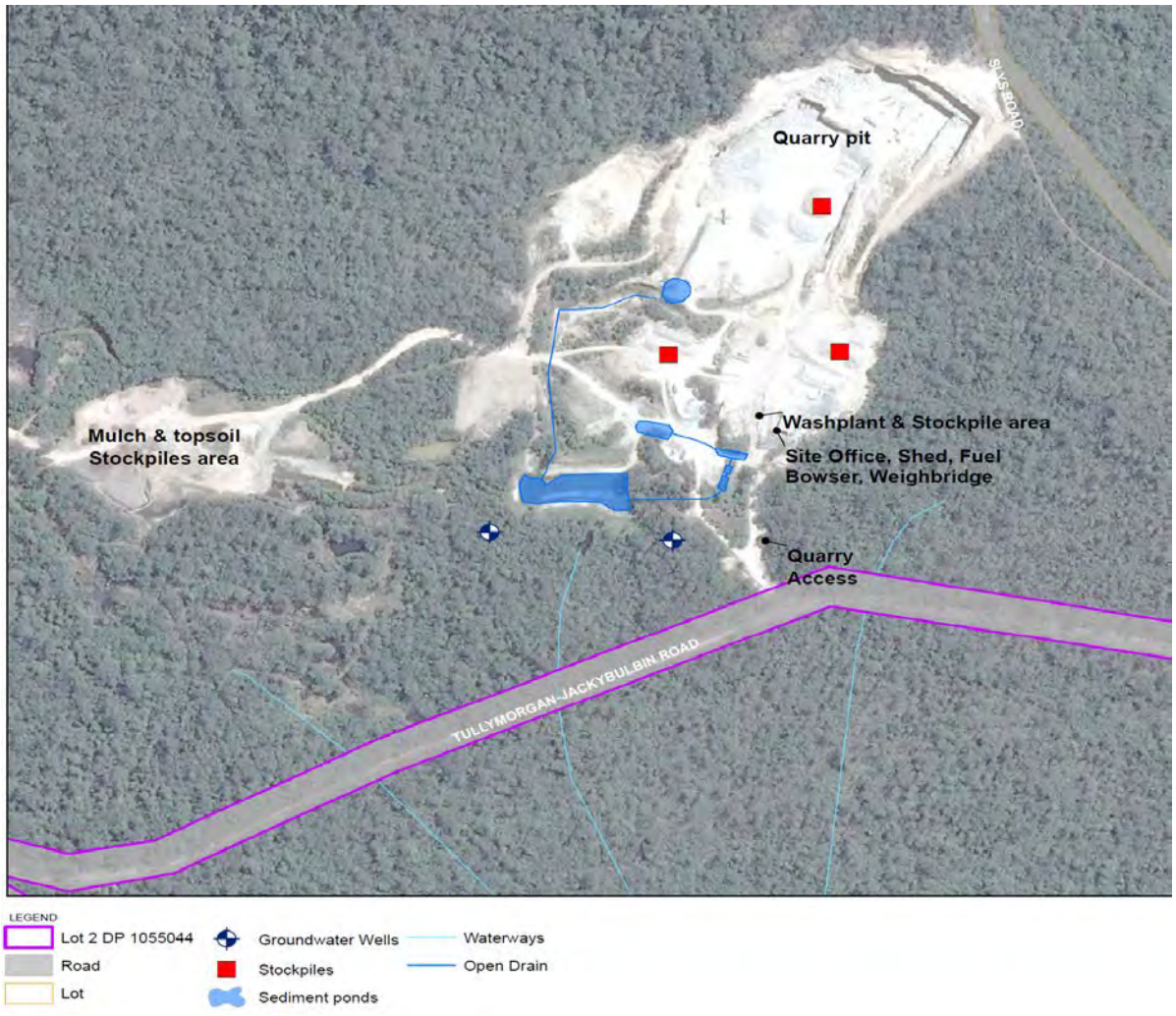


***Figure 2:*** *Existing site layout*

# 2 PROPOSED DEVELOPMENT

## 2.1 Description

The proposal involves:

- staged expansion of the existing sandstone quarry pit over a further 11.1 ha;
- increasing the quarry's maximum rate of extraction from 100,000 to 500,000 tpa;
- increasing the quarry's hours of operation;
- increasing the number of quarry product truck movements (ie to and from the quarry) up to a maximum of 250 per day under peak operations;
- importing mulch and topsoil for rehabilitation and other material (such as clay) to meet product specification blends; and
- continued rehabilitation of the previous sand quarry sites (ie Sites B and C) and rehabilitation of the proposed expanded sandstone quarry (Site A).

The key components of the development are recorded in **Table 1** and sequence of extraction is shown in **Figure 3**. The development is fully described in Newman's Environmental Impact Statement (EIS, see **Appendix A**).

***Table 1**: Key components of the Sly's Quarry Extension Project*

| *Aspect* | *Existing* | *Proposed* |
|---|---|---|
| *Rate of Production* | 100,000 tpa at each of Sites A, B and C (NB Sites B and C now exhausted) | 500,000 tpa at Sly's Quarry (ie Site A) |
| *Quarry Life* | Unspecified | 25 years |
| *Employees* | • 3 full-time employees<br>• 1 truck driver | • 8 full-time employees<br>• 1 truck driver (otherwise contractors used) |
| *Hours of Operation* | • Quarry 7:00 am – 5:00 pm Monday to Friday and 7:00 am – 1:00 pm Saturday<br>• Blasting 9:00 am to 3:00 pm Monday to Friday<br>• On-site equipment maintenance allowed on Saturdays, Sundays and public holidays subject to prior notification to Council | • Quarry 6:30 am – 6:00 pm Monday to Friday and 7 am – 4:00 pm Saturday<br>• Crushing of rock and loading/dispatch of trucks from 7:00 am<br>• Blasting: 9:00 am to 3:00 pm Monday to Friday<br>• One truck to return to site outside of hours |
| *Number of Blasts* | Up to three per month | Up to two per month |
| *Blasting Hours* | 9:00 am – 3:00 pm Monday to Friday and no blasting on weekends or public holidays | No change |
| *Quarrying Methods* | Excavation, drill and blast, load and haul | No change |
| *Processing Methods* | Rock crushing, screening and washing on site | No change |
| *Maximum Daily Vehicle Movements*[1] | 160-180 truck movements from Site A and 100 truck movements from Sites B and C per day (total truck movement of up to 280 trucks under full production of all three sites) | • Maximum of 250 truck movements per day (125 laden from the quarry) from Site A<br>• Returning trucks permitted to deliver imported material |
| *Quarry Development* | Quarry floor level 44 m AHD | No change |
| *Sequence of Extraction* | Stage 1 (6.9 ha) will extract 2.3 million tonnes | • Stage 2 (5.7 ha) would extract 2.8 million tonnes in two sub-stages (Stage 2 north and Stage 2 south)<br>• Stage 3 (5.4 ha) would extract 1.8 million tonnes in two sub-stages (Stage 3 north and Stage 3 south) |

[1] The EIS proposes an increase in truck movements, which has been reflected in the Department's description of the proposal. However, as explained in Section 5.1, the quarry previously had consent for a greater number of trucks movements (280) before the sand resource was exhausted at Sites B and C.

| *Aspect* | *Existing* | *Proposed* |
|---|---|---|
| *Importation of material* | Importation of sand and clay to mix with crushed rock and meet customer specifications (eg RMS) | • Continue to import sand and clay to meet customer specifications<br>• Import topsoil (10,000 tpa) and mulch (5,000 $m^3$ per annum) for use in rehabilitation |
| *Infrastructure* | • site office and pump-out toilet<br>• machinery shed<br>• bunded oil shed<br>• weighbridge<br>• 12,000 litre fuel bowser<br>• water tanks<br>• electricity generator | No change |

## 2.2 Justification

Newman proposes to target supply of quarry products to the Pacific Highway upgrade project (SSI 4963). It has been estimated that this approved State significant infrastructure (SSI) project would require around 4 million tonnes of rock material and Sly's Quarry has been identified as one of several potential sources of this material. In addition, Newman anticipates its existing baseline demand to continue into the future.

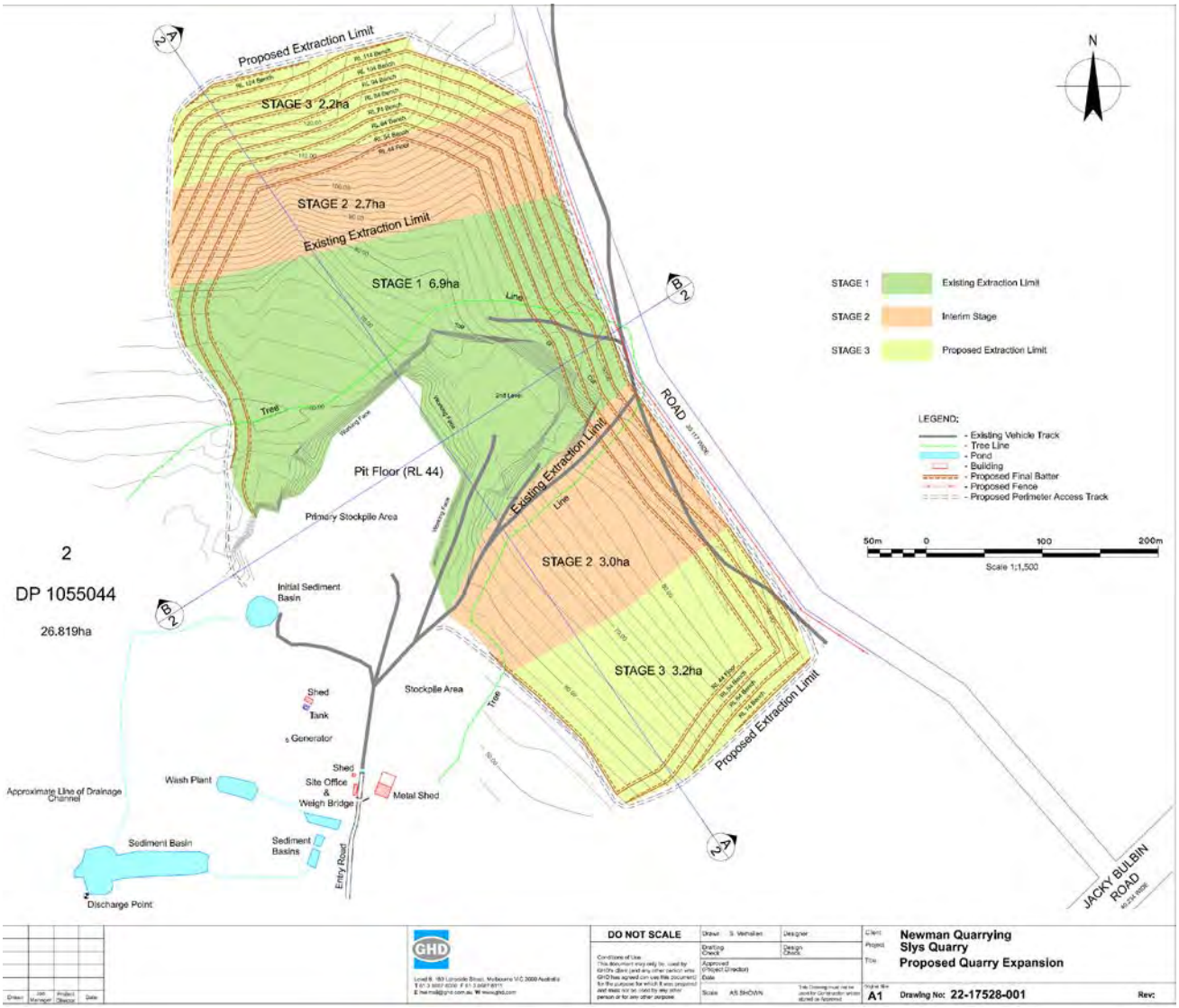


***Figure 3:*** *Proposed sequence of extraction*

# 3 STATUTORY CONTEXT

## 3.1 State Significant Development

The proposed development satisfies the criteria for State significant development (SSD) under Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011*, as it would extract 500,000 tonnes of extractive material per annum.

Under existing Ministerial delegations dated 16 February 2015, the Executive Director, Resource Assessments and Compliance may determine the development application as there was only one public submission received in objection, Council did not object and no political donations have been reported.

## 3.2 Permissibility

The site is zoned RU2 Rural Landscape (RU2) under the *Clarence Valley Local Environmental Plan 2011* (the LEP). Development for the purposes of an extractive industry is not a permissible land use in the RU2 zone under the LEP. However, clause 7(3) of *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries)* 2007 (the Mining SEPP) overrides local planning instruments and makes extractive industries permissible on any land on which development for the purpose of agriculture or industry may be carried out. Under the LEP, intensive livestock agriculture and intensive plant agriculture (both defined as types of agriculture) are permissible land uses in the RU2 zone. The proposal is therefore permissible with consent by operation of clause 7(3) of the Mining SEPP.

## 3.3 Objects of the EP&A Act

The consent authority is required to consider the objects of the EP&A Act when making decisions under the Act. The objects of most relevance to the decision on whether or not to approve the development are:

*(a) to encourage:*

- *(i). the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment;*
- *(ii). the promotion and co-ordination of the orderly and economic use and development of land…*
- *(vi). the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
- *(vii). ecologically sustainable development.*

The Department is satisfied that the proposal encourages the proper use of resources (Object 5(a)(i)) as it would enable the continued supply of a regionally significant source of sandstone to the construction and building industry (including the Pacific Highway upgrade project). The Department is also satisfied the proposal would achieve the promotion and co-ordination of the orderly and efficient use of land (Object 5(a)(ii)) as it would utilise established quarry infrastructure on already cleared land without significantly compromising the amenity of nearby residents. The Department has considered the protection of the environment (Object 5(a)(vi)) throughout its assessment in Section 5 below and is satisfied the potential impacts can be suitably mitigated or offset to ensure an acceptable environmental outcome is achieved.

*Ecologically sustainable development*

The Department has considered the encouragement of ecologically sustainable development (ESD) (Object 5(a)(vii)) in its assessment of the development application. The EP&A Act adopts the definition of ESD from the *Protection of the Environment Administration Act 1991* which states that:

*"ecologically sustainable development requires the effective integration of economic and environmental considerations in decision-making processes. Ecologically sustainable development can be achieved through the implementation of the following principles and programs:*

*(a) the precautionary principle;*
*(b) inter-generational equity;*
*(c) conservation of biological diversity and ecological integrity; and*
*(d) improved valuation, pricing and incentive mechanisms.*

The Department's assessment has sought to integrate all significant environmental, social and economic considerations and to avoid any serious or irreversible damage to the environment. In doing so, the Department has considered the encouragement and achievement of ESD in the assessment of the proposal.

### 3.4 Significant effect on threatened species, populations or ecological communities, or their habitats

In deciding whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats, the consent authority is required to take into consideration:

- the factors listed in section 5A(2) of the EP&A Act (the '7-part test'); and
- any assessment guidelines issued and in force under the *Threatened Species Conservation Act 1995* (TSC Act) or the *Fisheries Management Act 1994*.

Newman has undertaken 7-part tests for Bordered Guinea Flower *(Hibbertia marginata)* and other potentially affected threatened flora and fauna species. The Department has taken these factors and the *Threatened Species Assessment Guidelines* (TSA Guidelines, DECC 2007) into account in deciding whether there is likely to be a significant effect on threatened species, populations, ecological communities, or their habitats. The Department is satisfied the proposal would not be likely to significantly affect threatened species, populations or ecological communities, or their habitats (see Section 5.2).

### 3.5 Matters for Consideration

In determining a development application, the consent authority is required to take into account the matters for consideration listed under section 79C of the EP&A Act insofar as are relevant to the development. These matters have been considered throughout the Department's assessment report, in particular the provisions of any approved or draft environmental planning instruments (EPIs, see **Appendix B**), the likely impacts of the development (Section 5), the suitability of the site (Section 5), submissions (Sections 4 and 5) and the public interest (Sections 5 and 7). The Department has undertaken its assessment of the project in accordance with all relevant matters as prescribed by the *Environmental Planning and Assessment Regulation 2000*.

The EIS contains a review of the relevant provisions of approved or draft EPIs that apply to the proposed development, including the:

- *State Environmental Planning Policy (SEPP) (State and Regional Development) 2011*;
- *SEPP (Mining, Petroleum Production and Extractive Industries) 2007*;
- *SEPP (Rural Lands) 2008*;
- *SEPP (Infrastructure) 2007*;
- *SEPP No 14 – Coastal Wetlands;*
- *SEPP No 33 – Hazardous and Offensive Development*;
- *SEPP No 44 – Koala Habitat Protection*;
- *SEPP No 55 – Remediation of Land*;
- *North Coast Regional Environmental Plan;* and
- LEP.

The Department has considered this review and undertaken its own assessment (see **Appendix B**). The Department considers that the proposal can be undertaken in a manner that is generally consistent with the aims, objectives and provisions of these EPIs, subject to a range of management and offset measures that have been incorporated in the recommended conditions of consent (see **Appendix E**). Development control plans do not apply to SSD under Clause 11 of *SEPP (State and Regional Development) 2011*.

### 3.6 Integrated approvals

Under section 89J(1) of the EP&A Act, a number of approvals are not required to be separately obtained for the proposed development. These include certain approvals, permits and authorisations under the *Fisheries Management Act 1994, Heritage Act 1977*, *National Parks and Wildlife Act 1974*, *Native Vegetation Act 2003, Rural Fires Act 1997* and *Water Management Act 2000*.

An EPL would be required for the project but this cannot be refused under section 89K of the EP&A Act if it is necessary for the carrying out of an approved SSD project. It must also be substantially consistent with the development consent granted.

The Department has consulted the relevant government authorities and considered their comments in its assessment (see Sections 4 and 5).

### 3.7 Commonwealth Approval

The Commonwealth Minister for the Environment determined that the proposal is a 'controlled action' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999) as it is likely to have

significant impact on controlling provisions and matters protected under the EPBC Act, including listed threatened species and communities, in particular the:

- Bordered Guinea Flower (*Hibbertia marginata*);
- Koala (*Phascolarctos cinereus*); and
- Grey-headed Flying-fox (*Pteropus poliocephalus*)

The proposal had already been exhibited under the NSW planning system at the time the Commonwealth Minister declared it a controlled action. As a result, the Commonwealth Department of the Environment advised that it would undertake its own assessment of the likely significant impacts to listed threatened species and communities under the EPBC Act. The Commonwealth Minister for the Environment therefore maintains a separate assessment and approval role under the EPBC Act.

# 4 CONSULTATION

## 4.1 Exhibition

The Department made the development application and accompanying EIS publicly available from 18 May to 17 June 2015:

- on the Department's website;
- at the Department's Information Centre in Bridge Street, Sydney;
- at the administration offices of Clarence Valley Council;
- at Council's Yamba and Maclean libraries; and
- at the Nature Conservation Council's office in Newtown.

Copies of the EIS were distributed to relevant State Government authorities. The exhibition was advertised in the *Grafton Daily Examiner*. The Department also wrote to adjoining landowners on 26 October 2015 and provided them with an opportunity to provide a submission on the application.

## 4.2 Public Submissions

One submission from the public was received, which objected to the proposal on the following grounds:

- impacts of increased traffic from trucks and potential for fauna strike by vehicles;
- noise and visual amenity impacts on adjoining and nearby landowners and residents;
- Newman's failure to consult with the objector, who is an adjoining landowner;
- acknowledgement in the EIS that the quarry has failed to comply with its extraction limit conditions in the past; and
- the proposed extraction rate is an ambit claim, which should be revised to reflect the likely period of supply to the Pacific Highway upgrade project.

Following discussions between the objector and Newman's consultant, the objector provided an addendum to this submission which reiterated several of these issues. All issues raised in the submission and addendum have been considered in the Department's assessment (see Section 5).

## 4.3 Agency Submissions

The **Office of Environment and Heritage** (OEH) requested revisions to the biobanking assessment, including resolving errors in calculations, considering edge effects and additional information to demonstrate compliance with the *Framework for Biodiversity Assessment* (FBA). In addition, OEH requested further consultation with Aboriginal knowledge holders.

The **Environment Protection Authority** (EPA) advised that it does not accept the use of the Model for Urban Stormwater Improvement Conceptualisation (MUSIC) as a tool for determining sediment and erosion control measures for extractive industries. However, the EPA considered this could be rectified through the use of a condition of consent requiring the preparation and implementation of a Soil and Water Management Plan. The EPA also recommended limited hours of operation on Saturdays.

**Clarence Valley Council** did not object to the proposal subject to an adequate assessment of environmental issues and the application of its development contributions plan for an amenity levy (section 94A of the EP&A Act) and a road maintenance contribution (section 94 of the EP&A Act). Council identified a proposal to establish an explosives storage facility that would utilise the same private access road and the need to consider the potential for conflict between respective traffic volumes. Subsequent to receiving this advice, Council confirmed the associated planning proposal for the explosives storage facility had been withdrawn.

The Lands Division within the **Department of Primary Industries** (**DPI Lands**) recommended maintaining an appropriate setback and installation of a fence to manage the risk to public safety from the public right of access along the unformed Slys Road, which adjoins the eastern boundary of the site.

No objections were received from the **Division of Resources and Energy**, **DPI Water**, **NSW Fisheries**, **Roads and Maritime Services** (RMS) and the **Rural Fire Service** (RFS) subject to receipt of additional information and/or the inclusion of recommended conditions of consent.

Copies of all submissions are included in **Appendix C**.

### 4.4 Response to Submissions

The Department requested Newman to provide a Response to Submissions (RTS) report on 26 June 2015. It then advised Newman of particular assessment issues on 20 July 2015. Newman's RTS was received in several parts during October 2015 and January 2016 (see **Appendix D**). Newman revised its original Biodiversity Assessment Report (BAR) in February 2016 and again in April 2016.

All parts of the RTS were made publicly available on the Department's website and agencies were invited to provide further comment and/or recommended conditions of consent. Both Council and OEH requested further revisions to assessments or the provision of additional information.

## 5 ASSESSMENT

In assessing the merits of the development, the Department has considered the:

- EIS, submissions received from the public and agencies, Newman's RTS and supplementary information provided by Newman, its consultants and final advice of public authorities;
- current development consent for the site;
- observations made during a site visit to the existing quarry, past extraction areas including Sites B and C and the local and State road network in the immediate vicinity of the site; and
- relevant EPIs, policies and guidelines; and
- relevant provisions of the EP&A Act and Regulation.

### 5.1 Traffic and Transport

The EIS includes a Traffic Impact Assessment (TIA), which considered the potential impacts of proposed truck movements on the existing local and State road network. The TIA outlined three operating scenarios (see **Table 2**). The Department has focussed on the worst-case scenario, being maximum operating conditions, which are expected to generate up to 125 laden trucks or 250 vehicle movements per day.

***Table 2:*** *Quarry operating scenarios*

| ***Operating scenario*** | ***Materials extracted*** *(tonnes per day)* | ***Materials hauled*** *(total truck movements per day)* |
|---|---|---|
| Maximum | 4,000 | 250 |
| Average | 1,500 | 100 |
| Low | 750 | 50 |

*Existing traffic levels*

The EIS identifies that the existing quarry operation (Site A) generates a total of around 94 vehicle movements, which consists of 40 trucks (80 movements) and 7 light vehicles (14 movements) per day. These vehicles travel a short distance (2.6 km) from the intersection of the quarry access, along Tullymorgan Road to the Pacific Highway. As few as 10 trips per year are expected to travel west along Tullymorgan Road.

The TIA has not undertaken traffic counts on Tullymorgan Road but has estimated background traffic volumes based on the RMS's *Guide to Traffic Generating Developments* (2002) and assumptions regarding surrounding land use, availability of alternate routes and proportion of heavy vehicles in total traffic. During the Department's site visit to the quarry and surrounding road network, Council advised that there was an extant development consent (DA 94/231), which allows sand extraction on a property located on the southern side of Tullymorgan Road between Sly's Quarry and the Pacific Highway (see **Figure 4**). This consent allows the extraction of limited quantities of sand (up to 250 $m^3$ per week, for dispatch by up to 25 trucks (ie 50 movements)). The Department asked Newman to consider these additional background truck movements in its RTS.

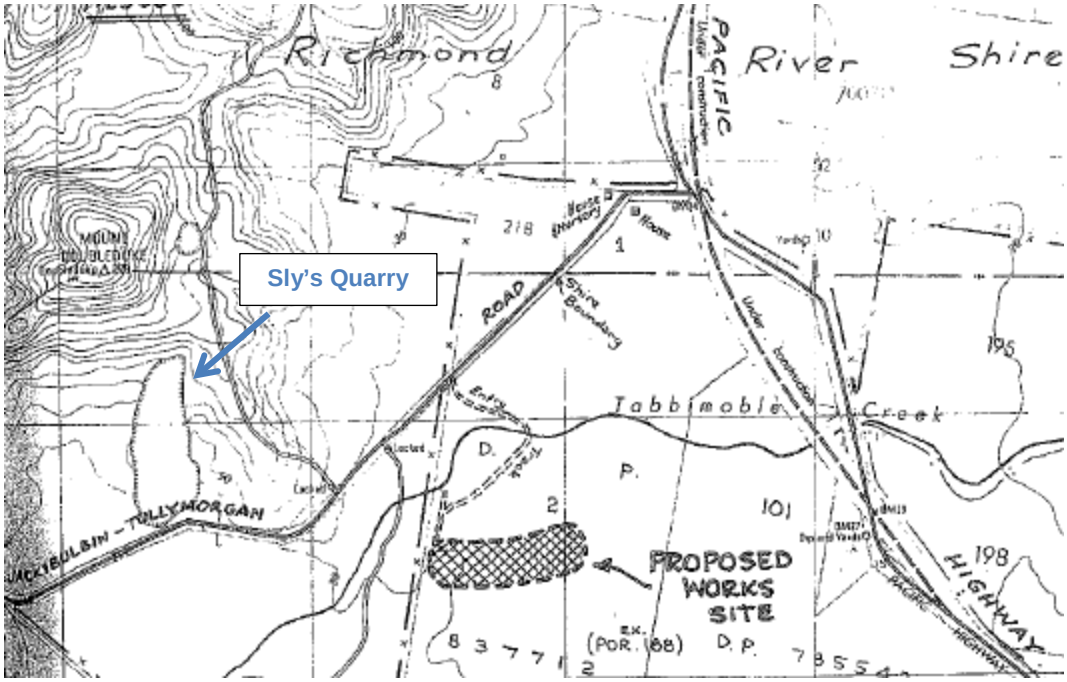


***Figure 4:*** *Location of nearby sand quarry site (hatched) on southern side of Tullymorgan Road.*

For the Pacific Highway, the TIA used the most recent RMS traffic data from two sites north and south of Tullymorgan Road, adjusted to take account of assumed growth of 2% per year. The average from the two sites was used to provide background traffic volumes at the intersection of Tullymorgan Road and the Pacific Highway.

*Traffic predictions and assessment*

A summary of the estimated and recorded background traffic volumes on Tullymorgan Road and the Pacific Highway as well as proposed daily vehicle movements to and from the quarry is shown in **Table 3** below.

***Table 3:*** *Existing and proposed vehicles per day (v/d) on Tullymorgan Road and the Pacific Highway*

| | Traffic Volumes (v/d) | | | | |
|---|---|---|---|---|---|
| | ***Background*** | ***Background with existing quarry[1]*** | ***Proposed quarry[2]*** | ***Proposed total*** | ***Increase above existing traffic (%)*** |
| **Tullymorgan Road** | | | | | |
| Light vehicles | 97 | 111 | 10 | 121 | 9 |
| Heavy vehicles | 11 | 91 | 170 | 261 | 186 |
| ***Total*** | **108** | **202** | **180** | **382** | **89** |
| **Pacific Highway** | | | | | |
| Light vehicles | 10,105 | 10,119 | 10 | 10,129 | 0.09 |
| Heavy vehicles | 2,141 | 2,221 | 170 | 2,391 | 4 |
| ***Total*** | **12,246** | **12,340** | **180** | **12,520** | **1.5** |

*Notes:*
[1] *Under maximum production of 100,000 tpa*
[2] *Under maximum production of 500,000 tpa*

The TIA anticipates quarry operations would increase total traffic volumes by 89% on Tullymorgan Road and 1.5% on the Pacific Highway under the maximum production scenario. Most of this increase is attributed to additional truck movements compared to existing operations. However, a higher number of truck movements was approved as part of the original consents. Specifically, 80-90 trucks from Site A and 50 trucks from Site B and C were allowed to access the site, which equates to a total of up to 140 trucks (280 movements) per day. Sites B and C no longer generate trucks movements because the resource has been exhausted. Nonetheless, the currently approved total is 15 laden trucks (30 movements) greater than the proposal. The proposal would therefore represent an overall decrease in the approved maximum number of trucks already allowed to access the site.

The TIA assumed that 10% of proposed truck movements (26 movements in total) would occur in the peak hour, against a background traffic volume of around 38 vehicles per hour on Tullymorgan Road. Based on this assumption and having regard to the *Austroads Guide to Road Design Part 4A* guideline, the TIA considered that the existing BAR/BAL type intersection of the quarry access and Tullymorgan Road would accommodate the proposed increase in traffic volumes.

While the TIA considers the existing intersection would accommodate the proposed traffic volumes, it is unclear whether the intersection has been constructed in accord with the relevant road design dimensions. Council considered that Newman should review the existing intersection and undertake a road safety audit of the haul route due to the proposed increase in vehicle movements and high traffic volumes on the Pacific Highway. The public submission also raised concerns over trucks passing an existing school bus stop and turning area near the Pacific Highway (see **Figures 5** and **6**). Newman has agreed to survey the existing intersection at the quarry access road and if necessary, undertake works to ensure it meets the dimensions of the relevant road design standard for a BAR/BAL treatment. This requirement would address one part of Council's request to review the haul route and has been included in the Department's recommended conditions of consent as part of the Traffic Management Plan (TMP) proposed for the development.

The original consent required Newman to upgrade Tullymorgan Road. Council confirmed in December 2001 that this had been completed to its satisfaction, as required by the conditions of consent. The Department's site visit indicated that Tullymorgan Road appeared to be in a good condition with few signs of pot holes or pavement cracking. There was also evidence of repair work to the road shoulder (see **Figures 7** and **8**).

The TIA identified that the existing intersection of Tullymorgan Road and the Pacific Highway would be sufficient to accommodate the proposed peak hour vehicle movements under maximum operating conditions in accordance with relevant Austroad standards. Newman has advised that this conclusion remains the case when truck movements expected from the other approved sand quarry located off Tullymorgan Road between the quarry and the Pacific Highway are taken into account (see **Figure 4**). The Department notes from the RMS's website that this intersection is approved to be upgraded to a seagull type intersection as part of the Pacific Highway upgrade (SSI 4963) and is expected to be completed by 2020.

Newman considered that a road safety audit would be unlikely to lead to new or different conclusions beyond those already reached in the TIA and noted that the RMS input to the environmental assessment requirements suggested that such an audit would only be required if road safety issues were raised. As there are no records of crashes along the haul route or its intersections, Newman considered there were no road safety issues that would justify the audit.

Overall, the Department is of the view that a road safety audit is not warranted for the following reasons:

- the proposal would result in a slight reduction of 15 trucks (or 30 movements) per day as compared to the maximum number of trucks that the quarry is currently permitted to operate;
- the 2.6 km section of Tullymorgan Road was sealed in accordance with the requirements of the original conditions of consent to Council's satisfaction and appeared to be in a state of good repair during the November 2015 site visit;
- Newman has agreed to review and, if necessary undertake works to ensure the quarry access intersection meets the dimensions of the relevant Austroads road design guide; and
- the intersection of Tullymorgan Road and the Pacific Highway is due to be upgraded within four years.

In relation to potential interactions between trucks and the school bus stop and turning area, the Department notes this is an existing situation. The Department has recommended, in line with RMS advice, that Newman prepares and implements a Drivers' Code of Conduct and has specifically identified the school bus stop and turning area as a matter to be addressed in this Code.

*Other traffic impacts*

The Department has recommended that trucks be allowed to enter the site before 7 am so as to avoid queuing on the public road network before the quarry commences operations. However, no loading activities would be permitted before this time. The Department has also included requirements in the TMP to minimise dust and tracking of sand and clay onto the public road surface. Furthermore, all material to be imported for product blending and rehabilitation purposes is to be done through back-loaded trucks to minimise the number of vehicle movements to and from the site. The Department has also included a condition requiring Newman to make an annual road maintenance contribution to Council in accordance with its endorsed *Section 94 Contribution Plan for Maintenance of Quarry Roads (1994)*.

***Figures 5*** *and* ***6*** *(top left to right): School bus stop and turning area and a quarry truck turning onto the Pacific Highway from Sly's Quarry*
***Figures 7*** *and* ***8*** *(bottom left to right): existing condition of Tullymorgan Road and intersection of Tullymorgan Road and quarry access road*

*Conclusion*
Sly's Quarry is an existing operation, which is well-located in close proximity to the State road network and an important SSI project, which it intends to supply. The Department would reduce the maximum number of trucks from that originally approved to access the site and would not adversely affect the condition, capacity or efficiency of intersections on the short (2.6 km) section of Tullymorgan Road to the Pacific Highway. Issues raised by Council and one objection have been addressed through recommended conditions of consent. However, the Department has not supported Council's proposal for a road safety audit.

### 5.2 Biodiversity

The proposal would involve the clearing of 11.1 ha of land comprising 10.5 ha of native vegetation and 0.57 ha of partly cleared land. Newman prepared a BAR as part of its EIS; however the Department and OEH identified several issues and requested additional information. As part of its response to this request, Newman undertook additional field surveys and submitted a revised BAR initially in December 2015 but again in February 2016. However, OEH was not satisfied that these additional surveys were adequate in supporting conclusions around whether particular species were or were not present on the site. Additionally, OEH requested revisions to the calculation of offset credits due to the use of an inaccurate input and to include additional threatened flora and fauna species that may potentially be present on or use the site. A further revised BAR was received on 12 April 2016 and was updated on 21 April to remove the Eastern long-eared Bat (*Nyctophilus bifax*) due to a lack of suitable breeding habitat on the site. OEH has since indicated that it was generally satisfied that Newman had addressed these outstanding issues and the Department and OEH are now satisfied that the BAR has been undertaken in accordance with the FBA.

*Overview of flora and fauna*
A total of 101 native flora species, including the Bordered Guinea Flower (listed as vulnerable under both the TSC Act and the EPBC Act) and 24 fauna species (19 birds, 2 reptiles, 2 amphibians and 1 mammal, none of which are listed as vulnerable or threatened) were identified on the site. Several other species were also identified as potentially existing on the site and/or using it for foraging purposes, including:

- four threatened flora species including the Leafless Tongue Orchid (*Cryptostlis hunteriana*) and A Grass (*Paspalidium grandispiculatum*) which are listed as vulnerable under both the TSC Act and EPBC Act; and the Slender Screw-Fern (*Lindsaea incisa*) and Native Milkwort (*Polygala linariifolia*) which are listed as endangered under the TSC Act;
- 23 threatened fauna species listed under the TSC Act and three threatened fauna species listed under the EPBC Act; and
- four migratory species listed under the EPBC Act, including the Rainbow Bee-eater (*Merops ornatus*), which has been previously recorded on the site.

No threatened or endangered vegetation communities exist on the site. Overall, the Department and OEH are satisfied that the investigations undertaken as part of the revised BAR have been sufficiently comprehensive.

*Avoiding and minimising impacts*
The quarry expansion has been designed to avoid and minimise impacts on biodiversity values. Specifically, the extraction area has been truncated in the north-eastern and south-western corners to avoid groupings of Bordered Guinea Flower (see **Figure 9**). However, around 1,130 Bordered Guinea Flower plants located across the central parts of the proposed extraction area would still be cleared. Newman believes it would not be feasible to further modify the extraction areas to minimise the number of Bordered Guinea Flower to be lost because it would limit the extent of the resource available for extraction. Newman also indicates that the volume and quality of the resource available to the west and south is unlikely to be suitable to serve as an alternate extraction area and that an extension to the east is prevented by the Crown road reserve.

While Newman can apply to close and acquire the Crown road reserve, an alternate expansion of the quarry footprint to the east may still result in the loss of Bordered Guinea Flower that may be present in that area, as well as reducing the beneficial presence of the ridge line in screening the quarry's visual and noise impacts from two residences (R1 and R2) to the east. The Department therefore accepts that Newman has implemented all reasonable and feasible measures to avoid impacts on the one threatened flora species identified on the site, in accordance with the FBA.

*Impacts on flora*
The proposal would result in the loss of 1,130 Bordered Guinea Flower plants and the clearing of 10.5 ha of native vegetation in a moderate to good condition and 0.57 ha of partly-cleared native vegetation.

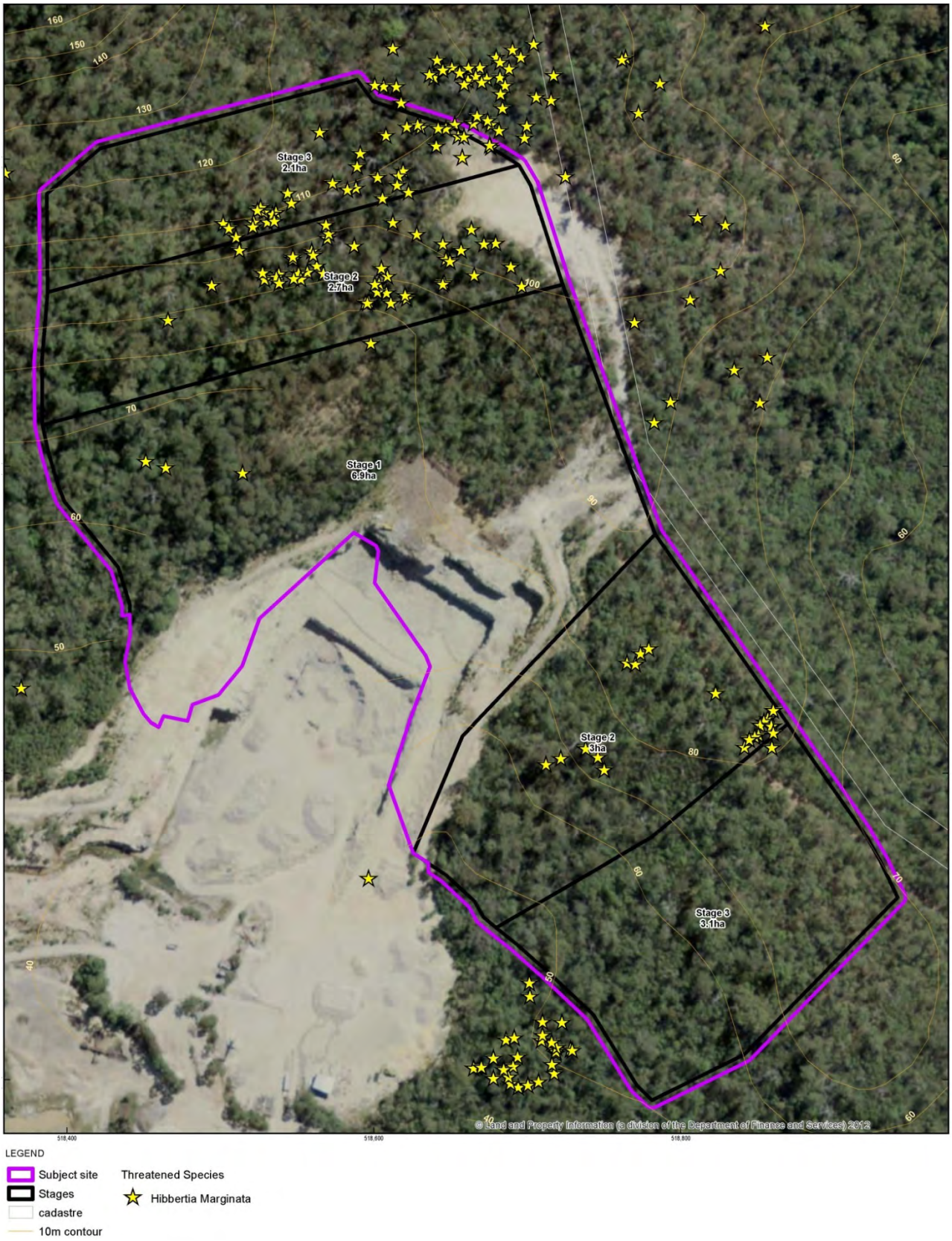


***Figure 9:*** Bordered Guinea Flower *recorded within and adjacent to the proposed extraction area*

Although the proposal would involve a key threatening process under the TSC Act (ie land clearing), the Department notes there are large numbers of the Bordered Guinea Flower (2,746) present in the proposed Biobank site with a further 1,967 individuals on the quarry site but outside the disturbance area. The

Department therefore considers the proposal would be unlikely to lead to the local population of the species becoming unviable or lead to an unacceptable fragmentation or isolation of habitat. In addition, the proposed clearing of 11.1 ha of land would be very small in the context of an estimated 450,000 ha of parks and reserves in the Clarence Valley LGA in which potential habitat for the Bordered Guinea Flower may exist. More generally, OEH believes that the Bordered Guinea Flower occurs in much larger populations (>10,000 individuals) and is likely to be secure in NSW, assuming adequate management of habitat in the public reserve system. Accordingly, the Department considers the proposed loss of individuals present on the site would not affect the long-term survival of the species.

The Department is also satisfied that the proposal is consistent with the objectives of OEH's conservation strategy for the Bordered Guinea Flower and has recommended that hygiene measures are implemented to avoid the spread of root rot fungus (*Phytophthora cinnamomi*), which is another key threatening process under the TSC Act. Overall, having considered the 7-part test and the TSC guidelines, the Department is of the view that the proposal would not have a significant effect on the Bordered Guinea Flower and that the clearing of 1,130 individuals is a residual impact that should be offset in accordance with the FBA and the Government's *Biodiversity Offsets Policy for Major Projects* (Offsets Policy).

The site was also identified as potential habitat for two other threatened flora species, being A Grass and Native Milkwort. Although these two species were not identified during field surveys, Newman has included them in the calculation of biodiversity credits in accordance with the FBA.

*Impacts on fauna*

The clearing of 11.1 ha of known and potential habitat and/or foraging resources would affect a range of fauna species. Although no threatened species were identified on site, the following threatened species have been assumed (under the FBA) to potentially occur:

- Powerful, Barking and Masked Owls (*Ninox strenua*, *Ninox connivens* and *Tyto novaehollandiae*, respectively) and the Square-tailed Kite (*Lophoictinia isura*);
- Glossy Black-cockatoo (*Calyptorhynchus lathami*), Little Lorikeet (*Glossopsitta pusilla*), Varied Sittella (*Daphoenositta chrysoptera*), Barred Cuckoo-shrike (*Coracina lineata*);
- Yellow-bellied Glider (*Petaurus australis*), Squirrel Glider (*Petaurus norfolcensis*), Brush-tailed Phascogale (*Phascogale tapoatafa*), Koala (*Phascolarctos cinereus*);
- Common Planigale (*Planigale maculata*) and Spotted-tailed Quoll (*Dasyurus maculatus*);
- seven microbat species and the Grey-headed Flying-fox (*Pteropus poliocephalus*); and
- Stephens' Banded Snake (*Hoplocephalus stephensii*).

In addition, four migratory species listed under the EPBC Act may occur on an occasional or transient basis, including the Fork-tailed Swift (*Apus pacificus*), White-throated Needletail (*Hirundapus caudacutus*), the Satin Flycatcher (*Myiagra cyanoleuca*) and the Rainbow Bee-eater. The EIS noted that the Rainbow Bee-eater had been previously recorded on the site.

Under the FBA, targeted searches for these species are not required. The FBA assumes that these species use the site for habitat and/or foraging resources based on the identified plant community types. This assumption informs the subsequent calculation of biodiversity credits required to offset the residual impact of the proposal. Newman's proposed biodiversity offset strategy is discussed further below.

In relation to the mandatory considerations under section 5A of the EP&A Act, Newman has undertaken species assessments of significance (AoS) for the species considered most likely to potentially use the site for habitat and/or foraging (see **Appendix D**). In accordance with the TSA Guidelines, these were determined based on field surveys, research and known sightings in the area. AoS were undertaken for the Koala, microchiropteran bats, Squirrel-glider, Brush-tailed Phascogale and the Common Planigale. The Department has taken into account the AoS, including any relevant recovery plans and the TSA Guidelines, as required under Section 5A of the EP&A Act. The Department considers the proposal would not result in a significant effect on these threatened species.

*Other impacts*

The Department has also considered the potential for the development to impact on:

- nearby regional habitat corridors;
- fauna due to vehicle strike; and
- an endangered fish species Oxleyan Pygmy Perch (*Nannoperca oxleyana*) listed under the EPBC Act and known to occur in the Tabbimoble catchment downstream and to the east of the Pacific Highway.

The Department is of the view that the proposed expansion footprint has avoided the regional habitat corridors to the south and notes that OEH no longer relies on the previously identified corridor to the west of the site for assessment purposes. The Department accepts Newman's proposed mitigation measures to minimise the risk of impact to fauna and aquatic environments through the implementation of a Drivers' Code of Conduct and sediment and erosion control measures, respectively. NSW Fisheries was satisfied with the implementation of the latter measure.

*Mitigation and management measures*

Consistent with the FBA, Newman has proposed a range of mitigation measures, which aim to minimise residual impacts through the implementation of an Environmental Management Program, including a Soil and Water Management Plan and a Biodiversity and Rehabilitation Management Plan. Specific measures proposed to be implemented include:

- a qualified ecologist undertaking pre-clearance surveys of flora and fauna habitat;
- implementing sediment and erosion controls and dust minimisation measures;
- monitoring water quality;
- managing the risk of bushfire;
- avoiding chemical spills;
- managing the risk of plant disease (such as Phytophthora, Chytrid fungus and Myrtle rust);
- managing weeds and edge effects; and
- managing vehicle movements to minimise vehicle strike on fauna, amongst others.

The Department and OEH consider these measures to be satisfactory.

*Biodiversity Offset Strategy (BOS)*

Newman proposes to offset residual impacts on biodiversity values by entering into a Biobanking Agreement with the Minister for the Environment relating to approximately 134 ha of land located to the south of the quarry, across Tullymorgan Road. The proposed BOS site is identified in **Figure 7** and a summary of the required and estimated number of credits is included in **Tables 4** and **5**.

The BOS estimated the credits expected to be generated from the proposed BOS site, based on current information. While this is based on some field surveys, OEH considered that further work, including additional field surveys and expert reports should be provided to confirm the exact final number of credits that would be generated by the BOS site. Due to the need to undertake some of this work during particular times of the year (eg in Spring), Newman has proposed to complete this work after determination.

The Department is generally satisfied that Newman has provided a clear strategy for the offsetting of the biodiversity impacts from the proposal. The proposed BOS site would be more than ten times larger than and features similar vegetation types to the area of impact. Based on current information, it is expected to generate an excess of both ecosystem and species credits.

OEH's concern is that this expectation remains uncertain until further field surveys or expert reports are undertaken to confirm (in particular) that these species have habitat in, or otherwise utilise, the BOS site. The Department notes the BOS site is located in close proximity to the development site and contains similar vegetation types. In addition, in the event that a shortfall in credits is identified, Newman could obtain additional credits in the market, or establish another offset site elsewhere in the vicinity. Therefore, the Department considers this to be a matter that can be addressed through conditions of consent.

Accordingly, the Department has not required that the additional field surveys and expert reports are completed prior to finalising its assessment report and recommendations. The Department has proposed conditions of consent which require Newman to implement its proposed BOS. In addition, in order to provide greater certainty that the minimum requirements of the BOS will be met, the number of required credits required has been included in the conditions (see **Appendix E)**. Further, a condition has been included which would require a bond to be submitted to the Department and held until such time as the BOS has been satisfactorily implemented. Subject to these conditions, the Department is satisfied the offset requirements would be implemented in accordance with the BOS, or through other acceptable alternate methods available under the Offsets Policy. As a result, the Department has concluded that the biodiversity values in the region would be protected notwithstanding approval of the proposed development.

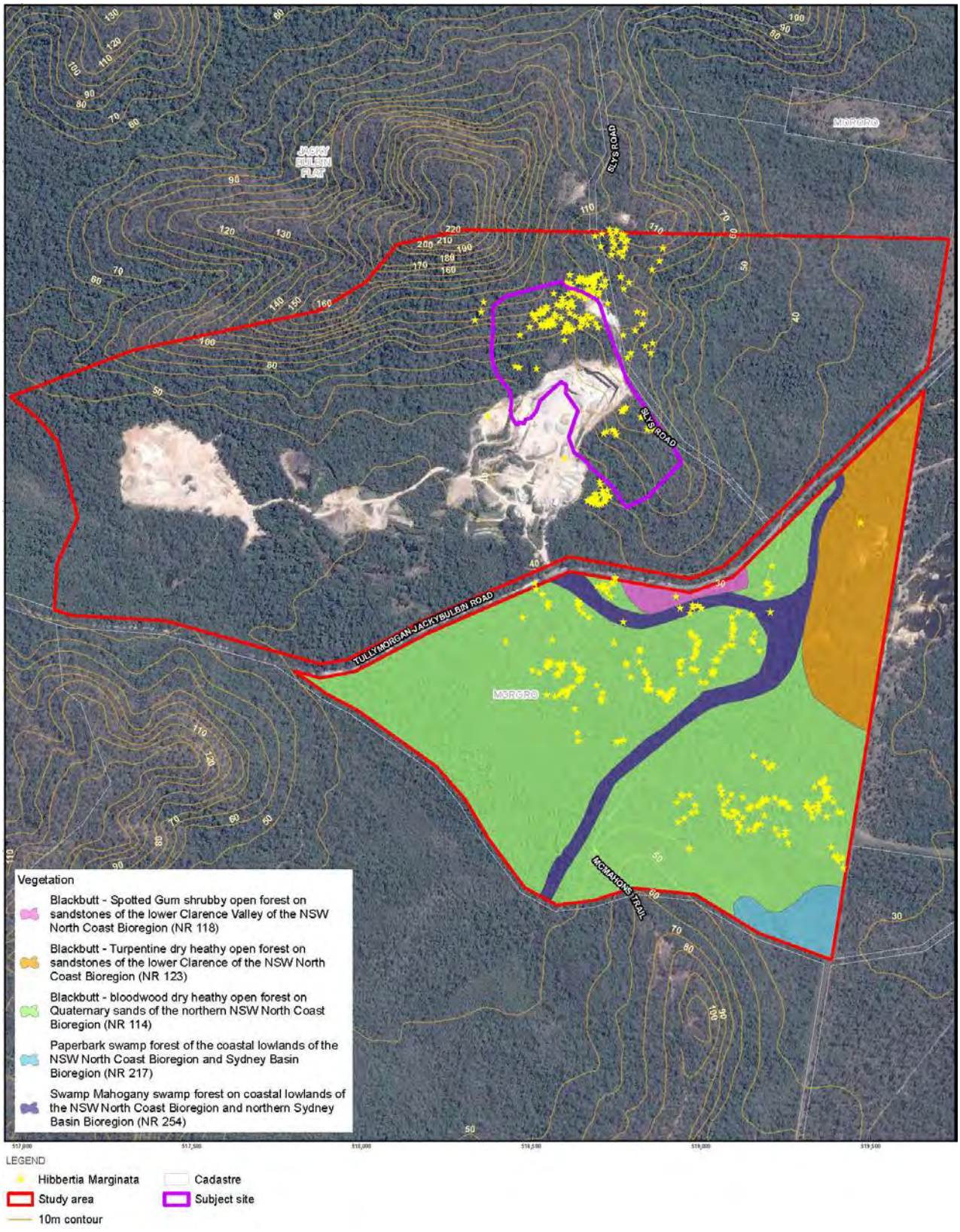


***Figure 10:*** *Proposed biodiversity offset area including plant community types and recorded* Bordered Guinea Flower

***Table 4:*** *Required and estimated ecosystem credits*

| Location | Vegetation Type | ID | Area (ha) | Credits |
|---|---|---|---|---|
| Quarry site | *Blackbutt-Turpentine dry heathy open forest* | NR 123 | 7.32 | 327 |
| | *Blackbutt-Bloodwood heathy open forest* | NR 115 | 4.89 | 567 |
| | *Total area* | | *12.21* | |
| | ***Total ecosystem credits required*** | | | ***894*** |
| Biobank site | *Blackbutt-bloodwood dry heathy open forest on sandstones* | NR 115 | 99.94 | 954 |
| | *Blackbutt-Turpentine dry heathy open forest on sandstones* | NR 123 | 18.49 | 179 |
| | *Swamp Mahogany swamp forest of the coastal lowlands* | NR 254 | 10.70 | 85 |
| | *Paperbark swamp forest of the coastal lowlands* | NR 217 | 3.94 | 31 |
| | *Blackbutt-Spotted Shrubby open forest on Sandstones of the lower Clarence Valley* | NR 118 | 1.80 | 17 |
| | *Total area* | | *134.87* | |
| | ***Total ecosystem credits estimated in the biobank site*** | | | ***1,266*** |

***Table 5:*** *Required and estimated species credits*

| Species Type | Extent of Impact | Species credits required | Species credits estimated in biobank site |
|---|---|---|---|
| Bordered Guinea Flower | 1,130 individuals | 15,820 | 19,467 |
| Koala | 12.2 ha | 317 | 958 |
| Common planigale | 12.2 ha | 317 | 958 |
| Squirrel glider | 12.2 ha | 268 | 958 |
| Brush-tailed Phascogale | 12.2 ha | 244 | 958 |
| | ***Total*** | ***16,966*** | ***23,299*** |

*Conclusion*

The Department is satisfied that Newman has designed the proposed quarry expansion in a way that seeks to avoid and minimise impacts on biodiversity values. The Department and OEH accept that residual impacts would be offset in accordance with the FBA and Offsets Policy through implementing the proposed BOS.

In addition, the Department has taken into account the factors under section 5A of the EP&A Act (ie the 7-part test and the TSA Guidelines) and formed the view that the proposal would not result in a significant effect on threatened species, populations, ecological communities, or their habitats. Overall, the Department is satisfied that the project's biodiversity impacts are acceptable subject to the proposed mitigation and offset measures.

### 5.3 Noise

A Noise Impact Assessment (NIA) was undertaken in accordance with the *NSW Industrial Noise Policy* (INP) and the *NSW Road Noise Policy* (RNP). Ambient noise levels were obtained through attended and unattended monitoring at two representative locations, which are depicted in **Figure 11**. Monitoring revealed a quiet rural noise environment with very low levels of around 29 dB(A) at noise logger 2, while much higher levels of 40 dB(A) were recorded near R1 and R2 due to road traffic noise from the Pacific Highway. The Department is satisfied the noise monitoring is representative of potentially affected noise receivers.

*Operational noise assessment*

Based on ambient noise levels, a project specific noise level (PSNL) of 35 dB(A) was applied to all residential receivers, with the exception of R1 and R2, which have higher background noise levels and therefore a higher PSNL of 45 dB(A). The NIA predicted noise levels from the proposal across several operating scenarios, including extraction in the existing and proposed quarry footprint under average and peak extraction rates and with and without rock-breaking activities. The noise modelling assumed all equipment would be operating at full sound power levels, which is unlikely and therefore provides a level of conservatism in the noise levels subsequently predicted.

The predicted noise levels under the two worst-case noise scenarios, which would involve peak daily production with rock-breaking in the existing (Scenario 1) and proposed quarry footprint (Scenario 2) are reported in **Table 6**. No exceedances to the PSNLs are predicted under either Scenarios 1 or 2 at any residential receiver. In fact, the noise model predicts levels to be at or below the PSNL of 35 dB(A), which is the lowest noise limit that can be recommended to be applied under the INP. The highest predicted noise levels are at R3, which is (as might be expected) the closest existing receiver.


***Figure 11:*** *Location of ambient noise monitoring and nearby residential receivers*

***Table 6:*** *Predicted noise levels at receivers under maximum operating scenarios*

| ***Receivers*** | ***Distance to quarry (m)*** | ***PSNL*** *dB(A)* | ***Predicted Noise Levels*** $L_{eq}$ *dB(A)* | |
|---|---|---|---|---|
| | | | ***Scenario 1*** | ***Scenario 2*** |
| R1 | 1600 | 45 | 28 | 29 |
| R2 | 1700 | 45 | 28 | 28 |
| R3 | 1500 | 35 | 35 | 33 |
| R4 | 2600 | 35 | 26 | 24 |
| R5 | 2700 | 35 | 25 | 23 |
| R6 | 2800 | 35 | 25 | 23 |
| R7 | 3200 | 35 | 23 | 21 |
| R8 | 3600 | 35 | 22 | 20 |
| R9 | 3300 | 35 | 23 | 21 |
| R10 | 3500 | 35 | 22 | 20 |
| R11 | 3000 | 35 | 24 | 22 |

The public submission from the owner of an adjoining block of vacant land west of the quarry, objected to the proposal on the basis of several noise impacts, including that:

- an increase in production would result in intermittent noise becoming continuous;
- the shape of the quarry may amplify sound in the direction of a proposed house site;
- no noise monitoring was undertaken on the objector's property; and
- it is unclear whether proposed mitigation measures would be effective in reducing noise levels at the proposed house site.

The Department considers it possible that existing residents would perceive some intensification of operations under peak production but that this would be within acceptable criteria, as demonstrated by the very low noise levels predicted in the NIA. These predictions have taken into account the shape of the existing and proposed quarry. The Department is satisfied with the representative noise modelling undertaken. Additionally, no consideration of mitigation measures under the *Voluntary Acquisition and Mitigation Policy* (VLAMP) is

required at the objector's property (or any other property). The NIA contains a contour map for Scenario 2 which indicates that predicted noise levels would not exceed the 35 dB(A) PSNL over the great majority of the objector's property, including at the proposed house site.

*Traffic noise impacts*
The NIA also assessed the potential for noise from truck movements on the two receivers (R1 and R2), which are located on the haul route and near the Pacific Highway. The NIA predicted total noise levels of 49 dB(A) and 52 dB(A) under average and maximum operating scenarios, respectively. Most of this noise would be existing traffic noise from the Pacific Highway. These predicted noise levels would comply with the relevant criterion of 55 dB(A) under the RNP.

*Hours of operation*
The proposed hours of operation were a matter of interest for the EPA, Council and the public objector. The existing hours of operation are 7 am – 5 pm on weekdays and 7 am – 1 pm on Saturdays. The proposal seeks to extend the hours to allow staff to access the site from 6:30 am (but not operate machinery until 7 am). Afternoon hours would also be extended to 6 pm on weekdays and 4 pm on Saturdays.

The EPA and Council both accepted extended weekday hours subject to no machinery operating before 7 am and also accepted short-term variations to allow operations on Saturday afternoons on a case-by-case basis. The Department understands these agencies are keen to ensure quarries have consistent operating hours and to protect rural-residential amenity. This concern was also reflected in the public submission.

Newman has stated that it requires longer Saturday afternoon hours to enable supply of material to the Pacific Highway upgrade project. The approved standard construction hours for this project (SSI 4963) are 8 am to 5 pm on Saturdays.

The Department believes a suitable outcome is to allow Saturday afternoon operations until 4 pm only during times when the quarry is fulfilling a contract for the supply of material to the Pacific Highway upgrade project. Otherwise, the quarry should be restricted to 1 pm on Saturdays, which is consistent with the existing consent.

The EPA and Council also requested that the current approved 7 am start time on Saturdays be restricted to 8 am for the same reasons. The Department does not agree. The NIA expects the quarry would generate fairly low noise levels, which while noticeable compared to the generally quiet rural ambient noise environment, would be well-within acceptable noise limits under the INP. The Department also disagrees with the submitter's suggestion that afternoon hours should be restricted in winter months to avoid the operation being perceived as a night-time operation.

Accordingly, the Department supports Newman's proposed hours of operation, which in effect would not change, with the exception of an additional three hours on Saturday afternoons. However, in order to balance protection of the rural residential amenity of the area with the need to supply the Pacific Highway upgrade project, the Department has recommended that these additional hours of operation are restricted to when the quarry is supplying that project.

*Conclusion*
The Department is satisfied the NIA has been undertaken in accordance with relevant government policies and that noise levels are expected to comply with PSNLs. The EIS states that Newman would undertake compliance noise monitoring at residences. If exceedances are identified, Newman would consider mitigation measures at the quarry. These measures would be incorporated into the Noise Management Plan required under recommended conditions of consent. Overall, the Department is of the view the proposal would be unlikely to compromise the existing amenity of nearby residents.

### 5.4 Water Resources

The EIS includes an assessment of the potential risks of the proposed development to surface and groundwater resources. The surface water assessment was based on applying the Model for Urban Stormwater Improvement Conceptualisation (MUSIC), which is contrary to the relevant guideline, *Managing Urban Stormwater Soils and Construction Volume 1 and Volume 2E – Mines and Quarries* (Volume 2E guidelines). In order to rectify this, the EPA recommended Newman prepare and implement a Soil and Water Management Plan (SWMP) in accordance with the Volume 2E guidelines. The EIS's groundwater assessment was done in accordance with the NSW *Aquifer Interference Policy* (AIP) to the satisfaction of DPI Water.

*Surface Water*

- *Existing water management system*

Newman operates an existing water management system comprising a series of sediment ponds and dams. Clean water runoff is diverted around the quarry while dirty water from the quarry flows into a sediment pond of 2.4 megalitres (ML)) capacity, which in turn overflows to the main sediment dam (12.6 ML capacity). The site infrastructure (office, weighbridge, wash plant and other buildings) all drain into three smaller basins (total 0.55 ML capacity) which also overflow to the main sediment basins. Water may then be discharged from the site through a licensed discharge point (LDP) from the main sediment dam to Tabbimoble Creek. The LDP is regulated by the EPA under the quarry's existing EPL.

- *Water balance*

The EIS included a site water balance calculated on the basis of the increased size of the quarry (and catchment area for dirty rainfall runoff) and proposed operating scenarios (see **Table 7**). The first scenario assumes the quarry operates under maximum operating conditions and meets its annual limit of 500,000 tonnes in 125 days (4,000 tonnes per day). The second scenario has a smaller rate of extraction, considered to represent average operating conditions over a full working year and would therefore require more water. **Table 7** shows that Newman expects the proposal to have sufficient water under all rainfall conditions to supply all operational needs including dust suppression, sand washing and amenities.

***Table 7:*** *Site water balance under different operating scenarios*

| ***Extraction rate scenarios*** | ***Runoff from proposed quarry area (ML/year)*** | ***Water demand (ML/year)*** |
|---|---|---|
| 4,000 tonnes per day for 125 days | 30.2 (dry year)<br>159 (average year)<br>330 (wet year) | 4.05 |
| 1,500 tonnes per day for 365 days | | 6.81 |

The EIS utilised MUSIC modelling to determine that the main sediment dam would need to be doubled in size from 12 ML up to 25 ML. The EPA and the Department did not accept this methodology and required Newman to demonstrate the upgrade would meet the relevant Vol 2E guideline. Revised calculations based on a 5 day 90$^{th}$ percentile rainfall event in the region confirmed the capacity of the existing sediment basin (12,590m$^3$) would need to be increased by around 60% in size up to a total capacity of around 20,355 m$^3$. Newman's proposal to increase the size of the dam to 25 ML would satisfy this requirement.

- *Water quality*

The EIS reports limited on-site water quality monitoring, including one sample from 2013 and two samples from 2014. These were taken from the main sediment dam on the site and indicate that pH and Total Suspended Solids (TSS) were within the limits set under the existing EPL. However, one sample in August 2014 recorded an Electrical Conductivity (EC) level of 740 µS/cm, which exceeds the limit of 350 µS/cm under the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC guidelines). Additionally, the EIS has utilised MUSIC modelling, which predicts average Total Phosphorous (TP) and Total Nitrogen (TN) concentrations of 0.13 and 1.41 mg/L, respectively. These are more than double the relevant criteria in the ANZECC guidelines.

The EIS discussed these results in the context of broader water quality investigations undertaken as part of the Pacific Highway upgrade project (SSI 4963) wherein it was identified that many local waterways, including Tabbimoble Creek, have a history of water quality problems and regularly fail to meet the ANZECC guidelines. It was also argued in the EIS that MUSIC model predictions should be treated with caution in that it is not normally applied to quarry developments. The EIS concluded that on-site treatment measures and management practices would be sufficient to control site runoff.

The Department considers there is insufficient information presented in the EIS to clearly identify whether the existing quarry operation is contributing to the low water quality sometimes present in local watercourses. The Department does not accept the existing state of the local watercourses as being a reason to allow ongoing impacts, particularly as NSW Fisheries has identified the potential presence of the endangered fish species (Oxleyan Pygmy Perch) in the Tabbimoble catchment further downstream. In response to these concerns, Newman has suggested monitoring Tabbimoble Creek upstream and downstream of the site and also below the LDP as a precautionary measure to determine the background water quality and the quality of water entering the environment from the site. Any trends of exceedances would be managed in consultation with the EPA. The Department considers this to be a suitable precautionary approach to this issue. These requirements have been reflected in the condition of consent requiring a SWMP.

*Groundwater*

The EIS also includes an assessment of the potential impact of the proposal on groundwater sources. The local groundwater system consists of a Quaternary-age alluvial and colluvial groundwater source (ie shallow alluvial groundwater) and an underlying porous and fractured rock groundwater source (see **Figure 12**). Based on low yields from existing domestic and stock bores near the site, the EIS has assessed both of these groundwater sources as being 'less productive' in accordance with the AIP.

Mapped alluvial sediments are located approximately 60 m to the south and southwest of the edge of the proposed extraction footprint (see **Figure 12**). The EIS states the proposal would not intercept the associated alluvial groundwater source and has proposed the installation of a single shallow standpipe bore to monitor this situation. DPI Water considers that a more extensive network is required comprising, at a minimum, three monitoring bores. The Department has included this requirement in its recommended conditions of consent.

In relation to the porous and fractured rock groundwater source, existing bores east of the site reveal water bearing zones at around 25 m below ground level. The natural surface level near these bores is approximately 25 m Australian Height Datum (AHD), which indicates that the groundwater level is around 0 m AHD, similar to what would be expected at the coastline. As regional groundwater flows are anticipated to be from inland areas to the coast, the groundwater level in the porous and fractured rock groundwater source near the quarry is expected to be at a similar level of around 0 m AHD, consistent with those bores to the east.

There has been no groundwater seepage from the quarry face to date, consistent with the identification of the water table as being well below the depth of extraction. The proposed quarry expansion would not increase the existing extraction depth of 44 m AHD and groundwater is therefore not expected to be intercepted. The Department accepts that the proposal would be unlikely to affect the porous and fractured rock groundwater source. In accordance with DPI Water's recommendation, the Department has included in a condition of consent a mechanism to require licensing of any unforeseen groundwater inflows into the quarry.

*Conclusion*

The Department is satisfied that the proposal would not present an unacceptable risk to surface or groundwater resources, subject to recommended conditions of consent and the implementation of the proposed mitigation and management measures in the EIS, including:

- undertaking water quality monitoring in Tabbimoble Creek upstream and downstream of the site and also below the LDP;
- implementing sediment and erosion control measures and training all staff and sub-contractors in these practices and requirements;
- re-using water captured on-site to reduce the quantity of discharges to the environment;
- complying with the EPA's EPL for the site;
- implementing measures to avoid spills and introduction of pollutants into the site water management system;
- installing a minimum of three monitoring bores with automatic water level recording instrumentation to measure any impact on the alluvial groundwater source and establishing a methodology for determining threshold water level criteria for this aquifer and contingency measures in the event that these thresholds are breached; and
- undertaking regular reporting.

### 5.5 Rehabilitation

Newman's rehabilitation strategy and plan involves ongoing rehabilitation of Sites B and C (see **Figure 1**) and rehabilitation of the proposed quarry expansion following the completion of extraction. Newman presently imports clean fill to Sites B and C in order to restore pre-extraction ground levels (see **Figure 13**). However, no seeding program has yet been implemented and vegetation cover is sparse, consisting of small shrubs and trees (see **Figure 14**).

The Department agrees with Council that existing rehabilitation obligations for Sites B and C should continue to apply in the new consent. These have been included in the recommended condition requiring the preparation of a Biodiversity and Rehabilitation Management Plan. This would also require Newman to set out on a progressive, rolling triennial basis how it would go about rehabilitating disturbed areas and reporting on progress made. The Department considers this would assist in improving rehabilitation outcomes on site.

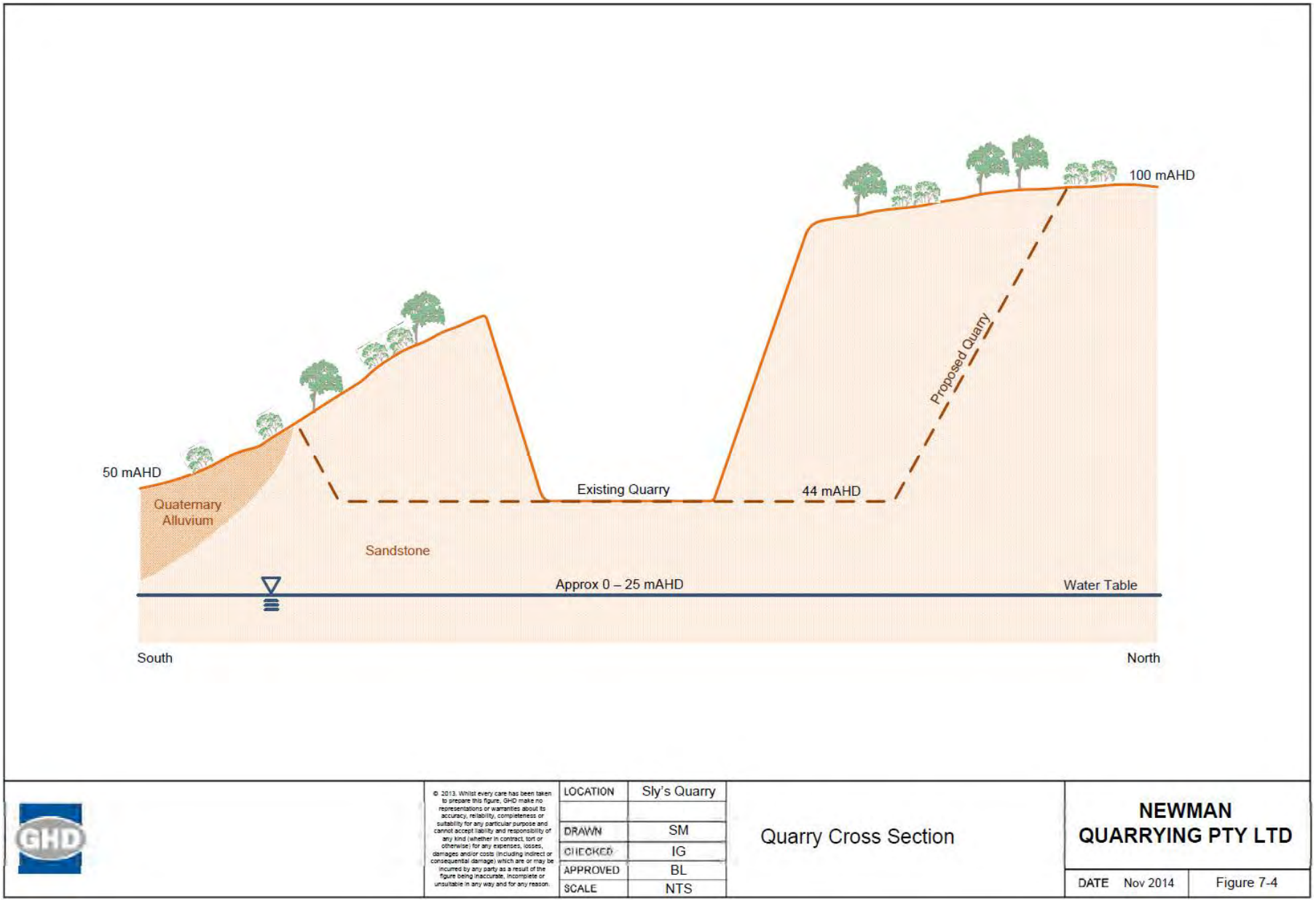


***Figure 12:*** *Conceptual relationship of the proposed quarry extension to groundwater aquifers*


***Figures 13** and **14** (left to right)**:** Fill material being spread over past sand mining site and previously rehabilitated land in Site C (refer **Figure 1** for location)*

## 5.6 Other Issues

The assessment raised a number of other relevant issues, which are addressed in **Table 8** below.

***Table 8**: Other Issues*

| *Issue* | *Consideration* | *Conclusion & Recommendation* |
|---|---|---|
| *Air quality* | Dispersion modelling indicates that, under peak conditions with dust controls in place, the quarry is expected to cause a small incremental increase in $PM_{10}$ (between 1-3 $\mu g/m^3$) at residential receivers. The modelling also predicts incremental increases in total suspended particulate (TSP) matter and dust deposition ranging between < 1-3 $\mu g/m^3$ and 0.01-0.02 $g/m^2$/month, respectively, at residential receivers. These very small levels would not exceed the EPA's air quality criteria for 24 hour or annual average periods.<br><br>Dust emissions from blasting were estimated to be around 1.29 $\mu g/m^3$ or 3% of the $PM_{10}$ 24-hour criterion. Based on the frequency of blasting (up to two blasts per month) and the negligible levels of deposited dust and small levels of airborne particulate matter predicted, the cumulative impact from operations and blasting is not expected to exceed the EPA's air quality criteria at any residential receiver. | The Department notes that Newman would implement mitigation measures, including using water sprays on equipment and haul roads to suppress dust.<br>The Department has included the EPA's recommended conditions of consent together with a requirement for Newman to implement an Air Quality Management Plan throughout the life of the quarry operation.<br><br>Subject to these conditions, the Department is satisfied the proposal would have a minimal air quality impact on surrounding receivers. |
| *Blasting* | The potential impacts of blasting and vibration were assessed in accordance with the *Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration* (ANZECC). Blast monitoring conducted in November 2014 concluded that the recommended limit of 5 mm/s for ground-borne vibration and 115 dB(L) for airblast overpressure would be achieved at a minimum distance of 250 m and 650 m respectively from the blast location. As the nearest potential residential receiver (R3) is 1,500 m from the quarry, the proposal is expected to comply with the relevant ANZECC guideline at all receivers. | The Department is satisfied that blasting impacts have been satisfactorily assessed and would not unduly affect nearby residents. A condition has been recommended to require Newman to implement a blast notification program as part of a Blast Management Plan. |
| *Aboriginal heritage* | OEH advised that the EIS's Cultural Heritage Due Diligence Assessment did not meet its Aboriginal stakeholder consultation guidelines.<br><br>A revised Aboriginal Cultural Heritage Assessment (ACHA) was submitted by Newman as part of the RTS. One Aboriginal stakeholder, the Yeagl Local Aboriginal Land Council, registered interest and participated in a site visit. An additional assessment of the potential for presence of | The Department and OEH are satisfied that the proposal would not result in unacceptable impacts to Aboriginal heritage values. OEH has recommended the imposition of conditions to reflect recommendations in the revised ACHA.<br><br>The Department has included its standard condition, which establishes a |

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| | Aboriginal objects was also undertaken.<br><br>The revised ACHA concluded that it was unlikely for surface cultural heritage sites or relics or subsurface deposits of significant Aboriginal heritage to occur within the proposed extraction area and that it contained no areas of cultural significance to Aboriginal people. | procedure in the event of an unexpected find of Aboriginal material. The Department considers this condition satisfies the recommendations in the revised ACHA. |
| *Non-Aboriginal heritage* | No non-Aboriginal heritage was identified on or near the site. Historical aerial photos indicate the area was primarily characterised by bushland until quarrying activities commenced on site sometime between 1966 and 1980 (refer photos in the ACHA). | The Department accepts the proposal would not affect historic heritage. |
| *Visual* | The EIS states that no views of the proposed quarry expansion are likely for travellers on the Pacific Highway, Tullymorgan Road or residents in the vicinity of the site. The objector disagrees and believes the northern (highest) part of the extraction area would be visible in the surrounding area.<br><br>The Department accepts that the proposal would be obscured from travellers on Tullymorgan Road and the Pacific Highway due to intervening topography and dense vegetation. The Department considers it unlikely the quarry would be visible from prominent or trafficked points in the surrounding area. Newman proposes mitigation measures including progressive rehabilitation to minimise the time during which the quarry could potentially be visible. | The Department is satisfied the proposal would be screened from travellers on Tullymorgan Road and to residents in the area. No views of the quarry are available from the Pacific Highway. |
| *Risks and hazards* | The proposal may include the use and storage of materials that are hazardous to humans and the environment. In order to reduce risks associated with hazardous materials, Newman would implement management protocols for handling hazardous materials on site.<br><br>The site is also situated in an area of bushfire-prone land. The RFS did not object to the proposal but requested that preparation of a Bushfire Management Plan is required by conditions of consent. | The Department has included a condition to require that storage of dangerous goods meets relevant Australian Standards and the Dangerous Goods Code.<br><br>The Department has included the RFS's recommended condition. |
| *Socio-economic* | The proposal would deliver the following benefits to the region:<br>• continued direct employment of 4 full-time personnel, increasing up to 8 under peak operating conditions;<br>• indirect employment of truck drivers and off-site maintenance and supply services;<br>• use of existing infrastructure, minimising the quarry footprint and potentially avoiding the need for an entirely new development site; and<br>• provision of a hard rock resource for the building and construction industry in the region.<br><br>Newman has also agreed to contribute towards the maintenance and upkeep of Tullymorgan Road. The project is expected to provide a locally-sourced supply of hard rock for the Pacific Highway upgrade between Woolgoolga and Ballina. | The Department considers the proposed development would result in a range of socio-economic benefits to the local and regional economy, without undue additional demand on local infrastructure and community services.<br><br>The Department has recommended a condition to secure the agreed road maintenance contribution between Newman and the Council. |
| *Consultation, ambit claim, past compliance with conditions of consent and proposed conditions* | The Department has given consideration to additional issues raised in the public objection. The Department considers that the objector has now been provided with an adequate opportunity to review and comment on the proposal, including discussing the proposal with Newman's consultant.<br><br>The Department does not consider the proposal represents an ambit claim and notes that Newman has indicated production is likely to drop below 500,000 tpa after the completion of the Pacific Highway upgrade works. The Department has not given great weight to the past | The Department has recommended conditions of consent that require Newman to report its annual production on a regular basis. The Department's Compliance branch will also be responsible for monitoring Newman's future compliance with its conditions of consent. |

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| | exceedances of Newman's extraction limit in determining whether the development application is approved. Instead, the Department has focussed on the merits of the proposal, including benefits associated with providing local supply of road construction material for the Pacific Highway upgrade. |

## 6 RECOMMENDED CONDITIONS

The Department has recommended conditions of consent for the development (see **Appendix E**) that:

- prevent, minimise, and/or offset adverse impacts;
- set standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for ongoing environmental management.

The conditions recommended by Council and State agencies have also been incorporated where appropriate. Newman's consultant has reviewed and accepted the recommended conditions.

## 7 CONCLUSION

The Department has undertaken an assessment of the development application, including the EIS, submissions received on the proposal from agencies and the public and Newman's RTS in accordance with the relevant statutory requirements of the EP&A Act and EP&A Regulation.

The assessment found that the proposal would result in a slight reduction in the maximum number of trucks currently allowed to access the site. The Department considers the existing road network is sufficient to accommodate the proposed number of trucks under peak operations, subject to the proposed review and (if necessary) consequent improvement works to the intersection of the quarry access road and Tullymorgan Road to ensure that this intersection meets the relevant road design standard. The Department does not consider that there would be value in obtaining a road safety audit for the remainder of the short 2.6 km haul route to the Pacific Highway, particularly as the intersection with the Pacific Highway is programmed to be upgraded in the next four years. Overall, the traffic and transport impacts of the proposal are acceptable.

In terms of biodiversity impacts, the Department is satisfied that Newman has avoided and minimised impacts to flora and fauna, in particular on the Bordered Guinea Flower. The Department and OEH have accepted the proposed biodiversity offset strategy, which would ensure that the residual impacts would be offset such that there would be no net loss to biodiversity values in the region.

The Department is also satisfied that the existing water management system would be upgraded sufficiently to ensure that increased runoff from the expanded quarry is retained and treated on site, prior to discharge to the environment. A water quality monitoring program has been included in conditions in order to resolve uncertainties associated with the EIS's use of MUSIC modelling and observed exceedances to ANZECC water quality guidelines. No impacts are expected to the nearby shallow alluvial groundwater source. However, a monitoring program recommended by DPI Water would be implemented to monitor and confirm this expectation. Similarly, no impacts to the porous and fractured rock groundwater source are expected as the proposed depth of extraction would not intercept the water table. In the event of unforeseen groundwater inflows, recommended conditions would require Newman to obtain an appropriate licence from DPI Water.

The EIS has demonstrated that the quarry is located in an area in which topography and dense vegetation minimise the propagation of noise. The quarry is predicted to comply with relevant noise criteria at all existing and potential residential receivers. The Department has given careful consideration to balancing Newman's proposed expansion of operations with maintaining the amenity of a rural area. As a result, the quarry's operations on Saturday afternoons will be permitted until 4 pm only when it is supplying the Pacific Highway upgrade project. Otherwise, operations on Saturdays will be limited to 1 pm.

In summary, the Department is satisfied that potential impacts of the proposal can be mitigated or managed to ensure an acceptable level of environmental performance, whilst allowing the economic development of a hard rock construction material resource. The quarry is well-located in close proximity to an approved SSI project, which it intends to supply. It is expected to generate positive socio-economic benefits in the region as a result of ongoing and new employment. The Department is satisfied the proposal that would not significantly

compromise the amenity of nearby residents or adjoining property owners and that it is in the public interest and should be approved subject to conditions.

## 8 RECOMMENDATION

It is RECOMMENDED that the Executive Director, Resource Assessments and Compliance, as delegate for the Minister:

- **considers** the findings and recommendations of this report;
- **approves** the development application, subject to conditions; and
- **signs** the attached instrument of consent (see **Appendix E**).

Howard Reed

Howard Reed 28.4.16
**Director Resource Assessments**

Oliver Holm
**Executive Director**
**Resource Assessments and Compliance**

## APPENDIX A – ENVIRONMENTAL IMPACT STATEMENT

See the Department's website at www.majorprojects.planning.nsw.gov.au.

## APPENDIX B – ENVIRONMENTAL PLANNING INSTRUMENTS

***SEPP No. 14 – Coastal Wetlands***
Although a wetland listed under this policy has been identified downstream of the site, the proposal would not involve works in or near the wetland. The proposal would therefore remain consistent with the aims and objectives of this policy.

***SEPP No. 33 – Hazardous and Offensive Development***
The Department is satisfied that the development is not potentially hazardous or offensive, and that the development is generally consistent with the aims, objectives and requirements of SEPP 33.

***SEPP No. 44 – Koala Habitat Protection***
The site contains potential Koala habitat as defined under SEPP 44 due to the presence of Tallowwood (*Eucalyptus microcorys*), Red Mahogany (*Eucalyptus resinifera*) and Pink Bloodwood (*Corymbia intermedia*). However, targeted searches at the site did not identify Koalas or evidence of their presence. Accordingly, the site is not considered to be 'core Koala habitat', which is consistent with Council's Koala Plan of Management wherein Koala populations are identified in Ashby, Woombah and Iluka. The Department considers the proposal would be consistent with the aims, objectives and requirements of SEPP 44.

***SEPP No. 55 – Remediation of Land***
The Department is satisfied that the development area does not have a significant risk of contamination given its historical and current land uses, and that the development is generally consistent with the aims, objectives, and provisions of SEPP 55.

***SEPP (Rural Lands) 2008***
The site is not identified as State or regionally significant agricultural land and would not impact on any additional land currently managed for agriculture. The Department is satisfied that the provisions of this SEPP do not apply to the proposed development.

***SEPP (Mining, Petroleum Production and Extractive Industries) 2007***
Under clause 7 of the Mining SEPP, the development is permissible with consent (see **Section 3.2**). Part 3 of the Mining SEPP lists a number of matters that a consent authority must consider before determining an application for consent for development for the purposes of an extractive industry, including:

- compatibility with other land uses;
- the voluntary land acquisition and mitigation policy;
- natural resource management and environmental management;
- resource recovery;
- transport; and
- rehabilitation.

The Department is satisfied that the development is able to be managed in a manner that is generally consistent with the aims, objectives and relevant provisions of the Mining SEPP.

***SEPP (State and Regional Development) 2011***
The proposal meets the criteria in Schedule 1 of the State and Regional Development SEPP for classification as a State Significant Development (see **Section 3.1**). The Department is satisfied that the development can be undertaken in a manner that is generally consistent with the aims, objectives and provisions of the SEPP.

***North Coast Regional Environmental Plan***
The *North Coast Regional Environmental Plan* (which is deemed to be a SEPP) requires the impacts of development on agricultural activities, wetlands and fishery habitats to be considered before consent may be granted. The Department is satisfied that the proposal would not impact on the use of adjoining or adjacent land for permissible agricultural purposes, or cause a loss of prime crop or pasture land. The Department has taken into consideration (see Section 5) the potential for the proposal to impact downstream wetlands and fishery habitats. The Department and DPI Fisheries are satisfied that the proposal would be acceptable subject to the inclusion of recommended conditions of consent, which require the implementation of sediment and erosion control measures over the life of the development as well as monitoring of the quality of water discharged to the downstream environment. Finally, the proposal has included a conceptual rehabilitation plan, which would be refined under recommended conditions of consent.

The Department therefore considers that the relevant provisions of the *North Coast Regional Environmental Plan* have been met and the proposal would be consistent with the policy's aims and objectives.

***Clarence Valley Local Environmental Plan 2011***

The site is zoned RU2 Rural Landscape under the *Clarence Valley Local Environmental Plan 2011* (the LEP). An extractive industry is not a permissible land use in the RU2 zone under the LEP, however the proposal is made permissible by the overriding operation of clause 7(3) of the Mining SEPP which permits extractive industries on the site, subject to consent.

## APPENDIX C – SUBMISSIONS

See the Department's website at www.majorprojects.planning.nsw.gov.au

## APPENDIX D – RESPONSES TO SUBMISSIONS AND OTHER CORRESPONDENCE

See the Department's website at www.majorprojects.planning.nsw.gov.au

## APPENDIX E – RECOMMENDED CONDITIONS OF CONSENT

See the Department's website at www.majorprojects.planning.nsw.gov.au