



ASSESSMENT REPORT

**PROPOSED EXTENSION OF THE CLEARY BROS HARD ROCK QUARRY,
DUNSTERS LANE, CROOM**

File No: S00/00534

1. SUMMARY

Cleary Bros (Bombo) Pty Ltd (the Applicant) owns and operates a hard rock (basalt) quarry and processing plant near Albion Park in the Shellharbour local government area.

The Applicant is proposing to:

- Extend the quarry onto a nearby property (DA 466-11-2003); and
- Construct a haul road from the existing quarry to the quarry extension (DA 467-11-2003).

The proposal has a capital investment value of about \$600,000, and would generate continued employment for up to 40 people during operation.

Under the *Environmental Planning & Assessment Act 1979* (EP&A Act), the proposal is classified as State significant, integrated, and designated development. Consequently, the Minister for Infrastructure and Planning is the consent authority for the proposal.

On 10 November 2003, the Applicant lodged two development applications with the Department: one for the proposed quarry extension (DA 466-11-2003); and the other for the proposed haul road (DA 467-11-2003). These applications were accompanied by a single Environmental Impact Statement (EIS) covering both proposals.

The Department subsequently exhibited both DAs and the EIS in accordance with the requirements for public participation in *the Environmental Planning & Assessment Regulation 2000* (EP&A Regulation).

During the exhibition period, the Department received 28 submissions on the DAs: 7 from public authorities, 19 private submissions, plus 1 form letter from 5 residents, and a petition signed by 33 residents. 14 of the private submissions made a formal objection to the proposal.

The integrated approval bodies – the Department of Environment & Conservation, and Department of Infrastructure, Planning and Natural Resources – have provided their General Terms of Approval for the proposals.

The Department has assessed the DAs, EIS, and submissions on the proposal, and recommends that the Minister approve the DAs subject to conditions, including the staged development consent for the quarry extension DA.

It is noted that the land subject to the development applications requires rezoning to allow the proposal to be permissible. Shellharbour City Council, at its meeting on 24 February 2004, resolved to support the rezoning of the land, adopting *Shellharbour Local Environmental Plan 2000 – Amendment 4*, and *Shellharbour Rural Local Environmental Plan 2004 – Amendment 1*. The Minister needs to make a decision on the rezoning before a decision is made on the development application.

2. CURRENT SITUATION

Cleary Bros (Bombo) Pty Ltd's existing Albion Park hard rock quarry is located at Croom, approximately 2 km east of Albion Park and 5km west of Shellharbour (see Figure 1). Cleary Bros has been operating the quarry for some 40 years.

Rock extracted from the quarry is *Bumbo latite*, commonly known as 'basalt' or 'blue metal'. Resource within the existing quarry is all but exhausted, and the Applicant does not operate any other quarry with extractable hard rock resources.

Landuse in the area of the Albion Park quarry is historically dairy farming, which has been modified in recent times with a number of hard rock quarries and processing plants.

The land proposed for the quarry extension comprises a 40 hectare allotment (Lot 1 DP 858245), owned by the Applicant. The proposed quarry extension covers approximately 13 hectares of the allotment, comprising predominately cleared grassland for grazing with scattered trees and pockets of remnant vegetation. The balance of the site at lower elevations is covered with dense vegetation including rainforest. The proposed quarry extension is about 400m east of the Applicant's existing quarry.

The land proposed for the haul road (part Lot 2 DP 858245) is owned by Readymix Holdings Pty Ltd, which has provided its owners consent for the application. The proposed haul road alignment comprises mostly grassland, but also comprises an abandoned homestead ('Kyawana') which is proposed to be demolished.

3. PROPOSED DEVELOPMENT

The Applicant is proposing to extend its existing hard rock quarry, and construct a haul road between the quarry extension and the existing quarry/processing plant, as shown on Figure 1 and Figure 2.



Figure 1: Location Plan

3.1 Available Resource

The resource present in the proposed extension comprises approximately:

- 13 million tonnes of *Bumbo latite*;
- 1.5 million tonnes of overburden, to be used as site filling and lower quality fill material for sale; and
- 2 million tonnes of tuffaceous agglomerate, to be used as site filling and lower quality fill material for sale.

3.2 Method of Extraction

The hard rock resource would be fractured with blasting and then transferred to the existing processing plant via dump trucks. Large rocks would be broken up using a hydraulic rock breaker.

3.3 Infrastructure

Development of the quarry would include:

- Construction of the haul road, comprising a 14m all weather carriageway;
- Installation of 2m high chain wired perimeter fencing with lockable gates;
- Installation of a pump-out portable toilet and small tank for drinking water;
- Installation of sediment controls;
- Progressive clearing of areas to be quarried;
- Construction of an earthen bund along part of the northern and eastern site boundaries, and on the northern side of the haul road;
- Revegetation and screen planting;
- Installation of monitoring equipment, including dust gauges, blast monitors, creek flow meters, boreholes and a weather station.

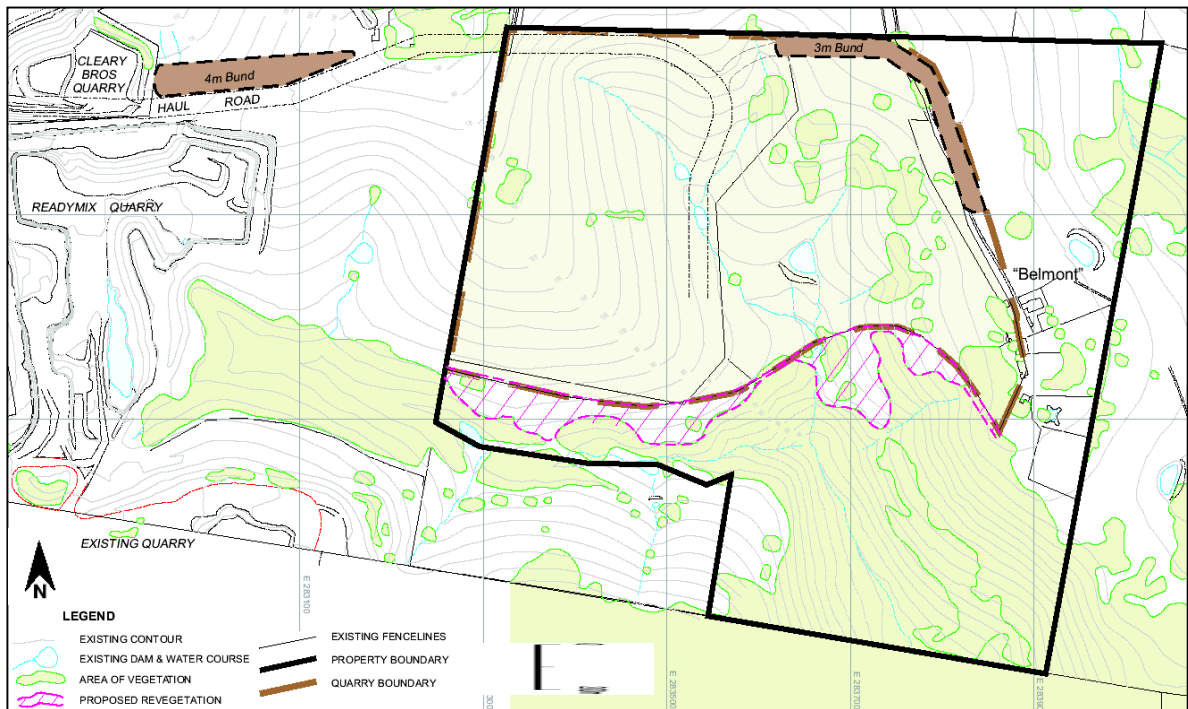


Figure 2: Proposal Concept Plan (scale approximate only)

3.4 Extraction Rate

The quarry is proposed to be developed in six 5-year stages, over a 30 year period (see Figure 3).

The EIS implies in a number of sections that the quarry would be operated at a production rate of up to 400,000 tonnes of hard rock per annum. The advertisement for the public exhibition period quoted this production rate.

The Applicant has subsequently argued that a production rate of up to 500,000 tonnes per annum should be accepted. However, in light of the references to production rates in the EIS and public notification, the Department considers that an increase to 500,000 tonnes at this time could not be supported.

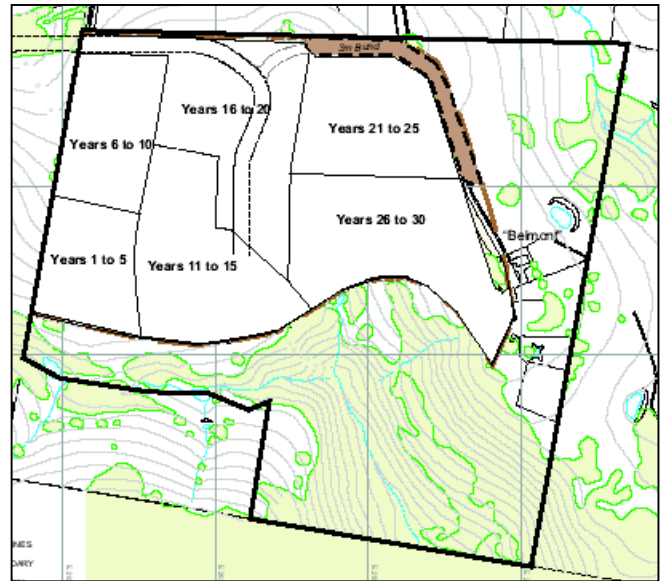


Figure 3: Staging Plans

4. STATUTORY CONTEXT

Under the EP&A Act, the proposal is classified as State significant, integrated, and designated development.

4.1 State Significant Development

The proposal is classified as State significant development, under Section 76A(7) of the EP&A Act, by virtue of a declaration by the Minister for Urban Affairs and Planning, dated 3 August 1999. The proposal meets the Minister's Declaration criteria, because the total resource is greater than 5 million tonnes and extraction rates would exceed 200,000 tonnes per annum.

4.2 Integrated Development

The proposal is classified as integrated development, under Section 91 of the EP&A Act because it requires additional approvals from:

- The Department of Environment and Conservation, under the *Protection of the Environment Operations Act 1997*; and
- The Department of Infrastructure, Planning and Natural Resources, under the *Rivers and Foreshores Improvement Act, 1948*.

4.3 Designated Development

The proposal is classified as designated development, under Section 77A of the EP&A Act and Schedule 3 of the EP&A Regulation 2000, because it is an extractive industry obtaining more than 30,000 cubic metres of material per year, and will disturb a total surface area of more than 2 hectares of land.

4.4 Permissibility

To enable the development to be permissible, the Applicant was required to apply to Shellharbour City Council to have the subject land rezoned.

A rezoning application was made by the Applicant to Shellharbour City Council in 1998, requesting Council to alter the zoning of the land under the *Shellharbour Local Environmental Plan 2000* from 7(d) Environmental Protection (Scenic) to 4(c) Extractive Industrial, and the zoning under the *Draft Shellharbour Rural Local Environmental Plan 2004* from Rural Landscape 1(rl) to Extractive Industry (1x). The Local Environmental Study (LES) prepared for the rezoning application was subsequently placed on public exhibition, concurrently with the EIS for the development application.

At its meeting on 24 February 2004, Council resolved to support the rezoning of the land to allow for the development of the quarry (Stages 1 – 6, with a 20m zone setback from the southern boundary) and the haul road.

(The Department notes that the *Shellharbour Rural LEP 2004* has since been made, which has negated the need to rezone the land under the *Shellharbour LEP 2000*).

At the date of this report, the Minister had not made the *Shellharbour Rural LEP 2004 (Amendment No.1)*. Consequently, the Minister needs to make a decision on the rezoning application before a decision is made on the development application for the quarry extension.

4.5 Environmental Planning Instruments

The following planning instruments and policies are relevant to the proposal:

- *State Environmental Planning Policy (SEPP) No. 11 - Traffic Generating Developments;*
- *Illawarra Regional Environmental Plan No. 1, 1986;*
- *Shellharbour Local Environmental Plan, 2000;*
- *Shellharbour Rural Local Environmental Plan, 2004.*

An assessment of the proposal in relation to each of these environmental planning instruments is provided in Appendix A.

The Department is satisfied that the proposal meets the relevant requirements of the applicable environmental planning instruments.

5. CONSULTATION

On 10 November 2003, the Applicant lodged the two DAs and an EIS for the proposal with the Department.

The Department subsequently:

- Notified all residents in the vicinity of the site who could be affected by the proposal;
- Notified Shellharbour City Council and all the relevant State government agencies;
- Advertised the exhibition of the DAs and EIS in the Warilla Lake Times and Illawarra Mercury;
- Exhibited the DAs and EIS from 12 November 2003 until 15 December 2003.

This satisfies the requirements for public participation in the EP&A Regulation.

During the exhibition period, the Department received 28 submissions on the DAs: 7 from public authorities, 19 private submissions, plus 1 form letter from 5 residents, and a petition signed by 33 residents. 14 of the private submissions made a formal objection to the proposal.

Issues raised in the private submissions, and the number of submissions in which each issue was raised, is presented in the following table.

| Issues raised in private submissions | Frequency |
|---|------------------|
| Air quality / dust | 13 |
| Noise | 12 |
| Blasting / vibration | 11 |
| Social & economic | 8 |
| Visual | 8 |
| Flora & fauna | 7 |
| Project need | 5 |
| Traffic | 4 |
| Soil | 2 |
| Heritage | 1 |
| Surface & groundwater | 1 |

Table 1: Issues Raised in Private Submissions

The Department has assessed these concerns in detail in Section 6 of this report.

6. CONSIDERATION OF KEY ISSUES

The Department has assessed the proposal, EIS and submissions on the proposal, and additional information provided by the Applicant, and believes that the following are the key issues.

6.1 AIR QUALITY

6.1.1 Air Quality Assessment

An air quality assessment for the proposed quarry extension, including predictive dispersion modelling, was undertaken by Richard Heggie Associates (see Appendix M of the EIS).

The modelling indicates that the applicable air quality criteria will be met at the nearest sensitive receiver ('The Hill' residence) for all modelled years of the quarry operation. The results are illustrated in the following table.

| Pollutant | Year of Operation | Criterion | Predicted levels at 'The Hill' |
|--|-------------------|-----------|--------------------------------|
| 24hr PM10 ($\mu\text{g}/\text{m}^3$) | 5-30 | 50 | <25 |
| Annual average TSP ($\mu\text{g}/\text{m}^3$) | 5-30 | 90 | <30 |
| Annual average dust ($\text{g}/\text{m}^2/\text{mth}$) | 5-15,20,30 | 2 | <1 |
| | 25 | | slightly over 1 |

Table 2: Air Quality Predictions at 'The Hill'

The EIS also included a specialist report by agricultural consultants Cowman Stoddart Pty Ltd, on the potential impacts of quarrying on the agricultural values of 'The Hill' property. The report cites relevant research and concludes that dust is unlikely to affect pasture palatability, dairy cattle's willingness to graze such pasture, or milk production.

Mitigation Measures

The Applicant has indicated that it would:

- Confine vehicle movements to a single access path (ie. the proposed haul road);
- Maintain the haul road in a moistened state;
- Cease dust generating activity in strong winds;
- Employ a wheel cleaning facility at the site entrance;
- Clean access roads as required;
- Minimise the drop height for unloading trucks.

6.1.2 Issues Raised in Submissions

The Department received 14 submissions on the potential air quality impacts of the proposal: 13 from the general public and 1 from NSW Agriculture.

Issues raised include:

- Potential dust impacts on nearby residences and resident's health;
- Prevailing dusty conditions associated with existing Cleary Bros quarry;
- Potential dust deposition impacts on pasture, and resultant impacts on feed uptake and milk production;
- Potential dust impacts on cattle health.

6.1.3 Additional Information Requested

In response to concerns regarding potential impacts on dairy cattle production and health, the Applicant commissioned Registered Veterinary Surgeon, Associate Professor Evan Hunt, to undertake a research investigation into potential livestock impacts. The investigation cites a number of studies and concludes that the quarry extension should have no or minimal effect on livestock production on the adjoining property during all stages of development, and that 'dust emissions at the levels estimated or even more than double those levels will have no impact on pasture production or the performance or health of the cattle grazing the pastures...'

The Applicant also provided additional information from Richard Heggie Associates, which states that actual dust deposition associated with the development is likely to be lower than the worst case scenario modelled in the EIS.

6.1.4 Consideration of Key Issues

The Department is satisfied with the air quality assessment in the EIS, and the additional information supplied, and is confident that the proposal would comply with all the relevant air quality criteria with proper dust management.

With regard to potential air quality (dust) impacts on cattle health and pasture production, the Department is satisfied that the information provided in the EIS, and the additional information provided by Prof. E. Hunt, demonstrates that dust associated with the proposal is unlikely to have a significant impact on agricultural values of the surrounding area.

The EIS notes that 'The Hill' residence (ie. the closest sensitive receiver), is within 500m during Stage 5 of the quarry operation (ie. years 21 to 25). Although the Department is satisfied the Applicant has demonstrated that the development would be able to comply with relevant air quality criteria during this stage, the Department has recommended a staged development consent to the quarry extension DA as a precautionary measure given the proximity of the site to 'The Hill'. The staged development consent will require the Applicant to seek the Minister's approval prior to the extraction of Stages 5 and 6. Any such approval would be contingent on the Applicant demonstrating on-going environmental compliance though these stages, based on its performance during Stages 1 to 4.

6.1.5 General Terms of Approval

DEC has determined that it would be able to vary the existing Environmental Protection Licence held by the Applicant for the proposed development, and has provided its General Terms of Approval for the proposal.

6.1.6 Conclusion

The Department is satisfied that the proposal would not generate any significant air quality impacts.

However, the Department believes the Applicant should be required to:

- Comply with the relevant air quality criteria;
- Minimise air pollutant emissions from the development;
- Implement appropriate dust management measures;
- Monitor dust levels and implement corrective action as required; and
- Not undertake extraction in Stages 5 and 6 without the Minister's approval.

6.2 NOISE

6.2.1 Noise Impact Assessment

A noise impact assessment for the proposed quarry extension was undertaken by Richard Heggie Associates, in accordance with the NSW Industrial Noise Policy (see Appendix L of the EIS).

The assessment indicates that the applicable noise criteria will be met at the nearest sensitive receivers for all modelled years of the quarry operation, with the exception of construction noise. The results are illustrated in the following table (exceedances in bold).

| Noise Type | Nearest Receptor | Criterion type | Criterion | Predicted levels |
|--------------------|---------------------|--|-----------|----------------------|
| Operational Noise | The Hill | Intrusiveness $L_{Aeq(15min)}$ | 39 | 33 @yr10 |
| | | Amenity $L_{Aeq(period)}$ | 55 | 38 @yr20 34 @yr30 |
| | Greenmeadows Estate | Intrusiveness $L_{Aeq(15min)}$ | 43 | 41 @yr10 |
| | | Amenity $L_{Aeq(period)}$ | 55 | 41 @yr20 41 @yr30 |
| Construction Noise | The Hill | <4 wk construction | 54 | 51 |
| | | 4-26 wk construction | 44 | 51 |
| Traffic Noise | Greenmeadows Estate | Daytime noise goal $L_{Aeq(1hour)}$ | 60 | 42 |

Table 3: Noise Predictions

The construction noise exceedance is related to construction of the earthen noise/visual bund along the northern and eastern boundaries of the quarry. The Applicant reports that the quarry establishment and bund construction is likely to take 26 weeks to complete. To minimise noise impact during this

construction, the EIS proposes a number of mitigation measures which would be encompassed within a construction noise management plan.

Mitigation Measures

The Applicant has indicated that it would:

- Construct an earthen noise/visual bund along part of the northern and eastern boundaries, and to construct the bund as quickly as possible;
- Limit hours of operation to existing hours of existing quarry (ie. daytime hours only);
- Select plant to achieve specified sound power levels; and
- Monitor noise levels associated with operations.

6.2.2 Issues Raised in Submissions

The Department received 14 submissions on the potential noise impacts of the proposal: 12 from the general public and 1 from NSW Agriculture.

Issues raised include:

- Noise exceedances during construction;
- Noise impact on neighbouring properties, from drilling, blasting, trucks and machinery;
- Operations outside stated hours of operation;
- Consideration of temperature inversions; and
- Noise impacts on cattle and rural lands.

6.2.3 Additional Information Requested

The DEC (EPA) requested clarification with regard to technical aspects of the noise modelling conducted in the EIS. Following the provision of this information from the Applicant's noise consultant (Richard Heggie Associates), the DEC was able to issue its General Terms of Approval.

In response to concerns regarding noise impacts on dairy cattle production and health, the Applicant commissioned Assoc. Prof. Evan Hunt, to undertake a research investigation into potential livestock impacts. The investigation cites previous studies that indicate that animals exhibit a 'rapid adaptability' to noise. Studies on livestock subject to jet flyovers (including sonic booms), train passby, electrical storms, road traffic and fireworks displays indicate that although initially experiencing startle behaviour, animals quickly adapt, with no demonstrated effect on (milk) output or production.

6.2.4 Consideration of Key Issues

The Department is satisfied with the noise impact assessment in the EIS, and the additional information supplied, and is confident that the proposal would comply with relevant noise criteria with proper management.

The predicted temporary exceedance of construction noise criteria during construction of the northern earthen bund is considered to be justified given the temporary nature of these works, and that the bund is being constructed to attenuate noise and visual impact during quarry operations.

6.2.5 General Terms of Approval

DEC has determined that it would be able to vary the existing Environmental Protection Licence held by the Applicant for the proposed development, and has provided its General Terms of Approval for the proposal.

6.2.6 Conclusion

The Department is satisfied that the proposal would not generate any significant on-going noise impacts.

However, the Department believes the Applicant should be required to:

- Comply with the relevant operational noise criteria at all sensitive receivers;
- Complete construction of the visual/noise bunds as quickly as possible whilst limiting construction activities to daytime hours;
- Limit operational activities to daytime hours as per the existing approved hours;
- Restrict all traffic along Dunsters Lane;
- Implement appropriate noise management measures;

- Communicate quarry operations with surrounding landusers, and effectively respond to enquiries and complaints; and
- Not undertake extraction in Stages 5 and 6 without the Minister's approval (see Section 6.1).

6.3 AIRBLAST AND VIBRATION

6.3.1 Blast Impact Assessment

A blasting assessment was undertaken by Richard Heggie Associates as part of the noise impact assessment for the proposal (see Appendix L of EIS). The assessment was undertaken with reference to the blast criteria listed within the ANZECC guidelines (1990) for the minimisation of annoyance due to blasting overpressure and ground vibration, namely:

- 5 mm/sec, for ground vibration (peak vector sum); and
 - 115 dBA, for airblast overpressure (peak linear),
- with an allowable exceedance of these criteria of up to 5% within any 12 month period.

These criteria have been adopted in the Applicant's existing Environmental Protection Licence, which also restricts blasting to between 8.30am and 5.00pm Monday to Friday.

The EIS states that blasting would be conducted about 30 to 40 times per year.

The assessment notes that the limiting parameter for blast design at the Site is airblast, rather than ground vibration.

Blast modelling indicates that for a 5% likelihood of exceeding 115 dBA airblast at 500m, the allowable maximum instantaneous charge (MIC) is 36kg. The assessment concludes that 'trials have clearly demonstrated that blasting [with a MIC of 36kg] can be conducted to within about 500m of 'The Hill' residence whilst maintaining compliance with the current EPA licence conditions'. This conclusion is subject to certain operational mitigation measures, including incorporation of 'deck charges' and initiating the blast in the opposite direction of the sensitive receptor. (It is important to note that the blasting trials were undertaken predominantly with reference to a separation distance of 500m from source to sensitive receiver. One trial conducted at 250m with a MIC of 39kg, exceeded the criteria).

The EIS notes that 'The Hill' residence (ie. the closest sensitive receiver), is within 500m during Stage 5 of the quarry operation (ie. years 21 to 25). The EIS states that blast monitoring conducted during the early years of operation will be used to design appropriate blasting operations during years 21 to 25 to ensure that EPA criteria continue to be met at 'The Hill'. The Department notes that Stage 4 of the quarry operation (ie. years 16 to 20) is also close to, if not within 500m of 'The Hill'.

The EIS also included a specialist report by agricultural consultants Cowman Stoddart Pty Ltd, on the potential impacts of quarrying on the agricultural values of 'The Hill' property, including blasting impacts. The report concludes that it is unlikely that cattle abortions on 'The Hill' are being caused by blasting, and that the abortion rate on the property is within the 5% limit accepted by veterinarians as natural occurrence of abortion.

Mitigation Measures

The Applicant has indicated that it would:

- Undertake property condition surveys on buildings at 'The Hill';
- Incorporate 'deck charges' in the front row of blast holes for each blast;
- Initiate each blast in the direction opposite to the nearest sensitive receiver;
- Limit MICs in accordance with existing site laws;
- Monitor blasting and adjust blast design as required; and
- Meet the cost of repairs to property damage associated with blasting.

6.3.2 Issues Raised in Submissions

The Department received 12 submissions on the potential blast impacts of the proposal: 11 from the general public and 1 from NSW Agriculture.

Issues raised include:

- Blasting criteria exceedances at separation distances less than 500m;
- Blasting impacts on cattle;
- Structural damage to buildings;

- Flyrock associated with blasting;
- Residents receive no warning of current blasting activities in the area; and
- Blasting effect on heritage values of 'Belmont' (Nb. 'Belmont' is not a listed heritage item).

6.3.3 Additional Information Requested

Blasting Criteria Compliance

Subsequent to the exhibition of the EIS, the Applicant forwarded a clarifying statement with regard to the ability of the proposal to meet airblast criterion at separation distances less than 500m (Richard Heggie Associates, 23 February 2004). The statement calculated that the airblast criterion could be met at 'The Hill' by reducing the MIC to 28kg, when blasting at the quarry's closest point to the receiver (approximately 460m). Further, the statement reports that the Applicant has demonstrated practical blasting design with MICs as small as 7kg and 11kg.

Airblast Impacts on Cattle

Further information with regard to potential airblast impacts on cattle health was provided by the Applicant in the aforementioned report prepared by Assoc.Prof Evan Hunt. The report states that startle would be seen with cattle unaccustomed to blasting, but that this would rapidly diminish with experience. With an MIC of 108kg, the report states that an acceptable noise level of 125dBA would be achieved between within 200m of the source.

With regard to abortion rates at 'The Hill', Hunt states that an abortion rate of 5% is significant and should be investigated, but that all published scientific information excludes the various sources of noise and vibration as a cause of abortion in animals.

6.3.4 Consideration of Key Issues

Blasting Criteria Compliance

The Department considers that the Applicant has demonstrated to a reasonable extent that blasting would be able to be undertaken in compliance with applicable EPA criteria for all stages of the development. However, a lack of certainty with regard to blast design compliance during Stage 4 (ie. years 16 to 20) and Stage 5 (ie. years 21 to 25) compels the Department to employ the precautionary principle for quarrying operations during these stages. As such, the Department recommends the inclusion of conditions requiring the Applicant to substantiate blast design and demonstrate compliance prior to the commencement of each stage of quarrying, based on actual blast monitoring data from the operating quarry (through establishment and maintenance of Blast Management Plans).

Further, as discussed in Section 6.1 the Department has recommended that the quarry extension be subject to a staged development consent, which will require the Minister's approval prior to the commencement of extraction in Stages 5 and 6, with approval based on the Applicant demonstrating the ongoing environmental compliance of the quarry operations.

Other Blasting Issues

The Department is satisfied that other blasting issues are able to be managed effectively through the adoption of appropriate mitigation measures, as outlined below.

With regard to potential blast impacts on cattle health including increased abortion rates, the Department is satisfied that the information provided in the EIS (ie. the Cowman Stoddart report), and the additional information provided by Prof. E. Hunt, demonstrates that blasting is unlikely to have a significant impact on agricultural values of the surrounding area.

However, given the proximity of the quarry to paddocks associated with agricultural landuse (ie. the Dunster property), the Department believes the Applicant should be required to develop appropriate Blast Management Plans, in consultation with adjacent landowners, to mitigate potential blast impacts (eg. flyrock) on stock.

6.3.5 General Terms of Approval

DEC has determined that it would be able to vary the existing Environmental Protection Licence held by the Applicant for the proposed development, and has provided its General Terms of Approval for the proposal.

6.3.6 Conclusion

The Department is satisfied that the proposal could be conducted in accordance with applicable criteria.

However, the Department considers the Applicant should be required to:

- Substantiate blast design and compliance prior to the commencement of each quarrying stage (following Stage 1) in Blast Management Plans, based on actual blast monitoring data from quarrying operations;
- Comply with the relevant airblast and vibration criteria at sensitive receivers at all times;
- Monitor all blasting activities;
- Communicate blasting activities with surrounding landusers, and include within its Environmental Strategy measures to effectively respond to enquiries and complaints;
- Implement all proposed mitigation measures detailed in the EIS;
- Mitigate, remediate or compensate for any blasting impacts of the development on property, or the use of property; and
- Not undertake extraction in Stages 5 and 6 without the Minister's approval (see Section 6.1).

6.4 GEOLOGY, SOIL AND WATER

6.4.1 Hydrogeological Investigation

Golder Associates Pty Ltd prepared a preliminary hydrological study and undertook a surface water quality investigation for the proposed quarry.

Site drainage is to the south-east, with one main ephemeral creekline running through the proposed quarry. This watercourse drains to a semi-permanent east-west running unnamed creek, located to the south of the proposed quarry site.

The geology of the site (ie. basalt) indicates low horizontal permeability, except in possible fractured zones. The investigation reports that extraction at lower levels may have some impact on groundwater seepage paths, which may require a low level water release from the quarry to compensate.

Surface water quality monitoring indicates that the water quality in the unnamed east-west creek below the proposed quarry may be affected by existing quarrying activities in the area, with elevated suspended solids, copper and zinc levels. Golder suggests that these concentrations probably represent background levels because of the volcanic rocks in the catchment (however, lower concentrations in the tributary unaffected by existing quarrying activities suggests at least some influence from existing quarrying operations).

Mitigation Measures

The Applicant has indicated that it would:

- Implement best practice erosion and sediment control measures;
- Not store any fuels or other contaminants within the quarry site;
- Develop and implement a water release management plan to maintain appropriate riparian flows;
- Monitor groundwater and if necessary implement compensatory surface flows;
- Test and if necessary treat collected water prior to release; and
- Progressively rehabilitate the quarry, and liaise with adjoining quarry operators to ensure a consistency in final landform.

6.4.2 Issues Raised in Submissions

The Department received 6 submissions on the potential soil and water impacts of the proposal: 3 from the general public and 3 from agencies (Kiama Council, DIPNR, DEC).

One private submission raised concerns regarding potential hydrological impacts on the quality of farm pasture at 'The Hill'.

DIPNR (Natural Resources) raised the following issues:

- Insufficient baseline groundwater and surface water data in the EIS;
- A water balance should be provided;
- Compensatory revegetation undertaken by qualified bush regenerators is supported;
- A soil and water management plan should be submitted for DIPNR's approval prior to each extraction stage;

- Rehabilitation of the quarry should be conducted in a staged manner using rainforest species; and
- Non-obstructive flow metering devices, rather than v-notch weirs, should be installed for creek monitoring.

DEC (NPWS) raised concerns about the potential impacts of hydrological change (watertable drawdown) on the downslope threatened species including Illawarra Subtropical Rainforest.

6.4.3 Additional Information Requested

The Applicant provided further information in relation to the issues raised by DIPNR (Natural Resources), DEC (NPWS), and the private submissions.

In relation to DIPNR's concerns about insufficient hydrological data, Golder Associates provided an additional desktop conceptual hydrogeological model for the development. Golder's report states that it believes the impacts on groundwater levels and resources immediately surrounding the proposed quarry are 'low to negligible'. Further, Golder argued that detailed hydrological data collection should be allowed to be conducted during the early stages of operation, given the low permeability of the area's geology, and the lack of evidence of downslope rainforest impact associated with Readymix's existing fully developed quarry, located nearby.

With regard to potential impacts on 'The Hill', the Applicant provided further information from Golder Associates and Douglas Partners. Both consultants concurred that the proposal is highly unlikely to have an adverse impact on groundwater supply conditions or the quality of pasture, due to the (higher) elevation of 'The Hill' in relation to the quarry, and the low permeability characteristics of the area.

Douglas Partners concurred with Golder's recommendation that detailed hydrological studies can be undertaken concurrently with the early stages of quarry operations.

6.4.4 General Terms of Approval

DEC has determined that it would be able to vary the existing Environmental Protection Licence held by the Applicant for the proposed development, and has provided its General Terms of Approval for the proposal. DIPNR (Natural Resources) has provided its General Terms of Approval for the proposal.

6.4.5 Consideration of Key Issues and Conclusion

Following the provision of additional information, the Department is satisfied that the proposal is able to be managed such that any impacts to soil and water can be mitigated.

The DEC has provided a number of proposed conditions relating to surface and groundwater management, developed in consultation with DIPNR.

The Department, in consideration of DEC's proposed conditions, believes the Applicant should be required to:

- Prepare an integrated Water Management Plan in consultation with DIPNR and DEC, and progressively implement, review and update the plan;
- Include within the Water Management Plan a detailed Water Balance, Erosion and Sediment Control Plan, Surface Water Monitoring Program, Ground Water Monitoring Program and Water Management (Water Use Efficiency) Strategy;
- Undertake progressive rehabilitation of the site in accordance with an approved Rehabilitation Management Plan; and
- Not undertake extraction in Stages 5 and 6 without the Minister's approval (see Section 6.1).

6.5 TRANSPORT

6.5.1 Transport Assessment

A transport assessment for the proposal was undertaken by Masson Wilson Twiney Pty Ltd (Appendix N of EIS).

The proposal involves the use of road transport for quarry products, and considers that other transport modes are not suitable because of the varied destinations for product, most of which are only accessible by road.

The proposed quarry haulage route provides direct access to the arterial road network (via the newly constructed Link Road), avoiding the need for quarry traffic to travel through residential areas.

The assessment concludes that the proposal would not significantly add to the existing traffic volumes associated with the quarry, and would not have a significant impact on the local road network.

Mitigation Measures

The Applicant has indicated that it would not utilise Dunsters Lane for site access, except for initial investigation and survey.

6.5.2 Issues Raised in Submissions

The Department received 6 submissions on the potential traffic impacts of the proposal: 4 from the general public and 2 from agencies (RTA and NSW Agriculture).

Issues raised include:

- Access along Dunsters Lane, and resultant impacts on the Dunster family's amenity;
- Increased truck movements;
- Increased dust/pollution from trucks;
- Truck wash facility / covering loads;
- Truck movements in residential areas; and
- Increased truck noise and health effects;

The RTA supported the proposal and offered a number of comments, including:

- Access to the site to be via roundabout at East-West Link Road [ie. the proposed site access];
- 'Right of way' must be included on Title Deeds across adjacent land prior to approval;
- Haulage road shall be at minimum continuation of existing road standard; and
- The DA be limited to a maximum of 10 years (due to 'potential changes to traffic volumes in the future' – Wal Smart, RTA, pers.comm.).

6.5.3 Consideration of Key Issues and Conclusion

The Department is satisfied that the proposal would not generate any significant traffic impacts on the local road network, or on the amenity of surrounding landusers.

The Department does not support the RTA's recommendation to limit the approval to 10 years as the Applicant has demonstrated that the proposal would not significantly increase peak traffic generation, and a reduction to 10 years would place an unreasonable uncertainty over the viability of the proposal. The RTA does not object to this position (Wal Smart, RTA, pers.comm.).

However, the Department considers the Applicant should be required to:

- Confine all site access to the proposed haulage route;
- Restrict all access along Dunsters Lane, apart from preliminary investigation and survey work;
- Formalise the 'right of way' for the haulage route prior to commencement of works;
- Establish and maintain the haulage road to appropriate standards; and
- Implement measures to minimise dust emission associated with truck movements.

6.6 FAUNA AND FLORA

6.6.1 Flora and Fauna Impact Assessment

A Flora and Fauna Impact Assessment for the proposal was undertaken by Kevin Mills and Associates Pty Ltd (KMA).

The proposed quarry site is mostly cleared for grazing, but has pockets of remnant vegetation in gullies and steeper slopes. A significant area of rainforest is located downslope of the proposed quarry, within the same allotment.

Flora and fauna of significance in the vicinity of the proposed quarry area include:

- 'Illawarra Subtropical Rainforest', an endangered ecological community (ECC) under the *Threatened Species Conservation (TSC) Act, 1995*;

- Melaleuca shrubland within black wattle regrowth, which contains populations of a nationally vulnerable plant;
- 'Illawarra Lowlands Grassy Woodlands', an ECC under the TSC Act;
- *Cynanchum elegans* (White Cynanchum), *Daphnandra sp.aff micrantha* (Illawarra Socketwood), and *Zieria granulata* (Illawarra Zieria), listed threatened plant species under the TSC Act; and
- Grey-headed flying fox, a listed threatened fauna species under the TSC Act.

Of the flora communities/species, only the 'Illawarra Subtropical Rainforest' occurs within the proposed quarry area. The grey-headed flying fox was considered to be likely to utilise fig trees located within the proposed quarry area.

Eight part tests of significance concluded that the proposal was unlikely to have a significant impact on threatened species.

Mitigation Measures

The Applicant has indicated that it would:

- Preserve vegetated areas in the southern portion of the site;
- Fence and revegetate the cleared area in the southern portion of the site;
- Gather propagation material from on-site vegetation required to be cleared, for use in revegetation;
- Conduct weed control and revegetation monitoring during the quarry operation; and
- Manage and monitor water release from the site to maintain downstream vegetation communities.

6.6.2 Issues Raised in Submissions

The Department received 8 submissions on the potential flora and fauna impacts of the proposal: 7 from the general public and 1 from DEC (NPWS).

Issues raised include:

- Quarrying operations (noise) would affect wildlife;
- Loss of habitat; and
- Weed spread.

The DEC (NPWS) raised the following issues:

- Inconsistency between the EIS and LES in relation to the footprint of the extraction area and revegetation area;
- In addition to the aforementioned threatened species, the potential impact on listed plant species, *Solanum celatum*;
- Lack of information on size and condition of rainforest remnants (Illawarra Subtropical Rainforest) to be cleared;
- Indirect impacts associated with hydrological change (watertable drawdown); and
- Impact on *Daphnandra sp.C* Illawarra.

The DEC (NPWS) recommended a number of conditions of consent, including:

- Consider granting staged consent, with consent based in part on demonstration that hydrological changes are not affecting downslope vegetation;
- Appropriate hydrological monitoring (groundwater and surface water);
- Appropriate vegetation monitoring and reporting;
- Development footprint to reflect the footprint in the LES;
- Establishment of appropriate EMP, including a Vegetation Management Plan; and
- Establishment of site rehabilitation plan.

6.6.3 Additional Information Requested

The Applicant provided further information to the Department with regard to the issues raised by the DEC (NPWS).

Vegetation Buffer Zone

With regard to the inconsistency in footprint between the EIS and LES, Council, in its determination of the rezoning application, resolved to rezone the more conservative boundary as depicted in the LES, plus an additional buffer of 20m – hence, a total nominal buffer zone between the quarry and the existing vegetation of some 30-40m.

Impact on *Solanum celatum* and *Daphandra sp C.* Illawarra

An additional field survey for *Solanum celatum* and *Daphandra sp.C.* Illawarra was undertaken by Kevin Mills and Associates Pty Ltd.

The survey identified four species of *Solanum*, but no *S.celatum*. The report concludes that it is unlikely that *S.celatum* occurs on the site.

With regard to *Daphandra sp.C.* Illawarra, the addendum report concludes that the existing populations are unlikely to be affected by hydrological changes associated with the proposed quarry, based on its location with respect to the quarry.

Illawarra Subtropical Rainforest

The Applicant provided additional detail on the rainforest remnants to be removed, and reported that the ratio of rainforest revegetation area to clearing area is at least 4 to 1 (and more when the additional buffer zone, as described above, is included).

Impacts Associated with Hydrological Changes

Further information was supplied with regard to potential hydrological impacts – refer to Section 6.8 for detail. Kevin Mills and Associates Pty Ltd report that observations over many years of hard rock quarries in the Illawarra indicate that [hard rock] quarrying above vegetation has no obvious effect on the vegetation as a consequence of modification of the groundwater or stream flow.

6.6.4 Consideration of Key Issues and Conclusion

The Department is satisfied that the Applicant has demonstrated that the proposal can be conducted without significant impact on the flora and fauna of the area, including impact on threatened species.

The Department does not support the DEC's (NPWS's) recommendation to grant a staged consent as it is considered that any ongoing impacts can be identified and mitigated through vegetation and hydrological monitoring, reporting and corrective action requirements on the development.

However, the Department considers the Applicant should be required to:

- Fence, revegetate and maintain the revegetation area including the 'buffer area' as determined in *Shellharbour LEP 2000 – Amendment 4* (and *Shellharbour Rural LEP 2004 – Amendment 1*);
- Prepare a Vegetation Clearing Protocol for the development;
- Prepare and implement a Vegetation Management Plan for the development, including provisions/plans for revegetation management, weed control and vegetation monitoring.
- Prepare and implement a Water Management Plan that includes protocols for the management of water releases from the quarry and provisions for the monitoring and response to any impacts on the downslope vegetation communities caused by quarrying operations; and
- Prepare and progressively implement a rehabilitation plan for the development.

6.7 ABORIGINAL HERITAGE

6.7.1 Aboriginal Archaeological Investigations

Aboriginal archaeological investigations of the site have been undertaken by Robert Paton Archaeological Studies Pty Ltd (1998) and Mary Dallas Consulting Archaeologists (2001).

The investigations, with field surveys undertaken with representatives of the Illawarra Local Aboriginal Land Council (and Wodi Wodi Tribal Elders Corporation), failed to identify any Aboriginal sites.

The latter study (ie. the Dallas study) recommended that no further archaeological survey is required. Letters from the Illawarra Local Aboriginal Land Council and Wodi Wodi Tribal Elders Corporation attached to the report support this recommendation.

6.7.2 Issues Raised in Submissions

The Department received no submissions on the potential Aboriginal heritage impacts of the proposal, apart from a generic statement from DEC (NPWS) stating the notification requirements under the *National Parks and Wildlife Act, 1974* in relation to the discovery of Aboriginal sites.

6.7.3 Consideration of Key Issues and Conclusion

The Department is satisfied that the proposal is unlikely to have any significant Aboriginal heritage impacts.

Nevertheless, the Department considers the Applicant should be required to include, within its EMS, measures for the management and notification of Aboriginal sites, in the event of their discovery.

6.8 NON-ABORIGINAL HERITAGE

6.8.1 Heritage Impact Assessment

A Heritage Impact Assessment for the proposal was undertaken by Dr Iain Stuart of HLA-Envirosciences Pty Ltd.

The assessment identified 5 items of heritage significance in the vicinity of the proposal, as presented in the following table.

| Item | Significance | Description | To be removed by proposal? |
|---------------------------|--|--|----------------------------|
| 'The Hill' farm (c.1860s) | High / Listed item of State significance | Located directly to the north of the site. The homestead is located about 450m north east of the proposed quarry | No |
| 'Belmont' farm (c.1910s) | Moderate | Located within the allotment directly to east of the proposed quarry. Owned by Applicant | No |
| 'Kyawana' farm (c.1910s) | Moderate | Located within the alignment of the proposed haul road. In 'derelict' condition. | Yes |
| Dry stone walls (c.1910s) | Moderate | Located within the proposed quarry. | Yes |
| Fences and dams (c.1910s) | Little | Located within the proposed quarry. | Yes |

Table 4: Items of Heritage Significance

'The Hill' is listed as a heritage item in the *Illawarra REP No.1, 1986*, the *Shellharbour LEP, 2000*, and is also listed on the Register of the National Trust.

Mitigation Measures

The Applicant has indicated that it would:

- Record and archive evidence of farming activity within the proposed quarry area, including the dry stone walls and fences;
- Make an archival recording of 'Kyawana' and associated structures;
- Undertake precondition surveys of 'The Hill' and 'Belmont' properties; and
- Engage a landscape architect to design screen plantings having regard to the cultural landscape of Wentworth Hills, and to maintain the plantings.

6.8.2 Issues Raised in Submissions

The Department received 2 submissions on the potential heritage impacts of the proposal: 1 from the general public and 1 from NSW Heritage Office.

The private submission was concerned about impacts of the development on heritage values of 'The Hill' and the regional area.

The Heritage Office requested consideration be given to modifying the proposal to preserve items classified as having 'moderate' significance, namely the 'Kyawana' homestead and dry stone wall 'A'. The Heritage Office also expressed concern over blasting impacts on 'Belmont'.

6.8.3 Additional Information Requested

The Applicant provided further information in relation to the issues raised by the Heritage Office. The Applicant argued that the preservation of 'Kyawana' and dry stone wall 'A' was not practicable.

6.8.4 Consideration of Key Issues and Conclusion

The Department is satisfied that the proposal is able to be conducted such that key heritage items and their setting (namely, 'The Hill') can be conserved and maintained, and that other items of heritage significance can be appropriately managed to preserve and/or record their heritage values.

Shellharbour City Council has forwarded a number of proposed conditions with respect to heritage management. The proposed conditions (abridged), and the Department's consideration of each, is presented below (It is noted that Shellharbour City Council has reviewed and has no objection to the Department's position):

- *Commission an independent heritage assessment of 'The Hill' farm complex, including its extended curtilage within the Wentworth Hills* – The Department is satisfied that the Applicant has appropriately assessed heritage impacts on 'The Hill' and its setting in the EIS, and believes that the proposed management measures for blasting, visual amenity and rehabilitation would conserve the heritage values associated with 'The Hill' and its setting within the Wentworth Hills. As such, the Department considers that there is not a clear enough nexus between the impact of the development and the heritage values of the area to warrant this condition;
- *Commission an independent dilapidation survey of 'The Hill', and develop an appropriate conservation strategy prior to works commencing* – The Department supports the requirement for an independent dilapidation survey, but can not support the requirement for a conservation strategy, for the same reasons as discussed above (ie. lack of nexus).
- *Obtain permits under the Heritage Act prior to disturbance of any relic* – Supported (legislative requirement);
- *Salvage and reconstruct the dry stone walls affected by the proposal, in accordance with a conservation and Interpretation Strategy* – Supported, as there is a clear nexus between the proposal and its impact on the dry stone walls;
- *Conserve, protect and maintain the dry stone wall on the eastern boundary of the allotment* – Supported;
- *Undertake archival recording of 'Kyawana', 'Belmont' the dry stone walls and other heritage elements affected by the proposal* – Supported;
- *Commission a heritage assessment of Kyawana, and if practical, relocate the structure to its original location (the building was moved to its current location) and interpret the building* – The Department is satisfied that the Applicant has appropriately assessed the heritage values associated with 'Kyawana' in the EIS, and as such can not support an additional heritage assessment of the property, or the requirement for the Applicant to relocate the structure. However, the Department believes the Applicant should be required to provide Council the opportunity to relocate the structure or any of its components;
- *Conduct regular independent dilapidation surveys of 'The Hill' homestead (every 6 months), and repair any identified impacts* – The Department is satisfied the Applicant has demonstrated that the proposal can be managed such that it is unlikely to have any significant impact (through blasting) on 'The Hill'. The Department has recommended conditions requiring the Applicant to prepare Blast Management Plans (see Section 6.3), including a requirement to mitigate, remediate or compensate for any blasting impacts of the development on 'The Hill';
- *Prepare an Interpretation Plan for the Wentworth Hills cultural landscape* – The Department believes that the Applicant has provided for the mitigation of impact on the Wentworth Hills cultural landscape (through visual amenity mitigation measures), but considers that the Applicant should be required to prepare a Landscape Plan for the development having regard to the Wentworth Hills cultural landscape, and to prepare the plan in consultation with Council.

In summary, the Department believes the Applicant should be required to:

- Commission an independent dilapidation survey of 'The Hill' (with the owner's consent) and 'Belmont' buildings prior to commencement of works;
- Undertake archival recording of 'Kyawana', 'Belmont' the dry stone walls and other heritage elements affected by the proposal, in consultation with Shellharbour City Council;
- Salvage and reconstruct the dry stone walls affected by the proposal, in accordance with a conservation and interpretation strategy prepared in consultation with Shellharbour City Council;
- Conserve, protect and maintain the dry stone wall on the eastern boundary of the allotment;
- Obtain permits under the Heritage Act prior to disturbance of any relic;
- Engage a landscape architect with heritage experience to prepare a Landscape Plan for the proposed noise/visual bunds and plantings, having regard to the Wentworth Hills cultural landscape.

6.9 VISUAL IMPACTS

6.9.1 Visual Impact Assessment

A visual impact assessment is included within the EIS, undertaken by Perram & Partners.

The assessment included an investigation of all potential viewing directions and concludes that the proposal would have a low visual impact. The quarry would not be visible from residential areas to the north, east and west (including Shellharbour and Albion Park).

Mitigation Measures

The Applicant has indicated that it would:

- Construct and maintain vegetated sight bunds; and
- Review the effectiveness of the sight bunds during operations, and amend if necessary.

6.9.2 Issues Raised in Submissions

The Department received 8 private submissions on the potential visual impacts of the proposal, with issues raised including:

- Impact on the historic rural landscape;
- Impact on the existing scenic beauty of the landscape; and
- Inappropriateness of the proposed sight bunds.

6.9.3 Consideration of Key Issues and Conclusion

The Department is satisfied that the proposal would not have a significant impact on the visual amenity of the locality.

However, the Department believes the Applicant should be required to:

- Construct and maintain the sight bunds as proposed in the EIS; and
- Following construction of the bunds, undertake a review of their effectiveness with Shellharbour City Council, and undertake any improvements as required.

6.10 HAZARDS

6.10.1 Hazard Management

Measures proposed by the Applicant to manage hazards associated with the proposal include:

- Erection of a 2m high security fence around the quarry's perimeter;
- Blast warning alarms;
- Hazardous substances (including explosives and fuels) would not be stored on the quarry site;
- Maintenance of appropriate fire fighting equipment.

6.10.2 Issues Raised in Submissions

One private submission raised concerns about the possibility of 'fly-rock' from blasting being a risk to off-site persons and cattle.

6.10.3 Consideration of Key Issues and Conclusion

The Department is satisfied that the hazards and risks of the proposal can be adequately managed, through extant DPI (DMR) and WorkCover regulations. With regard to potential blast impacts (eg.flyrock) to adjoining properties, the Department believes the Applicant should be required to develop appropriate Blast management Plans in consultation with landowners.

6.11 OTHER ISSUES

Other issues raised in the EIS, by government agencies or by way of public submission are considered to be minor issues, components of key issues or of minor environmental impact.

7. SECTION 79C CONSIDERATIONS

Section 79C of the *EP&A Act* sets out the matters that a consent authority must take into consideration when it determines a DA.

The Department has assessed the proposal against these matters, and is satisfied that:

- The proposal is generally consistent with the provisions of the relevant planning instruments;
- The potential impacts of the proposal can either be mitigated or managed; and
- The proposal is generally in the public interest.

8. RECOMMENDED CONDITIONS OF CONSENT

The Department has prepared recommended Conditions of Consent for the proposal.

These conditions are required to:

- Prevent, minimise and/or offset adverse environmental impacts;
- Set standards and performance measures for acceptable environmental performance;
- Require regular monitoring and reporting; and
- Provide for the ongoing environmental management of the development.

The Applicant does not object to these recommended conditions.

9. CONCLUSION

The proposal would provide positive social and economic benefits to the people of the Illawarra region of NSW.

The proposal would present some adverse environmental impacts, however the Department is satisfied that these impacts can be mitigated, managed, or at least minimised to comply with relevant environmental criteria and standards.

The Department has assessed the EIS, the various submissions on the proposal, and the additional information provided, and recommends that the Minister approve the DAs subject to conditions, including the staged development consent for the quarry extension DA.

10. RECOMMENDATION

It is RECOMMENDED that the Minister:

- Consider the findings and recommendations of this report;
- Approve the DAs under Section 80 of the *EP&A Act*, subject to the conditions set out in the attached instruments of consent; and
- Sign the attached instruments of consent.

(Note: The Minister must make *Shellharbour Rural Local Environmental Plan 2004 (Amendment No.1)* before determining the subject development applications).

David Kitto
Manager
Mining and Extractive Industries

Sam Haddad
A/Director-General

APPENDIX A

ENVIRONMENTAL PLANNING INSTRUMENTS CONSIDERATION

A.1 State Environmental Planning Policy (SEPP) No.11 – Traffic Generating Development

The proposal is affected by the provisions of SEPP 11, as an 'extractive industry or mining' (Schedule 1(m)). As such, the application was referred to the RTA, who subsequently confirmed that it had no objection in principle to the proposal, and offered a number of comments for the Minister's consideration (see Section 6.5).

A.2 Illawarra Regional Environmental Plan (REP) No.1, 1986

The land subject to the development applications is affected by Illawarra REP No.1 – relevant provisions are discussed below.

Part II of the REP contains provisions relating to Rural Lands. Clause 14(5) relates to land supporting rainforest vegetation and requires a consent authority to consult with NPWS and be satisfied that the clearing or tree removal will not have any detrimental effect on the rainforest or rainforest species, or any detrimental effect can be justified by other factors. The Department has consulted with NPWS, and is satisfied that the proposal's detrimental effects on rainforest species would be mitigated through the implementation of recommended revegetation and other conditions (see Section 6.6).

Part III of the REP contains provisions relating to Extractive Materials. The objectives relating to extractive materials are (Cl.32):

- (a) *to manage the extractive resources of the region in a co-ordinated manner so as to meet community needs while ensuring that adverse impact on the environment and the community is minimal,*
- (b) *to ensure that development proposals for land containing extractive resources are assessed in relation to the potential problem of rendering those resources unavailable, and*
- (c) *to ensure that the transportation of extractive materials has a minimal adverse impact on the community and that the transportation of large volumes of extractive materials shall by-pass urban areas where possible.*

The Department is satisfied that the proposal is consistent with the objectives of Part III.

Clause 35 requires that, when practicable, the consent authority should consider attaching to appropriate development consents a condition requiring the transport of extractive materials or other bulk freight by other than road haulage. The Department is satisfied the Applicant has demonstrated that haulage other than by road is not practical.

Part XV of the REP contains provisions relating to Heritage. 'The Hill' is listed as a heritage item under Schedule 1 of the REP. Clause 128 requires that a consent authority shall not consent to the carrying out of development in the vicinity of an item of the environmental heritage unless it has made an assessment of the effect which the carrying out of that development would have on the historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance of the item of the environmental heritage and its setting. An assessment of the heritage aspects of the proposal is given in sections 6.7 of 6.8 of this report.

The proposal is considered to be consistent with the provisions of the REP.

A.3 Shellharbour Local Environmental Plan (LEP) 2000

The majority of the land subject to the development applications is currently zoned 7(d) – Environmental Protection (Scenic) under the Shellharbour LEP 2000 (nb. the western portion of the proposed haul road is zoned 4(c) – Extractive Industrial).

The proposal is prohibited under the 7(d) zone. As discussed in Section 4.1.4, the Applicant has submitted an application to rezone the subject land to zone 4(c), and Council has resolved to support the rezoning.

Under the 4(c) zoning, development for the purpose of 'extractive industries' is permissible with consent. The objective for the 4(c) zone is to 'identify those areas specifically allocated for extractive purposes'. The proposal is considered to be consistent with this zone objective.

'The Hill' (Part Lot 5, DP 3709) is listed as a heritage item under Schedule 3 of the LEP. Clause 75 of the LEP refers to development in the vicinity of a heritage item and requires a consent authority to consider the likely effect of the proposal on the heritage significance of 'The Hill' and its setting. Consideration of this issue is provided in Section 6.8.

The proposal is considered to be consistent with the provisions of the LEP.

A.4 Draft Shellharbour Rural LEP 2004

The majority of the land subject to the development applications is currently zoned Rural Landscape 1(rl) under the Draft Shellharbour Rural LEP 2004 (nb. the western portion of the proposed haul road is zoned Extractive Industry 1(x)).

As discussed in Section 4.1.4, Council has resolved to support an application to rezone the subject land to Extractive Industry 1(x) under the draft LEP, which would make the proposal permissible with consent.

Clause 10(4) of the draft LEP requires a consent authority to consider the sustainable development goals of the LEP before granting consent for the development of rural zoned lands. The goals relate to a number of matters including:

- agriculture;
- biodiversity;
- wildlife habitats;
- cultural heritage;
- settlement;
- mineral extraction
- rural development;
- tourism; and
- community consultation.

The Department has considered these goals and is satisfied that the development can be managed in a manner that is consistent with the goals.

Clause 32B sets out the aims and objectives for the Extractive Industry 1(x) zone. The aims and objectives, and reference to each item's consideration in this report, are outlined below:

| Provision | Reference in Assessment Report |
|---|--------------------------------|
| Aim | |
| To carefully manage the extraction of mineral resources in a manner which considers surrounding landuses and end use options of the altered landscape whilst minimising the environmental impacts of mineral extraction | s.6 |
| Primary Objective | |
| Ensure that the extraction of mineral resources and associated activities have a minimal impact on: | |
| (i) water quality of receiving streams | s.6.4 |
| (ii) ecological values of the land and surrounding land | s.6.6 |
| (iii) amenity of surrounding uses; and | s.6 |
| (iv) the visual landscape character | s.6.9, s.6.8 |
| Secondary Objectives | |
| Preserve and enhance the ecological integrity of the native vegetation | s.6.6 |
| Consider the impact on the amenity of adjoining land uses | s.6 |
| Coordinate site rehabilitation plans with the adjoining quarrying activities | s.6.4 |

The Department has considered these aims and objectives and is satisfied that the development can be managed in a manner that is consistent with the aims and objectives.

Clause 32C sets out the provisions related to extractive industry. The provisions, and reference to each item's consideration in this report, are outlined below:

| Provision | Reference in Assessment Report |
|--|--|
| The consent authority is to have regard to an Environmental Management and Site Rehabilitation Plan which addresses: | The Department is satisfied that the EIS provides the basis for an EMSRP in accordance with best practice measures |
| Best practice guidelines and other current methods for measuring and minimising all associated environmental impacts | s.6 |
| Social impacts including the amenity of nearby residents | s.6 |
| The visual impact on the landscape including the ability for the development to be seen from public places and nearby houses | s.6.9 |
| Noise, dust and airborne pollution | s.6.2, s.6.1 |
| Protection and enhancement of areas of native vegetation | s.6.6 |
| Seismic impacts on surrounding buildings | s.6.3 |
| Hydrology impacts and the implications on the water quality and flow rates in the catchment | s.6.4 |
| The desirability of ownership of the buffer area by the quarrying company within which environmental impacts are measurable and affect the amenity of any nearby residents | s.6 |
| Access for quarry vehicles and the environmental impacts associated with the transport of extractive materials | s.6.5 |
| Rehabilitation of the site and co-ordination with any proposed or approved site rehabilitation on adjoining land | s.6.4 |
| Staging and co-ordination of extraction to minimise environmental impacts and allow for the orderly rehabilitation of the site. | s.6 |

The Department has considered these provisions and is satisfied that the development can be managed in a manner that is consistent with the provisions.

The draft LEP also contains a number of other provisions which a consent authority must have regard for when considering a development application. Relevant provisions, and reference to each item's consideration in this report, are outlined below:

| Provision | Reference in Assessment Report |
|---|---------------------------------------|
| Cl.80. Development in the vicinity of a heritage item | s.6.8 |
| Cl.88. Areas of high conservation value | s.6.6 |
| Cl.89. Clearing of vegetation | s.6.6 |
| Cl.91. Watercourses | s.6.4 |
| Cl.100. Landscape management | s.6.9, s.6.8 |

The Department has considered these provisions and is satisfied that the development can be managed in a manner that is consistent with the provisions.