



**Planning &  
Infrastructure**

## ***MAJOR PROJECT ASSESSMENT***

### ***Oberon White Granite Quarry Project (07\_0122)***



Director-General's  
Environmental Assessment Report  
Section 75I of the  
*Environmental Planning and Assessment Act 1979*

August 2012

Cover Photo: Images of granite on the site

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## EXECUTIVE SUMMARY

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The Mudgee Stone Company Pty Ltd (Mudgee Stone) proposes to expand the operation of its existing alaskite (white granite) quarry, located about six kilometres east of Oberon.

The Project – known as the Oberon White Granite Quarry Project – increases approved alaskite extraction at the existing quarry from 25,000 tonnes per annum (tpa) to 250,000 tpa for a period of 30 years. Alaskite will continue to be extracted by conventional drilling and blasting techniques before it is crushed and screened on-site and transported by road. The Project seeks approval for up to 40 truck-loads a day (80 one-way movements).

The Department exhibited the Environmental Assessment (EA) of the project between 25 November 2010 and 17 January 2011, and received five public agency submissions and 12 public submissions (11 objections and 1 letter of support). While none of the agencies objected to the project, the Office of Environment and Heritage was dissatisfied with the level of detail in the Proponent's flora assessment. However, this matter is comprehensively addressed by the Department in this report. The Department has recommended conditions to manage this issue, and the Department notes OEHL has accepted the Department's recommended conditions.

Issues raised in the public submissions include noise, dust, surface and groundwater, ecology, rehabilitation, visual amenity, traffic and market demand. Detailed submissions were received from the closest residents.

The Department has considered the issues raised by the agencies and community in detail. Whilst the Proponent made some attempt to address concerns in the Response to Submissions Report Statement of Commitments and other supplementary information, the Department has made further recommendations that seek to protect the amenity of the local residents. For instance, whilst the Proponent sought to operate in the night/morning shoulder and on Sundays, the Department has recommended that operations be restricted to day time only, with no operations on Sunday.

Overall, the Department's assessment has found the project requires comprehensive and proactive noise mitigation and management to ensure acceptable noise levels and to minimise adverse impacts on the amenity of nearby homes. The Department has recommended a range of approval conditions to ensure that these impacts, and others, are properly managed. The conditions require Mudgee Stone to:

- carry out noise mitigation work (if the owner requests) on a particular noise affected property;
- implement measures to minimise air quality, noise, water, traffic and visual impacts;
- implement a biodiversity offset strategy,
- progressively rehabilitate the site;
- pay Oberon Council agreed contributions toward infrastructure and road maintenance;
- monitor and regularly report on environmental performance; and
- commission independent audits of operations, to ensure compliance with approval conditions and to ensure implementation of best-practice environmental management.

The Department is mindful that the alaskite deposit is a high quality and well known source of feldspar. It is considered to have state and regional significance.<sup>1</sup> The existing quarry supplies, among other customers, the National Ceramic Industries tile plant at Rutherford, NSW, where feldspar is used as a flux in the manufacture of ceramic tiles. The Rutherford plant is the only ceramic tile plant in Australia and it presently supplies one third of domestic demand for ceramic tiles. If the application is approved, the Project would ensure continuity of supply to the Rutherford plant.

The Department also notes that the Project addresses the 'NSW 2021' goal of driving economic investment in regional NSW, as it would attract \$2.8 million worth of capital investment in the region and create 6-10 operational jobs and another 15-20 transport jobs for up to 30 years.

On balance, the Department considers the benefits of the Project outweigh the costs, and the Project is in the public interest. The Department has recommended strict conditions of approval that seek to strike an appropriate balance between protecting the amenity of surrounding residents, but still allowing the development of this important resource. The Department recommends that the Project be approved subject to these recommended conditions.

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<sup>1</sup> NSW Department of Trade and Investment, Regional Infrastructure and Services (14 January 2011)

# 1. PROPOSED PROJECT

## 1.1 Background

The Mudgee Stone Company Pty Ltd (Mudgee Stone) has an existing alaskite (white granite) quarry, which is located off Ferndale Road about six kilometres east of Oberon (see Figure 1).

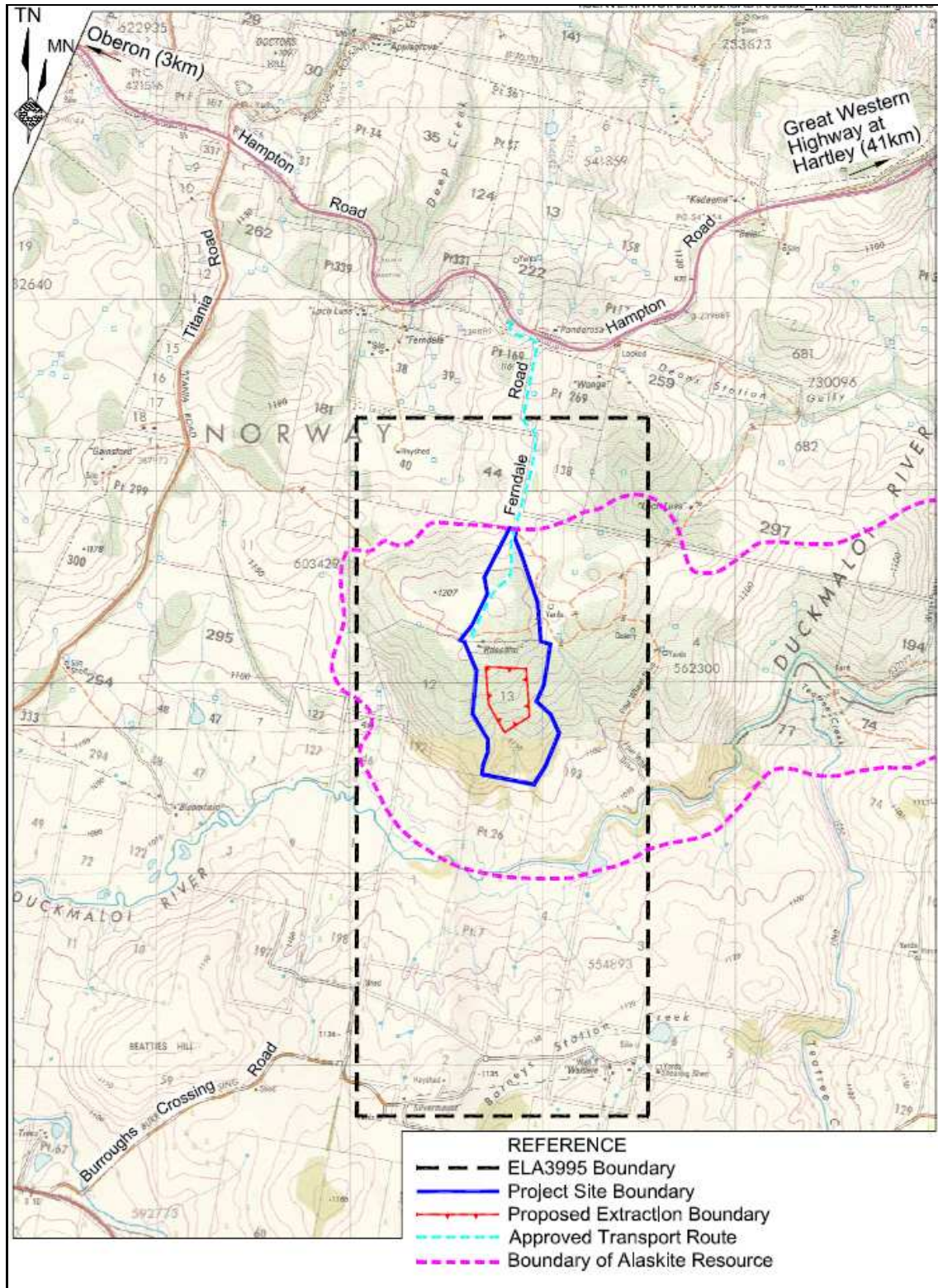
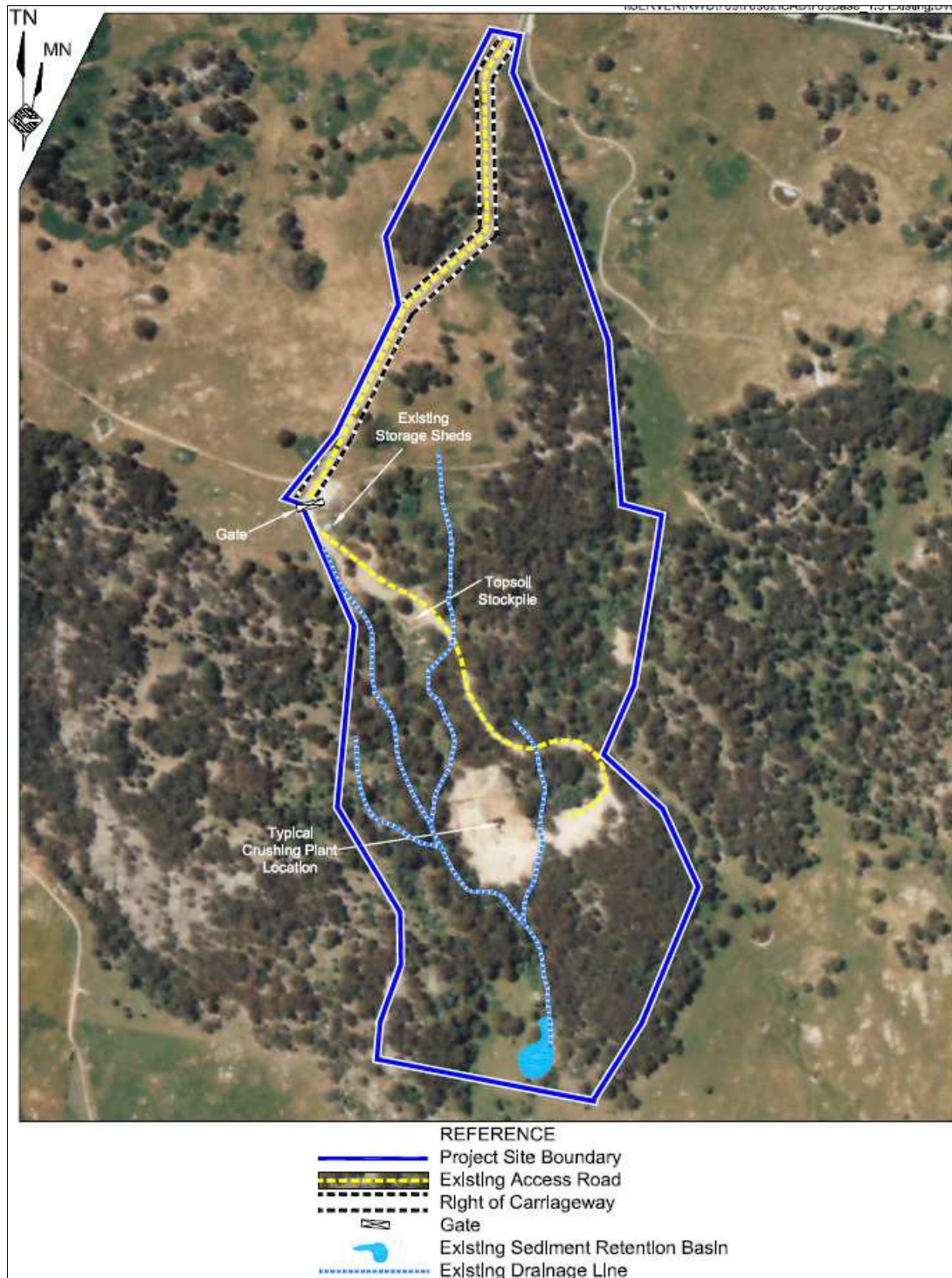


Figure 1 - Locality map



The quarry was approved by the Land and Environment Court in December 2004 (DA126/03), and commenced operations in February 2005. Under this approval, Mudgee Stone is allowed to extract up to 25,000 tonnes of white granite from the quarry each year, and crush and screen it on site before trucking it to customers using the existing public road network. The principal customer is the National Ceramic Industries tile plant at Rutherford, NSW, where the resource is used as a flux in the manufacture of ceramic tiles. The Rutherford plant is the only ceramic tile plant in Australia and presently meets one third of domestic demand for ceramic tiles.

The alaskite on site forms part of a much larger alaskite resource, and is considered to have state and regional significance (see Figure 1).<sup>2</sup>



**Figure 2 - Existing quarry layout**

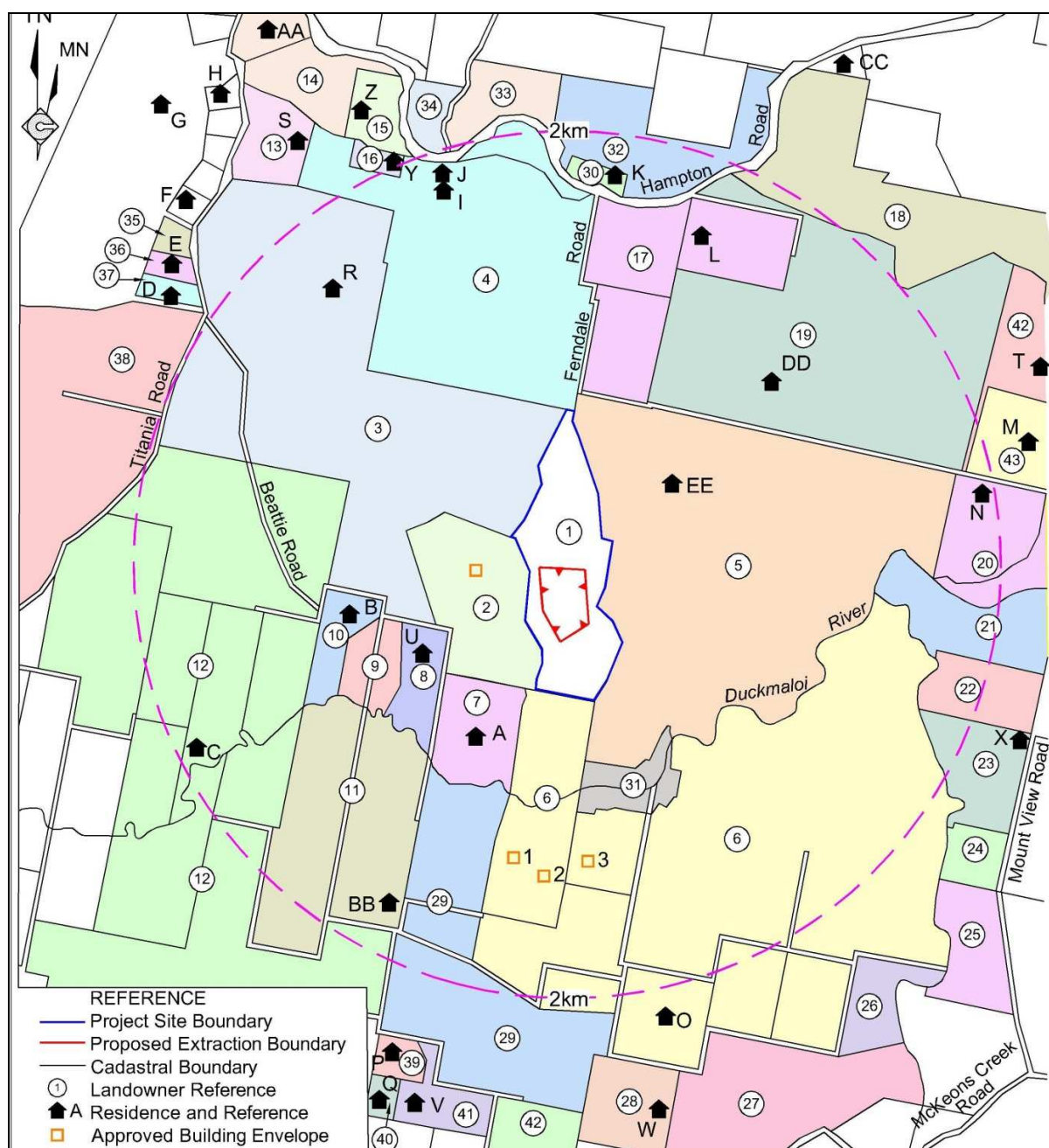
<sup>2</sup> NSW Department of Trade and Investment, Regional Infrastructure and Services (14 January 2011)

## 1.2 Site description and surrounding land uses

The local topography of the area is characterised by a gently undulating landform, with isolated hills up to 1200 metres and occasional steep embankments. The quarry site spans a hill of 1210 metres and the extraction area is positioned on its southern slopes. The southern slope continues south of the project site towards the Duckmaloi River, which is about 500 metres away.

The area surrounding the project site is agricultural in nature, with grazing land interspersed with stands of remnant vegetation.

There are 13 existing rural-residential premises within two kilometres of the project site (see **Figure 3**). Although the area is sparsely populated, there is growing pressure for additional rural-residential development in the area surrounding the quarry. For instance, during the assessment process the owner of the Webb property (see No 2 in Figure 3) secured development consent from Oberon Council to construct a new residence on the property. In addition, the owner of the Lawndock property (see No. 6 in Figure 3) has secured development consent from Council for a subdivision of the site, with approved envelopes for new residential premises. This development will increase the risk of land use conflicts between the quarry and the surrounding land uses.



**Figure 3 - Surrounding residences**

### 1.3 Project Description

Mudgee Stone proposes to expand the quarry, and increase its approved production capacity from 25,000 tonnes per annum (tpa) to 250,000 tpa over an operational life of 30 years.

The key components of the project are summarised in Table 1 and depicted in Figure 4, Figure 5 and Figure 6. The project is described in full in the Environmental Assessment (EA), which is attached as APPENDIX B.

**Table 1 - Project summary**

| <b>Aspect</b>             | <b>Summary</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Project Summary</i>    | Expansion of existing quarrying to 250,000 tonnes per year, including: <ul style="list-style-type: none"> <li>• new site access road and internal haul road and access track;</li> <li>• office, weighbridge, amenities, workshop and stockpiling areas;</li> <li>• environmental management infrastructure and rehabilitation.</li> </ul>                                                                                                                                                                                                                                           |
| <i>Extraction Methods</i> | <ul style="list-style-type: none"> <li>• Conventional free-dig, and drill-and-blast methods.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <i>Blasting</i>           | <ul style="list-style-type: none"> <li>• Up to 18 production blast per year and several smaller development blasts.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>Product Transport</i>  | <ul style="list-style-type: none"> <li>• Up to 40 trucks per day to Hampton Road via Ferndale Road. Thereafter, 20% of product trucks would travel west to Oberon and 80% east to The Great Western highway at Hartley.</li> </ul>                                                                                                                                                                                                                                                                                                                                                   |
| <i>Estimated Resource</i> | <ul style="list-style-type: none"> <li>• Approximately 5 million tonnes.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <i>Project Life</i>       | <ul style="list-style-type: none"> <li>• 30 years.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>Site Area</i>          | <ul style="list-style-type: none"> <li>• Approximately 40 hectares</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>Disturbance Area</i>   | <ul style="list-style-type: none"> <li>• Approximately 6 hectares</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <i>Products</i>           | <ul style="list-style-type: none"> <li>• Road-base, decorative gravels, raw material for tile manufacture, concrete aggregate, and anti-slip material.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <i>Processing</i>         | <ul style="list-style-type: none"> <li>• Crushing and screening using mobile plant on the floor of the extraction area, with processing rates between 80 and 250 tonnes per hour.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                         |
| <i>Waste Management</i>   | <ul style="list-style-type: none"> <li>• All quarry products would be sold or used in rehabilitation. Office waste would continue to be collected by licensed waste contractors.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                          |
| <i>Rehabilitation</i>     | <ul style="list-style-type: none"> <li>• Progressive rehabilitation of operational areas.</li> <li>• Final rehabilitation of the quarry void.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <i>Jobs</i>               | <ul style="list-style-type: none"> <li>• Operational: 6 to 10                      Transport: 15 to 20</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <i>CIV</i>                | <ul style="list-style-type: none"> <li>• Approximately \$2.8 million.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Construction hours</i> | <ul style="list-style-type: none"> <li>• Site establishment – 9am-5pm, Monday to Friday.</li> <li>• Vegetation clearing – 9am-5pm, Monday to Friday (2 weeks per year only)</li> <li>• No construction on Saturday, Sunday or Public holidays.</li> </ul>                                                                                                                                                                                                                                                                                                                            |
| <i>Operational hours</i>  | <ul style="list-style-type: none"> <li>• Drilling – 8am-5pm, Monday to Friday.</li> <li>• Blasting and small charge popping – 9am-5pm, Monday to Friday.</li> <li>• Rock hammering – 10am-12pm, Monday to Friday.</li> <li>• Processing: <ul style="list-style-type: none"> <li>o 7am to 6pm, Monday to Friday.</li> <li>o 8am to 6pm, Saturday.</li> </ul> </li> <li>• Transport: <ul style="list-style-type: none"> <li>o 7am-6pm Monday to Friday.</li> <li>o 8am-6pm Saturday</li> </ul> </li> <li>• Unless stated, no operations on Saturday, Sunday or Public Hols.</li> </ul> |

The primary driver for the proposed expansion is the increased demand for the resource from the National Ceramics tile plant in Rutherford.



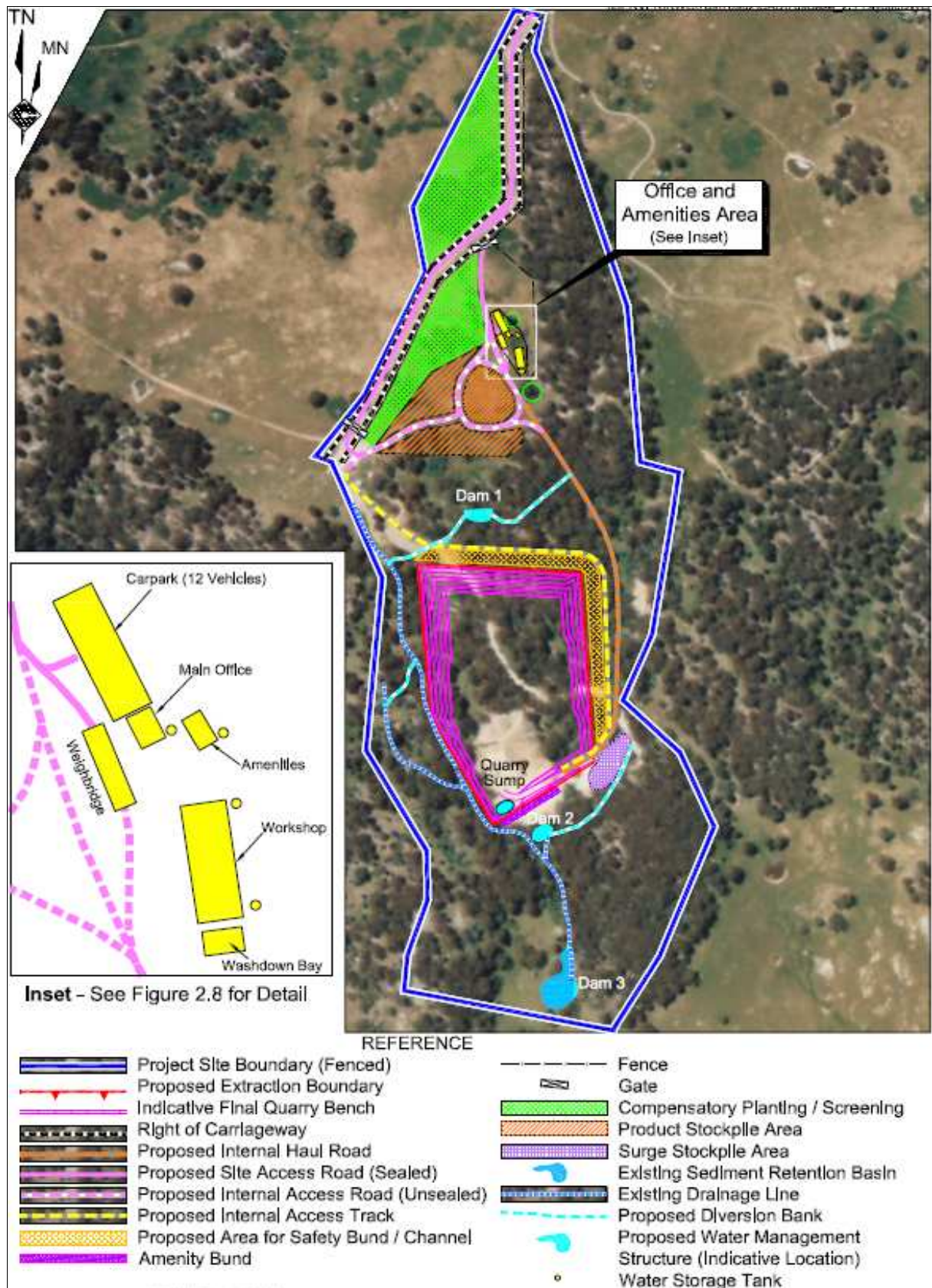


Figure 4 - Project layout



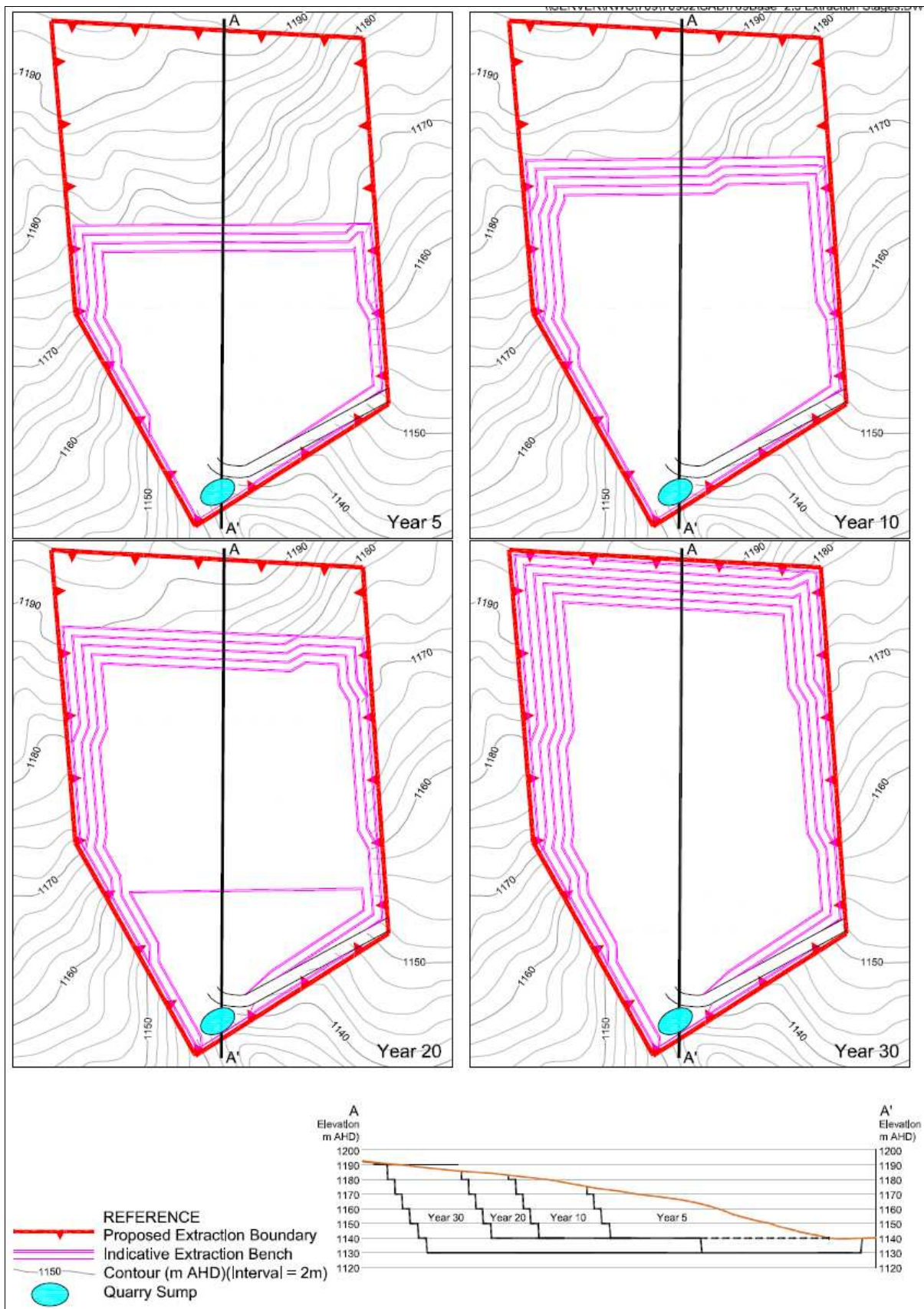
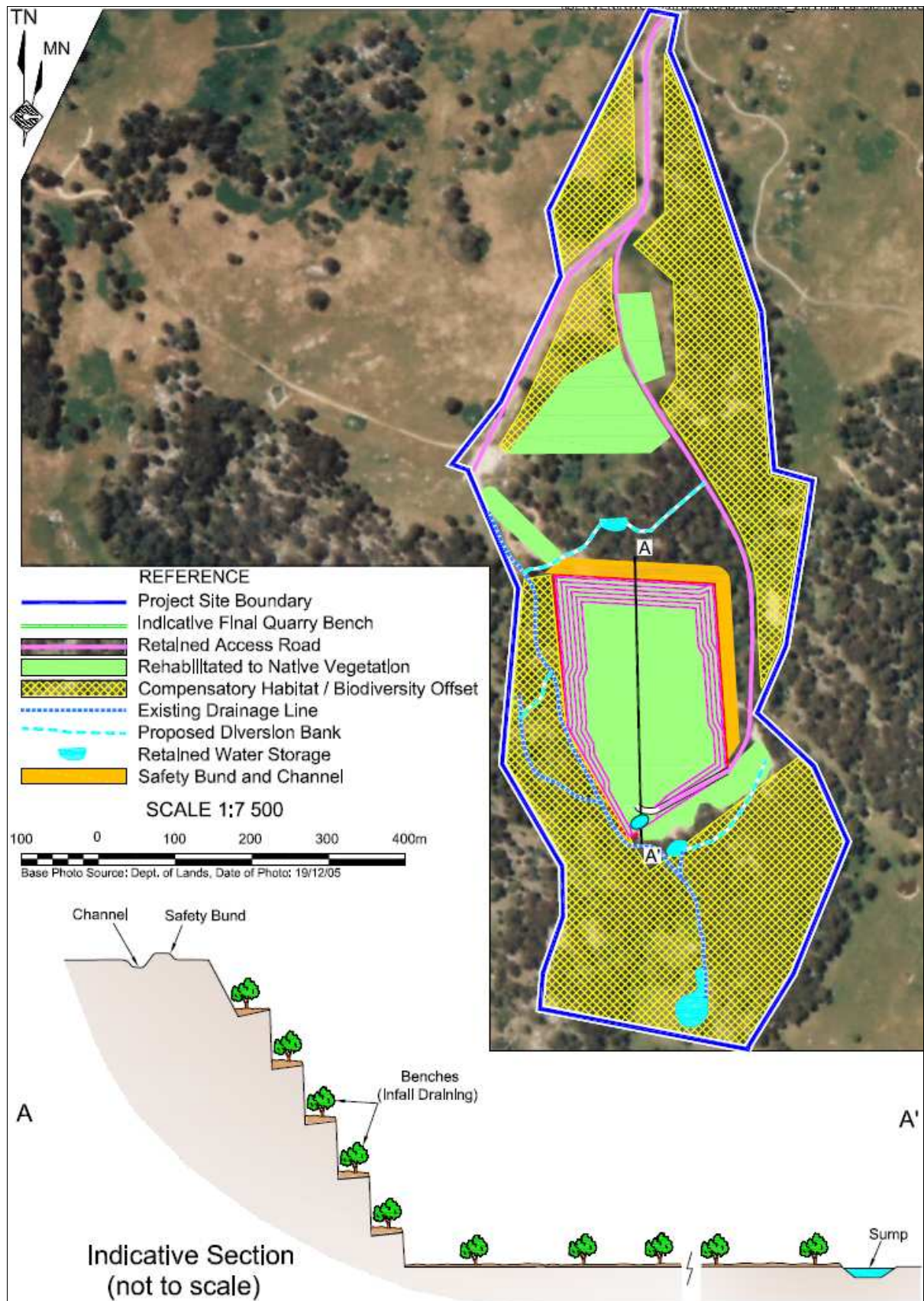


Figure 5 - Indicative quarry stages



**Figure 6 - Final landform and rehabilitation**

## 2. STATUTORY CONTEXT

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### 2.1 Major Project

The proposal was declared to be a major project under Part 3A of *Environmental Planning and Assessment Act 1979* (EP&A Act) because it constituted development for the purpose of an extractive industry that would extract more than 200,000 tonnes of extractive material a year, and therefore met the criteria in Clause 7 of Schedule 1 of *State Environmental Planning Policy (Major Development) 2005*.

Although Part 3A of the EP&A Act 1979 was repealed on 1 October 2011, the project remains a “transitional Part 3A Project” under Schedule 6A of the EP&A Act. Consequently, the Minister for Planning and Infrastructure is the approval authority for the project application,

However, under the Minister's delegation of 14 September 2011, the Deputy Director-General may determine the project application as:

- the Council has not made an objection to the project;
- there were less than 25 public submissions objecting to the project; and
- Mudgee Stone has indicated that it has not made any reportable political donations.

### 2.2 Integrated Approvals

Under Section 75U of the EP&A Act, a number of other approvals have been integrated into the Part 3A approval process and are not required to be separately obtained for the project. These include:

- heritage-related approvals required under the *Heritage Act 1977* and *National Parks and Wildlife Act 1974*; and
- some water-related approvals under the *Water Act 1912* and *Water Management Act 2000*.

Under Section 75V of the EP&A Act, a number of further approvals are required to be obtained, but these must be approved in a manner that is consistent with any Part 3A approval for the project. These include:

- an Environment Protection Licence (EPL) under the *Protection of the Environment Operations Act 1997*; and
- an approval under the *Roads Act 1993* to undertake works within a road reserve.

The Department has consulted with the relevant public authorities responsible for these other approvals (see Section 3), and considered the issues relating to these approvals in its assessment of the project (see Section 4). None of these authorities objected to the project on grounds related to these other approvals.

### 2.3 Permissibility

The site is located in the Oberon LGA, and is zoned 1(a) Rural ‘A’ Zone under the *Oberon Local Environmental Plan 1998*. Extractive industry development is permissible with consent in this zone. The project is also permissible with development consent under *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (the Mining SEPP), as extractive industry development is permissible with development consent on land where agricultural development is permissible.

### 2.4 Exhibition and notification

Under Section 75H(3) of the EP&A Act, the Director-General is required to make the Environmental Assessment (EA) for the Project publicly available for at least 30 days. After accepting the EA for the Project, the Department:

- made the EA publicly available from 25 November 2010 until 17 January 2011:
  - on the Department's website;
  - at the Department's Information Centre, Oberon Council's office; and
  - the office of Nature Conservation Council's office;
- notified relevant State government authorities and Oberon Council; and
- advertised the exhibition in the Oberon local press.

This satisfies the requirements of Section 75H(3) of the EP&A Act.



## 2.5 Environmental Planning Instruments

Under Section 75I of the EP&A Act, the Director-General's report is required to include a copy of, or reference to, the provisions of environmental planning instruments (EPIs) that substantially govern the carrying out of the Project.

In relation to this particular Project, the key EPIs that potentially govern the project are:

- SEPP (Mining, Petroleum Production and Extractive Industries) 2007
- SEPP (Infrastructure) 2007
- SEPP No. 33 – Hazardous and Offensive Development
- SEPP No. 44 – Koala Habitat Protection
- SEPP No. 55 – Remediation of Land
- Oberon LEP 1998

The Department has assessed the Project against the relevant instruments and considers:

- the project can be managed in a manner that is generally consistent with the aims, objectives and provisions of Mining SEPP in relation to compatibility with other land uses; natural resource management, environmental management, resource recovery, transport, and rehabilitation.
- issues raised by the RMS during consultation under SEPP (Infrastructure) 2007 and related traffic impacts are discussed in **Table 5** on page 22.
- the proposed extractive industry is not an 'industry' to which SEPP No 33 – Hazard and Offensive Development applies;
- the site contains potential Koala habitat as defined under SEPP 44 – Koala Habitat Protection, but there is no evidence of Koala habitation and the site is not considered 'core' habitat.
- the site is not contaminated and will not require remediation for the proposed use under SEPP No. 55 – Remediation of Land; and
- the project is generally consistent with the aims and objectives of the Oberon LEP 1998.

Consequently, the Department is satisfied that none of these EPIs substantially governs the carrying out of the project.

Oberon Council and other submitters were concerned that the project would not comply with the requirements in *Development Control Plan (DCP) 2001*, which specifies a 500 metre buffer between extractive industries and residential dwellings. In this regard, the Department understands that only the Webb property (see **Figure 3** on page 3) would have a dwelling (recently approved by Council) within the buffer distance, and all other nearby dwellings would be at least 500m away from the quarrying operations. Whilst the DCP does not strictly apply to the assessment of this project, and the Department does not support the imposition of arbitrary buffer areas around quarries, the Department has considered the policy intent of the DCP during its assessment of the merits of the project. Based on this assessment (see Section 4 below), the Department is satisfied that the environmental impacts of the project can be suitably controlled or minimised to ensure an acceptable level of environmental performance at all the residences surrounding the site, including the residence on the Webb property.

## 2.6 Objects of the Environmental Planning and Assessment Act 1979

When making decisions under the EP&A Act, an approval authority should consider the objects of the Act. The objects of most relevance to this application are:

*'The objects of this Act 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 (ESD)...*

The Department is satisfied that the project encourages the proper use of resources (Object 5(a)(i)) and the promotion of orderly and economic use of land (Object 5(a)(ii)). The encouragement of environmental protection (Object 5(a)(i) and 5(a)(vi)) is considered in detail in Section 4 of this report. Based on this consideration, the Department is satisfied that the impacts of the project can be mitigated and/or managed to ensure an acceptable level of environmental performance.

Finally, the Department has fully considered the encouragement of ecologically sustainable development (ESD) (Object 5(a)(vii)) throughout its assessment of the merits of the project application, and sought to integrate all significant economic and environmental considerations and avoid any serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences. Based on this consideration, the Department is satisfied that the project can be carried out in a manner that is consistent with the principles of ESD.

## **2.7 Statement of Compliance**

Under Section 75I of the EP&A Act, the Director-General's report is required to include a statement relating to compliance with the Director-General's environmental assessment requirements issued with respect to the project. The Department is satisfied that the environmental assessment requirements have been complied with.

## **3. CONSULTATION**

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The Department received a total of 17 submissions on the project, including 5 from public authorities and 12 from the general public.

A full copy of these submissions is attached in APPENDIX C.

### **3.1. Public Authorities**

The **Office of Environment and Heritage** (OEH) and **Environment Protection Authority** (EPA) did not object to the project. However, they:

- requested additional information to enable a comparison of the proposed offset with the requirements of OEH's Bio-Banking Assessment tool and to determine whether there is a newly listed EEC on site. These matters are addressed in Section 4 below; and
- recommended a range of approval conditions to minimise the air quality, noise, blasting, water and biodiversity impacts of the project.

The Department has incorporated these recommendations into the recommended project approval.

The **Division of Resources and Energy** (DRE) within the Department of Trade and Investment, Regional Infrastructure and Services did not object to the project. However, it asked for a condition to be imposed requiring Mudgee Stone to report its annual production data. This is included as a recommended approval condition. It also asked the Department to consider the agricultural values of the project site. The Department has done this, and considers the resource value of the site to outweigh its agricultural value.

The **Roads and Maritime Services** (RMS) did not object to the project, and recommended conditions requiring Mudgee Stone to install signage on the haul route at the junction of Ferndale and Hampton Roads, and prepare and implement a code of conduct for heavy vehicle drivers. These are included as recommended approval conditions.

The **NSW Office of Water** did not object to the project, and recommended that Mudgee Stone be required prepare and implement a water management plan for the project. This is included as a recommended approval condition.

**Oberon Council** did not object to the project but identified several issues of concern, including:

- objections by the owner of the site adjacent to the project site (Lot 12 DP 603429, the 'Webb Property') in relation to potential impacts on that site. Mudgee Stone provided supplementary noise and air quality data for this site, which has been considered in the Department's assessment in section 4.1 and section 4.3.
- The need for a 500m buffer to the nearest residence under Development Control Plan 2001. This matter is addressed in section 2.5.

- The need for developer contributions for infrastructure and road maintenance. The Department has included a requirement for the payment of suitable contributions in the recommended project approval.

### **3.2. Public Submissions**

Eleven of the 12 public submissions objected to the project.

Key issues raised in public submissions included:

- Noise and vibration impacts – significant objections in relation to the potential noise impacts of the project, with particular reference to elevated noise effects from the use of rock hammers. Concerns also related to hours of operation, traffic noise impacts, the ability to effectively monitor and mitigate noise and enforce compliance with noise limits, and the noise and vibration effects of proposed blasting activities. Submissions highlighted the potential impacts on existing receiver locations, as well as the proposed development of a residential premises on the Webb Property;
- Air quality impacts – concern over the potential for dust emitted from the site to impact on residential receivers and agricultural operations;
- Groundwater impacts – concern over the implications of the project on continued productive use of water from existing groundwater bores and natural springs;
- Surface water impacts – including potential erosion and sedimentation impacts, impacts on the Duckmaloi water supply and design of on-site dams to contain a 1 in 100 year flood event;
- Biodiversity impacts – general dissatisfaction with the potential ecological impacts of the project and the biodiversity offset package proposed. Specific reference was made to potential impacts on the Duckmaloi River, and species including the Platypus and the Koala;
- Rehabilitation – a general view in submissions that a bond should be required to ensure that the site is adequately rehabilitated;
- Visual amenity impacts – concern over the visibility of quarry operations, particularly at residential receivers to the south of the project site;
- Traffic and transportation impacts – clarification of the operation of existing school buses, concerns over road safety and recent local road fatalities/ accidents and the general view that traffic generation associated with the project would have an adverse impact on the capacity of the local road network;
- Market and resource issues – questions about the significance, extent and intended beneficial use of the mineral resource on the site; and
- Other issues – including issues of compliance and monitoring, consultation, potential impacts on land values, the adequacy of the EA and the statutory assessment process, local geology, land use zoning and general amenity.

The Department has considered these matters further in Section 4 below.

### **3.3. Response to Submissions**

Mudgee Stone prepared a formal response to the issues raised in submissions (see APPENDIX D).

This response provided additional information and clarification, including further assessment in the following key areas:

- further information and clarification of ecological impacts and the proposed biodiversity offset package, including the outcomes of additional ecological surveys;
- further visual impact assessment, particularly in relation to the three proposed residential premises to be located on the Lawndock Property to the south of the project site; and
- further noise modelling and assessment, particularly in relation to the three proposed residential premises to be located on the Lawndock Property to the south of the project site.

### **3.4. Further Information – Additional Residential Receiver Location**

After receiving the response to submissions, the Department required Mudgee Stone to carry out further noise and air quality modelling to assess the potential impacts of the project on the recently approved residence on the adjacent Webb Property. A copy of this additional assessment is provided in APPENDIX E.



## 4. ASSESSMENT

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

- Mudgee Stone's Environmental Assessment (See APPENDIX B) and additional noise and air modelling (see APPENDIX E);
- all submissions and the Mudgee Stone's Response to Submissions (see APPENDIX C and APPENDIX D);
- the objects of the EP&A Act, including the object to encourage Ecologically Sustainable Development (see section 2.6);
- relevant Environmental Planning Instruments (see section 2.5);
- relevant guidelines and policies; and
- relevant statutory requirements of the EP&A Act and Regulation.

The Department considers the key issues for detailed assessment in this report are noise and vibration, ecology, air quality and visual amenity. The following sub-sections of this report assess the key issues in detail. **Table 5** of this report shows an assessment of all other relevant issues for the project.

### 4.1 Noise and Vibration

#### Issue

The project would generate construction, operational and traffic noise impacts that could affect the amenity of the surrounding rural area. It would also generate blasting and vibration impacts. These impacts were the biggest source of concern raised in submissions on the project.

#### Consideration

The Environmental Assessment includes a specialist noise assessment by Spectrum Acoustics. The assessment presents the results of noise modelling and determines the potential noise impacts at residences under various meteorological conditions. The location of nearby residences is shown in **Figure 3**.

#### Construction Noise

During the initial 24 week site establishment phase, and also during the two-week vegetation clearing campaigns that are scheduled to occur every 5 years (but could be carried out more regularly), Spectrum Acoustic predicts noise levels of up to 42dB(A)<sub>Leq(15min)</sub> at affected receivers.

While these noise levels are higher than the levels recommended under the *Industrial Noise Policy* (INP), the Department believes they should be characterised as construction (rather than operational) noise impacts and consequently subject to specific construction noise limits. This is consistent with the intent of the Interim Construction Noise Guideline 2009, even if it doesn't strictly apply to quarries. The Department also believes the predicted noise levels are acceptable. This is primarily because of the short duration of the impacts, the fact they would only happen during the day time and would be well below the recommended amenity noise levels of 50dB(A), and the fact that there are limited reasonable and feasible mitigation measures that could be implemented to reduce the predicted noise levels. Further, the Department notes that part of the site establishment phase involves the construction of a 6 metre high earth bund to provide acoustic protection to the south during the operation of the project.

To ensure the construction noise impacts of the project are acceptable, the Department has recommended:

- a maximum noise limit for construction to be 42dB(A);
- a strict 24 week site establishment phase;
- a strict limit for vegetation clearing of two-weeks per year, between the hours 9am to 5pm Monday to Friday (and at no time on the weekend or public holidays);
- prior notification to potentially affected residential receivers surrounding the project site;
- reasonable endeavours to avoid vegetation clearing during adverse meteorological conditions (ie wind towards residential receivers); and
- the preparation and implementation of a Noise Management Plan, which describes the specific measures that would be implemented to minimise the noise impacts of the project during construction.

### Operational Noise

Mudgee Stone has committed to implementing a comprehensive suite of constructed and operational noise mitigation measures as outlined below:

- a six metre high acoustic earth-bund along the southern boundary of the extraction area;
- locating the crushing plant, as far as practicable, behind product stockpiles;
- avoiding dozer operations in exposed areas during wind from the north-northeast and east-southeast at speeds between 1m/s and 4m/s;
- restricting operation of the excavator to the floor of the extraction area during drilling;
- installing sound attenuation on the drill rig (such as enclosure of the mast and engine) during later years of quarry operation;
- rock hammering on only 2 days a month and only between 10am to 12pm on a weekday;
- rock hammering only on the quarry floor within 20 metres of the east or west quarry faces;
- ensuring no rock hammering is carried out during drilling or vegetation clearing;
- utilising frequency-modulated reverse-alarms on all mobile plant;
- regularly servicing plant to avoid unnecessary noise impacts from maintenance issues;
- regularly maintaining on-site roads to reduce truck carriage noise; and
- notifying all neighbouring residences prior to site establishment and each clearing campaign.

With these mitigation measures in place, Spectrum Acoustic predicts the noise generated by the project would:

- comply with the recommended noise levels in the INP for almost all receivers under all meteorological conditions;
- result in minor exceedances of these levels at 2 properties during certain winds; and
- result in substantial exceedances of these levels at one property during almost all weather conditions (see **Table 2** below).

**Table 2 – Summary of maximum predicted noise levels**

| <b>Land</b>        | <b>Modelled Operational Scenario</b>                | <b>Maximum predicted noise level</b> |
|--------------------|-----------------------------------------------------|--------------------------------------|
| Receiver 5         | All meteorological conditions including calm        | 41.8dB(A) <sub>Leq(15min)</sub>      |
| Receiver '6'       | During east-northeast wind                          | 37.2dB(A) <sub>Leq(15min)</sub>      |
| Receiver '2'       | During south-southeast wind                         | 36dB(A) <sub>Leq(15min)</sub>        |
| Any other Receiver | During any meteorological conditions including calm | 35dB(A) <sub>Leq(15min)</sub>        |

*Note: The location of nearby residences is shown in **Figure 3** on page 3.*

Both the Department and the EPA consider these exceedances to be acceptable as:

- operations would only occur during the day time;
- the actual noise levels would still be well below the recommended amenity criteria for such areas; and
- Mudgee Stone has an existing agreement in place with the owner of the worst affected property, Receiver 5, which accepts the predicted noise levels of the project.

Accordingly, the Department has recommended conditions of approval that set the noise criteria for the operations to the maximum predicted levels in the EA, as set out in **Table 3** below.

**Table 3 – Recommended maximum noise level criteria**

| <b>Receiver</b>       | <b>Operational noise criteria</b> |
|-----------------------|-----------------------------------|
| Receiver 5 'EE'       | 42dB(A) <sub>Leq(15min)</sub>     |
| Receivers '6' and '2' | 37dB(A) <sub>Leq(15min)</sub>     |
| Any other receiver    | 35dB(A) <sub>Leq(15min)</sub>     |

*Note: The location of nearby residences is shown in **Figure 3** on page 3.*

Whilst the Department and the EPA consider the predicted noise levels at all receivers to be acceptable, particularly in the context of day time only operations, both agencies believe Mudgee Stone should be required to implement additional noise mitigation measures at Receiver 5, for example, by way of installing double glazing or insulation. Accordingly, the Department has included a recommended condition of approval for noise mitigation at this property upon request.

The Department has also recommended that Mudgee Stone be required to comply with a range of operating conditions that require, among other things, the implementation of best practice on site to minimise the noise impacts of the project, and the preparation and implementation of a Noise Management Plan that would outline the specific mitigation measures for the project.

### Traffic Noise

The noise assessment examines the likely traffic noise impacts of the project along Ferndale Road and Hampton Road. It predicts that the project would comply with the recommended traffic noise levels at all receivers that are located at least 30 metres away from the road. As there are no dwellings within 30 metres of Hampton Road or Ferndale Road, the Department is satisfied that the project is unlikely to cause any adverse traffic noise impacts.

Notwithstanding this conclusion, the Department does not support Mudgee Stone's request to be able to dispatch trucks from the site during the early morning shoulder period (6am to 7am) and on Sundays, even though this is permitted under the existing consent.

This is principally because the Department believes the surrounding residents should have some respite from the adjoining industrial activities, particularly in the shoulder period and on Sundays, and that this can be achieved without unduly impacting on the quarry's operations. Accordingly the Department has recommended conditions restricting the operations to day time only, with no work to be carried out on Sundays.

### Blasting

The project is expected to require up to 18 blasts a year when it is operating at maximum capacity. With standard blast management practice, both the Department and EPA are satisfied that Mudgee Stone would be able to suitably control the blasting impacts of the project to comply with the relevant vibration and overpressures standards at all surrounding receivers, including the recently approved residence on the Webb property.

However, given the fact that blasting would be required within 500 metres of both the Webb and Breed properties, the Department has recommended that Mudgee Stone be required to either:

- secure a written agreement with the relevant landowner to allow the blasting to occur within 500 metres of the property; or
- demonstrate to the satisfaction of the Director-General that this blasting can be carried out within 500 metres of the property without compromising the safety of the people or livestock on the property, or damaging the buildings and/or structures on the property.

### Conclusion

Both the Department and EPA are satisfied that the noise and vibration impacts of the project would be acceptable. Nevertheless, the Department has recommended a range of strict conditions to ensure this would be the case. These conditions include:

- setting clear noise limits for the project;
- imposing strict time limits for certain activities such as vegetation clearing, rock hammering and blasting;
- prohibiting operations on Sundays and public holidays;
- requiring the preparation and implementation of a detailed Noise Management Plan and Blast Management Plan for the project;
- ensuring the effectiveness of these plans is reviewed on a regular basis, and that they are updated over the life of the project to ensure best management practice continues to be employed on the site.

## **4.2 Biodiversity**

### Issue

The project would have biodiversity impacts principally through vegetation clearing. To offset the loss of vegetation, Mudgee Stone proposes to implement a biodiversity offset strategy.

### Consideration

The Environmental Assessment was accompanied by a specialist flora assessment by Gingra Ecological Surveys, and a specialist fauna assessment by Biodiversity Monitoring Services.

### Flora Impacts

The flora assessment was based on three physical site-surveys that were carried out in 2003, 2007 and 2009. The report concluded that there are no threatened flora species, critical habitats or endangered ecological communities on or adjacent to the project site.



The Department believes Mudgee Stone has made reasonable endeavours to avoid ecological impacts. For instance, the product stockpile and offices have been located mostly in previously cleared areas to avoid the need for additional land-clearing. Consequently, from a total disturbance area of 11 hectares, the project would require clearing of 7.1 hectares of vegetation, primarily because the accessible part of the alaskite resource is in vegetated parts of the site. The land clearing includes:

- 4.9 hectares of Narrow-leaved Peppermint/Mountain Gum/Ribbon Gum Grassy Woodland from the sheltered south-facing slopes;
- 2 hectares of Snow Gum/Mountain Gum Grassy Woodland from the crests and exposed slopes; and
- 0.2 hectares of Ribbon Gum Woodland from the steeper gullies.

The vegetation communities to be cleared range in quality from poor to good (none are fully intact or in excellent condition), depending on the level of historical disturbance. Rabbits and exotics plant species have impacted on all communities, although where tree-cover exists, native understorey species are dominant, or at least co-dominant with the exotics. The first and third of the communities listed above are known to be over-cleared in the region, but otherwise have no statutory conservation protection. These over-cleared communities are well represented in the proposed biodiversity offset (see below) for the Project, as can be seen in the overlays in **Figure 7**.

OEH was concerned that the site may contain an Endangered Ecological Community (EEC) known as *Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland*”, which was only listed as an EEC during the assessment process. However, the Proponent’s specialist consultant responded specifically to OEH’s concern and argued that the vegetation communities present on site are not the EEC in question but another kind of community (see correspondence from Gingra Ecological Surveys in APPENDIX F).

While the Department finds this argument persuasive, and believes the EEC is unlikely to be on the site, it has recommended conditions that require Mudgee Stone to carry out an additional pre-clearance survey for the site. Should the pre-clearance survey conclude that the EEC (whether intact or degraded) is present on the site, then Mudgee Stone would need to revise the proposed offset package (see below) in consultation with OEH, and to the satisfaction of the Director-General. The revised package would need to contain a suitable offset for any impacts on the EEC. The OEH is satisfied with this condition.

The Department is satisfied that Mudgee Stone has avoided the need to clear vegetation as much as practical. The proposed areas of clearing are primarily where the accessible resource is and are therefore unavoidable in the process of extracting it. In addition, the Department is satisfied with the mitigation measures proposed by Mudgee Stone, which include:

- retention of selected vegetation (including mark-up during clearing);
- progressive and prompt rehabilitation of disturbance areas no longer required for operation;
- control of noxious weeds and exclusion of domestic grazing animals;
- machine wash-down to ensure the exclusion of foreign soil;
- annual reporting on rehabilitation performance; and
- a biodiversity offset package (see below).

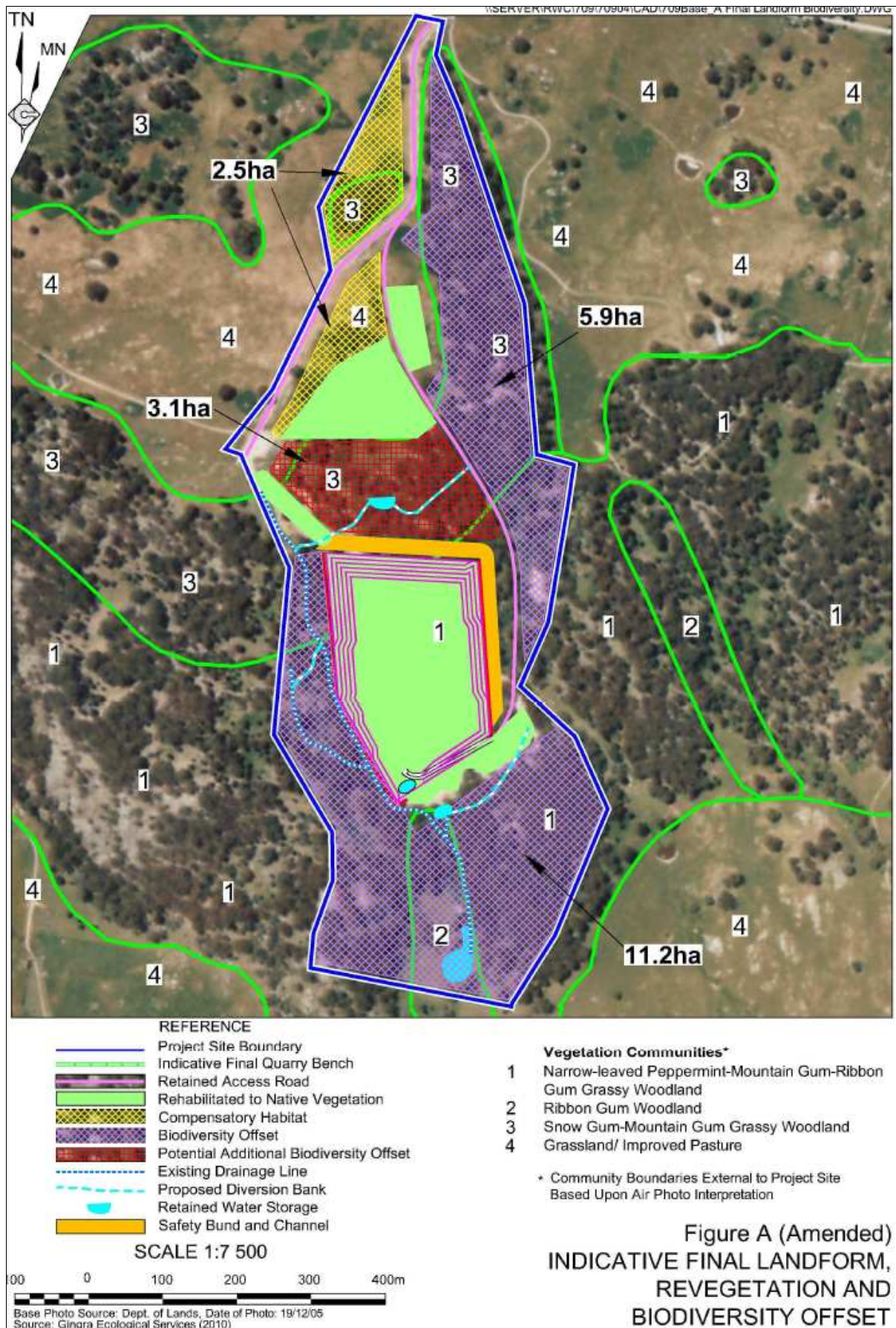
The Department has included suitable conditions in the recommended project approval to ensure these measures are implemented.

#### Fauna Impacts

Many fauna species were observed on the site during surveys, although only two of the observed species are listed as vulnerable. They are the Flame Robin and Scarlet Robin. The site is not listed as critical habitat and appears degraded and fragmented from other remnant vegetation so that it is unlikely to be part of a regional wildlife corridor. As discussed above, the Department notes that the project has been designed to avoid ecological impacts as much as practical and includes the implementation of impact mitigation measures.

The Department is satisfied that the extent of clearing is unlikely to be a major loss to woodland habitat resources for the vulnerable species that occur on site, and that a significant impact is unlikely. The proposed biodiversity offsets (see below) would be highly beneficial to such native fauna and the

Nevertheless, the Department has included a condition that requires the offset to include measures that would be beneficial to the vulnerable species that occur on the site.



**Figure 7 - Proposed biodiversity offset areas**

### Biodiversity Offsets

To minimise the potential biodiversity impacts of the project, Mudgee Stone proposes to implement a biodiversity offset strategy. The strategy is shown in **Figure 7** and comprises:

- security in perpetuity of 17.1 hectares of the Project site for conservation. The proposed offset area is contiguous and has the same ecological values as the area to be cleared. The ecological values of the offset would improve over time because Mudgee Stone will carry out supplementary planting, weed eradication and livestock control;
- security in perpetuity of an additional 3.1 hectares of the Project site immediately north of the extraction area for conservation purposes. This area was added to the 17.1 hectare offset above in the Proponent's Response to Submission. It is shown in the figure as 'Potential Additional Biodiversity Offset';
- compensatory planting in two degraded grass-land areas totalling 2.5 hectares in the north of the Project site. The compensatory planting would aim to establish mid-story and canopy layers to restore the original vegetation community in this part of the site.

Although OEH was not satisfied that the offset would result in 'no-net-loss' of biodiversity values in the area, the Department notes that this is not the relevant test to be applied to the project. Both the DGRs and OEH's draft Offsets Policy require Mudgee Stone to 'maintain and improve' the biodiversity values of the region in the medium to long term.

The Department is satisfied that with the implementation of the proposed biodiversity offset strategy, the project would clearly maintain the biodiversity values of the region in the medium to long term, and is actually likely to improve these values over time given the proposed compensatory planting and improved conservation management measures that would be implemented within the offset areas. In this regard, the Department notes that the proposed offset area is 3.2 times larger than the area being cleared, that the offset area would be comprised of similar vegetation to that being cleared, and that the offset area would be secured for conservation in perpetuity.

The Department has included a range of conditions in the recommended project approval to ensure the proposed offset strategy is implemented properly. These conditions include a requirement for Mudgee Stone to lodge a suitable bond with the Department that would be used to complete the implementation of the biodiversity offset strategy if necessary.

### Rehabilitation

Mudgee Stone proposes to progressively rehabilitate the site following the completion of each extraction stage. Progressive rehabilitation would include stabilisation of the areas no longer required for operational purposes and would also include control of exotic species over the whole of the project site. The final rehabilitation of the site would include:

- removing all infrastructure following the completion of the project;
- landform shaping to create stable landforms;
- planting vegetation in the quarry void to match the surrounding vegetation communities; and
- implementing a program to monitor rehabilitation progress and outcomes.

The Department is satisfied with the proposed rehabilitation of the site, and has included a range of conditions in the recommended project approval to ensure the site is suitably rehabilitated.

### Conclusion

Overall the Department is satisfied that the project is unlikely to cause any significant biodiversity impacts. Importantly, the project has been designed to minimise the extent of clearing required and includes several impact mitigation measures such as progressive clearing and rehabilitation, and the control of invasive species. The project also includes a biodiversity offset strategy, which would result in the conservation and enhancement of 22.7 hectares on the project site in perpetuity to compensate for the 7 hectares of vegetation clearing required for the project. With the implementation of this strategy, the Department is satisfied that the project would maintain, and probably, improve the biodiversity values of the site and region over time.

While the Department is confident that the newly listed EEC does not occur on the site based on expert advice (see APPENDIX F), it has included a condition to require an additional pre-clearance ecology survey. Should the additional pre-clearance survey re-categorise the vegetation communities on the site as the newly listed EEC, the Department believes Mudgee Stone should be required to revise the biodiversity offset to include measures (such as additional area, or bio-banking contributions) to offset the impacts on the EEC.

- progressively rehabilitate the site;
- pay Oberon Council an agreed contribution toward infrastructure and road maintenance;
- monitor and regularly report on environmental performance; and
- commission independent audits of operations, to ensure compliance with approval conditions and to ensure implementation of best-practice environmental management.

On balance, the Department believes that the project's benefits sufficiently outweigh its residual costs and that it is in the public interest. The project should therefore be approved subject to strict conditions.

## 6. RECOMMENDATION

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It is RECOMMENDED that the Deputy Director-General, as delegate for the Minister:

- consider the findings and recommendations of this report;
- approve the project application, subject to conditions, under section 75J of the EP&A Act; and
- sign the attached project approval (see **Appendix A**).

*DKitto 29/8/12*

David Kitto  
**Director**  
**Mining and Industry Projects**

*[Signature]*

Chris Wilson  
**Executive Director**  
**Major Project Assessments**

David Mooney  
A/Senior Planner

*29.8.12*

Richard Pearson  
**Deputy Director-General**  
**Development Assessment and Systems Performance**



## **APPENDIX A – PROJECT APPROVAL**

## **APPENDIX B – ENVIRONMENTAL ASSESSMENT**

See attached CD ROM or visit:

[http://majorprojects.planning.nsw.gov.au/index.pl?action=view\\_job&job\\_id=1401](http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=1401)

## **APPENDIX C – COPY OF ALL FINAL SUBMISSIONS**

## **APPENDIX D – RESPONSE TO SUBMISSIONS**

See attached CD ROM or visit:

[http://majorprojects.planning.nsw.gov.au/index.pl?action=view\\_job&job\\_id=1401](http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=1401)



## **APPENDIX E – ADDITIONAL AIR AND NOISE ASSESSMENT**

## APPENDIX F – ADDITIONAL ECOLOGY SUBMISSION

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RW Corkery & Co  
Brisbane Office

Roger Lembit  
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CANTERBURY NSW 2193  
(02) 9787 9710

18th October 2011

Dear Scott,

Re: Oberon White Granite Quarry Project

As discussed I have reviewed the letter from the Office of Environment and Heritage dated 19 August 2011 in relation to this project.

I note that OEH have stated “This is particularly relevant now considering the recent Gazetting of *Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland in the South Eastern Highlands, Sydney Basin, South East Corner and NSW South Western Slopes Bioregions* as an Endangered Ecological Community (EEC) under the *Threatened Species Conservation Act, 1995*.”

I have carefully considered the Scientific Committee’s final determination in relation to this recently listed endangered ecological community (EEC) and particularly clause 6 which details the vegetation types which could be considered to form part of the EEC.

The Snow Gum-Mountain Gum Grassy Woodland present on the site **does not** correspond to the *Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland in the South Eastern Highlands, Sydney Basin, South East Corner and NSW South Western Slopes Bioregions* EEC.

It corresponds to map unit 14 of the DEC publication, *‘The Vegetation of the Western Blue Mountains’* (referred to in the Final Determination as DEC 2006c) and not vegetation map units 11 or 15 as described by DEC in the Western Blue Mountains vegetation report.

Accordingly any reliance by OEH on the presence of the EEC as a justification for additional offsets is in error.

I note that I have extensive experience in surveying and classifying vegetation in the western Blue Mountains and the Central Tablelands, including past and present projects for the National Parks and Wildlife Service and the Department of Environment and Conservation. Field data from my surveys has been used in the DEC 2006 c report and other publication referred to in the Final Determination.

Yours sincerely,

Roger Lembit

The Department has also recommended approval conditions that require Mudgee Stone to:

- implement the proposed biodiversity offset strategy;
- rehabilitate the site to a suitable standard;
- prepare and implement a Landscape Management Plan setting out the detailed measures that would be implemented to ensure the site is rehabilitated properly and the biodiversity offset strategy delivers the predicted conservation benefits; and
- lodge a suitable rehabilitation and conservation bond with the Department to ensure the rehabilitation and offset work is completed as planned.

### 4.3 Air Quality

#### Issue

The project would generate a range of dust impacts.

#### Consideration

The EA includes a specialist Air Quality Assessment prepared by Heggies Pty Ltd. The Heggies report presents a contemporaneous assessment of the likely Project air-emissions against a year of known climate and air quality data from 2007. This is known as a Level 2 assessment under the 'Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales' (Approved Methods) and is the more rigorous of the two assessment methods specified in that document.

The Heggies assessment models two operating scenarios. One scenario is at ground level in the north-west of the site, and another at ground level in the south-west of the site. Both scenarios include one blast per day (although there will be only 18 production blasts per year maximum).

In addition, the Heggies assessment assumes dust suppression only from haul-road watering when in practice, the Project would operate with more sophisticated and pro-active dust control measures including:

- stockpile and unsealed surface water spraying, in addition to haul road water spraying;
- weather monitoring and operational amendments including blast rescheduling during adverse weather conditions;
- progressive rehabilitation of un-sealed surfaces including the amenity bunds;
- haulage practices such as proper load-covering to prevent product build-up on paved roads.

The Heggies assessment therefore models worst case scenario conditions. The Department notes that the overall effect of modelling worst case conditions is that the assessment results are conservative and the project's actual air quality impacts are expected to be considerably lower than predicted.

#### Assessment against air quality criteria

The results of the modelling suggest that the proposal would generally make a very small contribution to dust levels at nearby receivers. They also suggest the project would be able to comply with the relevant air quality criteria at all the receivers around the site, apart from a minor exceedance of the dust deposition criteria (see Table 4) and some potential exceedances of the cumulative 24 hour average PM<sub>10</sub> criteria during adverse weather conditions at the newly approved residence on the Webb property.

**Table 4** – Summary of predictions for Annual average PM<sub>10</sub> and deposited dust at Property '2'

| Pollutant                       | Units                   | Background | Increment | Total<br>(Background<br>+ Increment) | Criterion |
|---------------------------------|-------------------------|------------|-----------|--------------------------------------|-----------|
| <b>Scenario 1</b>               |                         |            |           |                                      |           |
| Annual average PM <sub>10</sub> | µg/m <sup>3</sup>       | 16.0       | 3.0       | 19.0                                 | 30.0      |
| Deposited dust                  | g/m <sup>2</sup> /month | 2.0        | 1.1       | 3.1                                  | 4.0       |
| <b>Scenario 2</b>               |                         |            |           |                                      |           |
| Annual average PM <sub>10</sub> | µg/m <sup>3</sup>       | 16.0       | 6.1       | 22.1                                 | 30.0      |
| Deposited dust                  | g/m <sup>2</sup> /month | 2.0        | 2.4       | <b>4.4</b>                           | 4.0       |

Note: predicted exceedance of the respective air quality criterion is highlighted in bold red text.

Given the conservative assumptions underpinning these predictions, both the Department and the EPA are satisfied that Mudgee Stone would be able to avoid these exceedances with the implementation of best practice dust control on site.

To ensure this occurs, the Department has recommended approval conditions that require Mudgee Stone to:

- comply with the relevant air quality criteria at all receivers around the site;
- implement best management practice on site to minimise the dust emissions of the project, including measures to reduce the impacts of the project during adverse weather conditions,
- prepare and implement a detailed Air Quality Management Plan for the project; and
- review the effectiveness of this plan on a regular basis, and update it over time to ensure best practice continues to be implemented on the site.

#### **4.4 Visual amenity**

##### **Issue**

The quarry operation would be visible from residences up to 2 kilometres to the south of the site.

##### **Consideration**

The visual assessment in the EA considers the potential visual impacts of the project, particularly on the residences to the south of the project. These impacts are depicted in the view photographs in **Figure 8**, which correspond to the vantage points shown in arrows in **Figure 9**. **Figure 9** also shows the view catchment and residences that may have a view of quarry operations.

The Department notes that the quarry is quite distant from the potentially affected residences. The Department further notes that this proposal is an expansion of an existing operation. The exposed quarry walls and operations of the quarry have therefore been a 'feature' in the landscape for some time.

While views of the exposed quarry walls and operations would continue to be visible from a distance, the Department does not consider the visual impacts to be severe. Notwithstanding, the Department has recommended a condition that requires Mudgee Stone to provide additional visual mitigation to the affected residences at the request of the owners. The mitigation works would be focused on the dwelling itself, and not other parts of the property, and might include landscaping treatments that screen views to the quarry. The Proponent has agreed to the imposition of such a condition.



**Figure 8 - Views of the site from southern vantages**



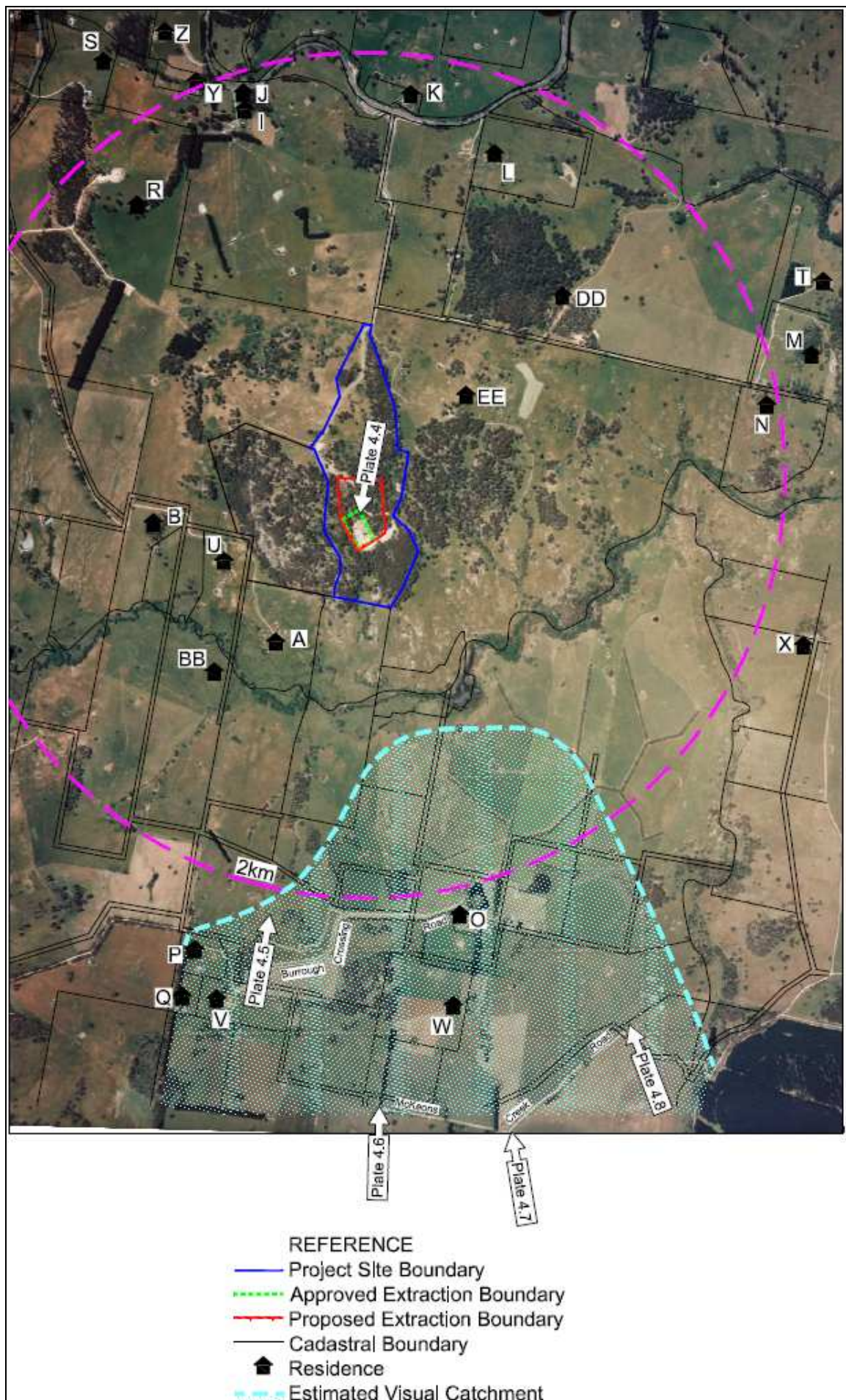


Figure 9 - View Catchment and potentially affected residences

## 4.5 Assessment of other issues

The Department is satisfied that other potential impacts of Project would acceptable or could be suitably controlled by the imposition of appropriate conditions of approval. These issues and the Department's assessment are set-out in **Table 5** below.

**Table 5** - Assessment of other issues

| Issue                | Consideration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Recommendation                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Surface Water</i> | <ul style="list-style-type: none"> <li>The EA includes a Surface Water Assessment and Site Water Balance prepared by GSS Environmental (see APPENDIX B).</li> <li>The site water balance shows that run-off water from the site would be sufficient to supply the quarry's water needs without a supplementary source (a surplus of 27.5 ML/ year to 67.9 ML/ year is expected, depending on weather conditions).</li> <li>The project includes surface water management infrastructure to divert clean water and capture sediment-laden water to settle before it is released.</li> <li>The two dams are appropriately sized and will accommodate a 1 in 100 year rainfall event and a five day, 90<sup>th</sup> percentile rainfall event, respectively.</li> <li>The project includes a suite of appropriate erosion and sediment controls, and a water quality monitoring on-site and in the Duckmaloi River.</li> </ul>                                                                                                                                                                                                                                                                                                           | <p>The recommended conditions require:</p> <ul style="list-style-type: none"> <li>Mudgee Stone to prepare and implement a Surface Water Management Plan for the project, which includes a site water balance, further details on the proposed surface water infrastructure, on and off site water monitoring and a contingency strategy to deal with any unforeseen water impacts.</li> </ul>                |
| <i>Groundwater</i>   | <ul style="list-style-type: none"> <li>The EA includes an assessment of the likely ground water impacts of the project (see APPENDIX B).</li> <li>The proposed quarry base (1130m AHD) would be about 72m above the nearest registered ground-water bore, 570m to the southwest (1058m AHD), and 70m above the Duckmaloi River at its closest point. Interception of groundwater is therefore highly unlikely.</li> <li>Typical of granite geology, there are water-springs nearby that the quarry could affect. The assessment observes that the local topography makes these impacts unlikely.</li> <li>While the Department is satisfied that such impacts are unlikely, it believes Mudgee Stone should be required to provide suitable compensation to landowners in the unlikely event of such impacts occurring.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                     | <p>The recommended conditions require Mudgee Stone to:</p> <ul style="list-style-type: none"> <li>monitor the potential groundwater impacts of the project; and</li> <li>provide an alternative water supply should the project interrupt the ground water supply of nearby landowners.</li> </ul>                                                                                                           |
| <i>Traffic</i>       | <ul style="list-style-type: none"> <li>The EA includes a Traffic Report by Barnson Pty Ltd.</li> <li>Vehicular access is via a 1km stretch of Ferndale Road (local road) to Hampton Road (State Road).</li> <li>Ferndale Road and the Hampton Road junction were constructed by Mudgee Stone for the original quarry approval and are adequate for the project.</li> <li>The Project requires up to 40 trucks per day to deliver products. This is a 6% increase in all traffic on Hampton Road, and an estimated increase of 32% in heavy vehicle traffic.</li> <li>The peak-hour traffic generation would be 12 product trucks; 2 delivery trucks and 10 employee cars, which is 18% of all peak hour traffic on Hampton Road and allows the Ferndale Rd junction to retain its 'A' level of service, which is acceptable.</li> <li>The RMS and Council raised no objection to the proposed traffic generation. The RMS asked for signage and reflective markers to be installed at the existing road junction; and a driver's code of conduct to be implemented during the project.</li> <li>The Department is satisfied that the project will not have an adverse impact on the safety or capacity of the road network.</li> </ul> | <p>The recommended conditions require Mudgee Stone to:</p> <ul style="list-style-type: none"> <li>install signage and reflective markers as specified by the RMS;</li> <li>pay road maintenance contributions to Council for the use of Ferndale Road during the project; and</li> <li>prepare and implement a Driver's Code of Conduct for the project in consultation with Council and the RMS.</li> </ul> |

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                    |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Heritage</i>                | <ul style="list-style-type: none"> <li>• The EA includes an Aboriginal Heritage Assessment prepared by Archaeological Surveys and Reports Pty Ltd.</li> <li>• No items of Aboriginal or non-Aboriginal heritage significance have been identified on the project site through database searches or site surveys.</li> <li>• The potential for unexpected finds during operations is considered to be minimal because of the granitic geology and south facing slope.</li> </ul>                                                                                                                                                                                                             | No conditions necessary.                                                                                                                                                                                                                                                           |
| <i>Greenhouse Gases</i>        | <ul style="list-style-type: none"> <li>• The EA contains a Greenhouse Gas (GHG) Assessment undertaken by Heggies Pty Ltd.</li> <li>• The annual emissions from the project would be approximately 0.0002% of NSW emissions and approximately 0.00006% of Australian emissions.</li> <li>• The Department considers that, on a comparative basis, the total GHG emissions from the Project are a very small proportion of the State's GHG emissions, and when considered in isolation, the Project would have a negligible contribution to global warming/climate change.</li> </ul>                                                                                                         | <p>The recommended conditions require Mudgee Stone to:</p> <ul style="list-style-type: none"> <li>• minimise the greenhouse gas emissions of the project; and</li> <li>• describe the measures that would be implemented to do this in the Air Quality Management Plan.</li> </ul> |
| <i>Developer contributions</i> | <ul style="list-style-type: none"> <li>• Oberon Council requested the imposition of developer contributions totalling \$5043 in accordance with its s94 contributions plan.</li> <li>• Council also requested a road maintenance contribution of 10c per tonne of transported extractive material.</li> <li>• Mudgee Stone has agreed to pay these contributions.</li> </ul>                                                                                                                                                                                                                                                                                                                | <p>The recommended conditions require Mudgee Stone to:</p> <ul style="list-style-type: none"> <li>• Pay the agreed developer contributions.</li> </ul>                                                                                                                             |
| <i>Socio-economics</i>         | <ul style="list-style-type: none"> <li>• The project would generate six to 10 operation jobs and a further 15 to 20 jobs in transport.</li> <li>• The project involves capital investment of \$2.8 million, and is expected to inject up to \$750,000 into local and regional economies annually.</li> <li>• It is expected to contribute a further \$600,000 in wages to truck drivers.</li> <li>• The project extracts a significant natural resource to supply Australia's only ceramic tile manufacturer with critical raw materials.</li> <li>• The Department is satisfied that the project would have a positive socio-economic effect on the locality, region and state.</li> </ul> | No conditions necessary.                                                                                                                                                                                                                                                           |

## 5. CONCLUSION

The Department has carried out a detailed assessment of the merits of the project, in accordance with the requirements of the EP&A Act.

The project would extract and process granite products from a recognised, significant regional resource and on this basis represents an important resource development for the region and for the State. Supply of granite products from the project to major employment generating industrial developments, including State significant tile manufacturing operations, further underpin the significance of the project.

Notwithstanding, the location, scale and configuration of the project and the site with respect to surrounding residential receivers means that it is relatively constrained, particularly in relation to the local acoustic environment. Comprehensive and proactive noise mitigation and management would be required to ensure that the project achieves acceptable environmental outcomes and does not adversely affect the amenity of local receivers. The need for clearing of native vegetation on the site, and residual risks with respect to local groundwater users, while manageable, present additional performance challenges for the project.

The Department has recommended a range of conditions to ensure that these impacts are suitably mitigated, managed and/ or offset. These conditions include requirements for The Proponent to:

- carry out noise mitigation work (if the owner requests) on a particular noise affected property;
- implement measures to minimise air quality, noise, water, traffic and visual impacts;
- implement a biodiversity offset strategy,
- compensate off-site local spring water supply users, if necessary;