



Planning

**MAJOR PROJECT ASSESSMENT:  
East Guyong Quarry Project  
06\_0193**



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

December 2010

Cover Photograph: The East Guyong Quarry Project site – view to the northeast from the basalt ridge.

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## EXECUTIVE SUMMARY

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Hanson Construction Materials Pty Limited (Hanson) proposes to establish and operate a basalt quarry at East Guyong, approximately 22 kilometres west of Bathurst in the Central West region of New South Wales. Hanson proposes to extract up to 400,000 tonnes of basalt a year from the quarry over a 30-year period, for use in local and regional construction projects.

The proposal is a 'major project' under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), and consequently the Minister for Planning is the approval authority.

During the public exhibition of the project's Environmental Assessment (EA), the Department received five submissions from public authorities and 11 submissions from the community. Issues raised by public authorities related to noise and blasting impacts, flora and fauna, air quality, water management and traffic impacts. Community submissions raised similar concerns, but also highlighted the potential human health impacts which could result from the potential disturbance of naturally-occurring asbestos minerals during construction of Hanson's processing infrastructure and water supply dam.

The Department has assessed the project application, EA, submissions received during exhibition of the EA and Hanson's Response to Submissions and Preferred Project Report, in accordance with the objects of the EP&A Act.

The key issues considered in the Department's assessment were: managing the risks associated with the potential disturbance of asbestos minerals, potential noise and blasting impacts, site water requirements, traffic management and rehabilitation.

The Department recognises that exposure to asbestos can lead to serious human health impacts. The potential disturbance of asbestos minerals was the focus of the Department's assessment of the project. In recognition of the serious nature of the issue and the considerable community concern regarding exposure to asbestos, Hanson offered to relocate its proposed infrastructure and dam to avoid disturbing asbestos minerals. The Department believes the proposed relocation would avoid disturbing asbestos minerals, however the Department also considers a precautionary management approach should be applied to the project. Therefore, the Department's recommended conditions require Hanson to assess and map the entire site for asbestos minerals to make sure it is not disturbed during construction activities, and continuing to manage and monitor the risk of exposure during operation. The Department's recommended conditions include the implementation of an Asbestos Management Plan, with a comprehensive asbestos exposure air quality monitoring program, to ensure the health of workers and neighbouring residents is protected throughout the project.

None of the project's other environmental impacts, including noise, air quality and blasting impacts, are predicted to be significant. Hanson's proposed road works would ensure quarry traffic would not affect the safety or performance of the Mitchell Highway. The site would be appropriately rehabilitated.

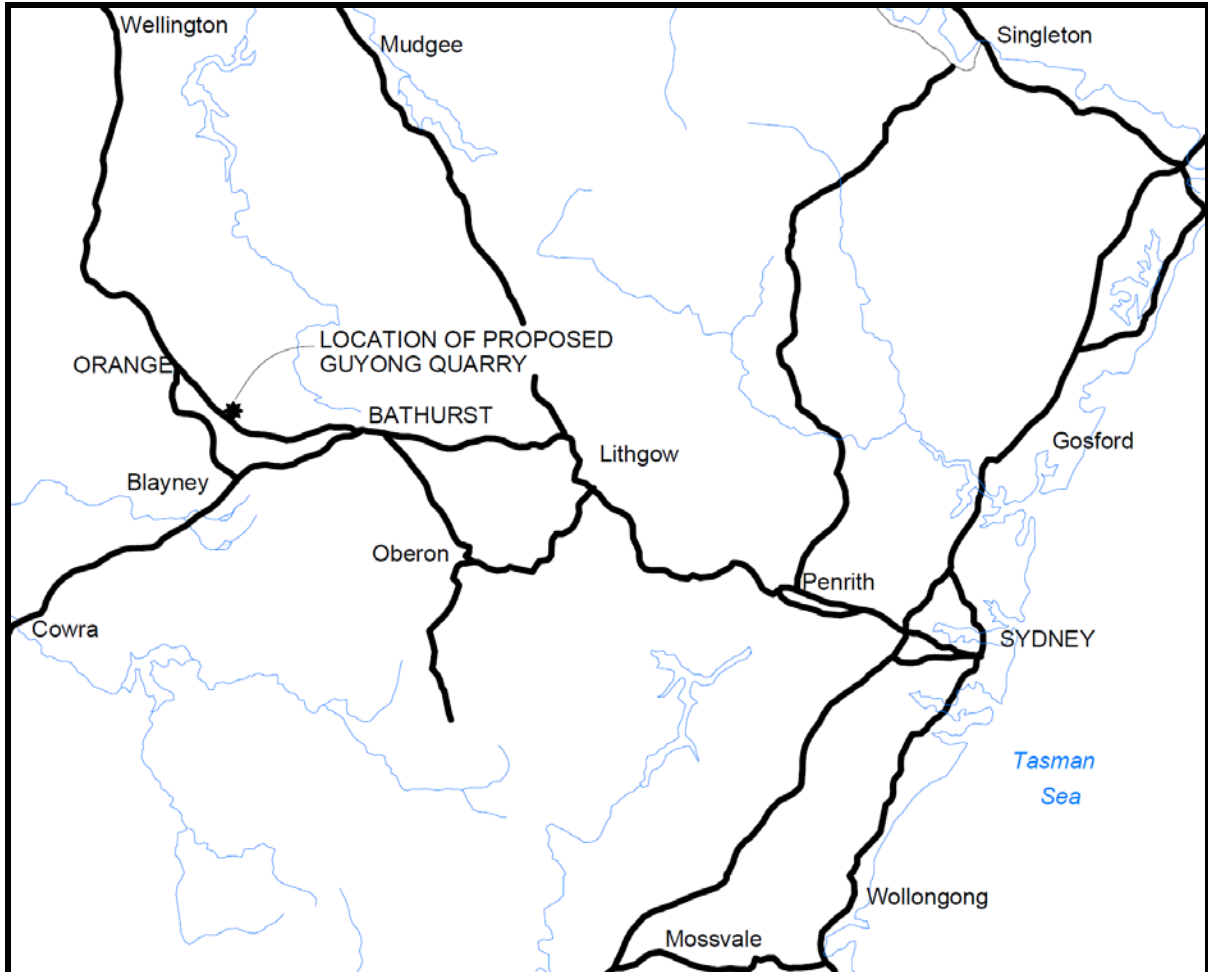
The project would generate social and economic benefits for NSW, including employment of up to 20 permanent operational staff and up to 15 contracted truck drivers. Other benefits would include the long-term social and economic benefits resulting from use of the basalt resource in construction projects.

The Department is satisfied that the project's impacts can be effectively mitigated and managed to ensure an acceptable level of environmental performance. The Department recommends that the project be approved, subject to strict conditions, which address extraction and processing operations, on-going environmental monitoring and management, rehabilitation, compliance mechanisms, community consultation, independent reviews and performance audits.

# 1. PROPOSED PROJECT

## 1.1 Project Background and Description

Hanson Construction Materials Pty Limited (Hanson) proposes to establish and operate the East Guyong Quarry Project, a new basalt quarry at East Guyong, located approximately 22 kilometres (km) west of Bathurst in the central west of NSW (see Figure 1).



**Figure 1:** East Guyong Quarry - local and regional context

The East Guyong site contains a high quality source of basalt, which would satisfy future construction demand for aggregate material in the Orange and Bathurst regions. The proposed quarry would replace Hanson's Bathurst quarry, which is due to close in 2011.

The proposal involves quarrying a 30 metre (m) high ridge of fine-grained basalt in the western half of the site. Up to 400,000 tonnes of basalt a year would be extracted and processed at the site, which has an estimated total resource of 15 million tonnes.

The proposed quarry would be developed in seven stages, with Stage 1 involving site establishment works and development of the quarry pit (see Figure 2). Stages 2-7 would extend the quarry pit in both northerly and southerly directions. All extracted material would be processed and stockpiled on site. All quarry product would be transported by truck to markets via the Mitchell Highway.

The key components of the project are summarised in Table 1 and depicted in Figure 2. The proposal is fully described in the Environmental Assessment (EA) in Appendix F.

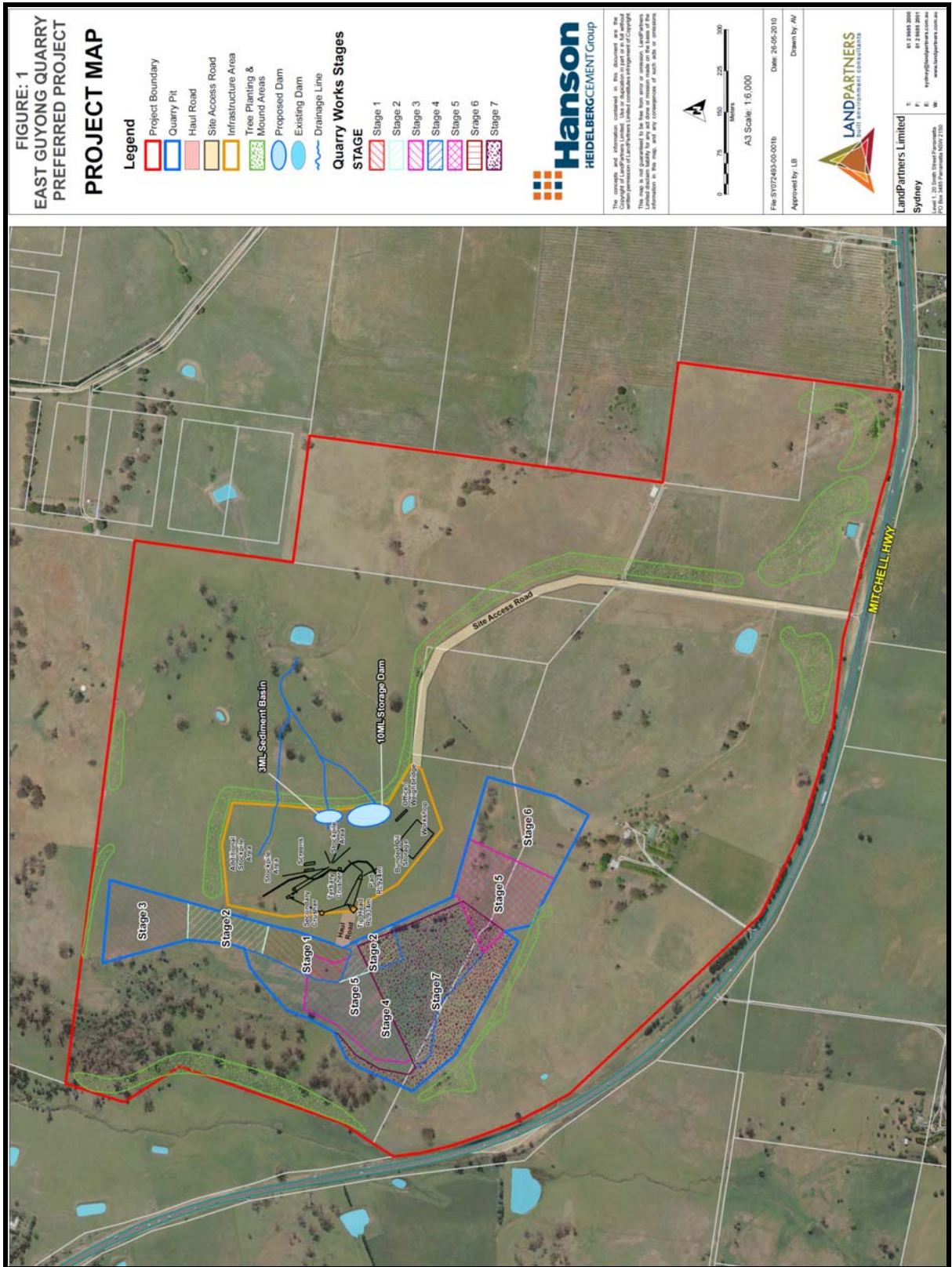


Figure 2: Project stages and site infrastructure

**Table 1: Key components of the East Guyong Quarry Project**

<b>Aspect</b>	<b>Description</b>
<b>Project Summary</b>	<ul style="list-style-type: none"> <li>• Establishment and operation of a hard rock quarry, to extract, process and transport up to 400,000 tonnes per annum of basalt quarry products; and</li> <li>• Rehabilitating the site.</li> </ul>
<i>Project Life</i>	An expected project life of up to 30 years.
<i>Material Processing</i>	All extracted material would be processed on site using "dry" processing methods and stockpiled on site.
<i>Water Management</i>	Water for on-site operations would be supplied from a new 12 megalitre (ML) capacity dam. Run-off captured in the quarry pit would be pumped to the dam for re-use. Run-off from the infrastructure area would be diverted to a 3 ML capacity sediment dam.
<i>Transport</i>	All quarry products would be transported by road to local and regional markets, using the Mitchell Highway.
<i>Employment</i>	The project would employ up to 20 workers at the quarry, and up to 15 contracted truck drivers.
<i>Hours of Operation</i>	Operations would take place generally during daylight hours Monday to Friday and from 7 am to 1 pm on Saturdays. No operations would occur on Sundays or Public Holidays.
<i>Rehabilitation and Final Landform</i>	Rehabilitation would be undertaken progressively. Hanson would rehabilitate the site to its pre-quarrying land capability, to create a stable, self-draining landscape with a mix of pasture and treed areas suitable as general habitat and for grazing.
<i>CIV</i>	The capital investment value of the project is \$5 million.

## 1.2 Amendments to the Project

During the exhibition of the EA, local community members and Council raised concerns over Hanson's proposal to locate its infrastructure area in an area of the site which contains tremolite, a naturally-occurring asbestos mineral which is common in the region. In response to these concerns, Hanson committed to relocating its infrastructure to an area of the site where this asbestos mineral is known to occur only at depths greater than 5 metres (m). This amendment is described in Hanson's Preferred Project Report, which is attached in Appendix D.

## 1.3 Project Setting

The proposed quarry site is located in a rural area at East Guyong, 22 km west of Bathurst and 20 km southeast of Orange (see Figure 1). The site is bordered by agricultural (grazing) properties to its north, east and west, and by the Mitchell Highway to the south. Nine residences surround the site (see Figure 3), with the closest residence located approximately 150 m from the site's northern boundary.

## 1.4 Project Need and Justification

Aggregate products are required to produce building materials for residential development, the construction industry and the development of roads. One hard rock quarry is currently in operation in the region, at Molong. The proposed East Guyong Quarry would replace the existing Hanson quarry at Bathurst, ensuring that a competitive market would be available for the supply of aggregate products in the Bathurst and Orange regions.

The product from East Guyong would be suitable for a variety of uses, such as construction fill or road base materials. The regional demand for these quarry products is expected to increase as the population expands and as associated infrastructure upgrades are implemented. This project would contribute to resource security for the regional construction industry at low transport cost.

The project would generate social and economic benefits for NSW, including employment of up to 20 permanent operational staff and up to 15 contracted truck drivers. Other benefits of the project would include the long-term social and economic benefits which would result from use of the resource in construction projects.

The project addresses State Plan priorities P1 (increased business investment) and P6 (increased business investment in rural and regional NSW), as it would attract \$5 million worth of capital investment in the region and create up to 35 jobs for up to 30 years.

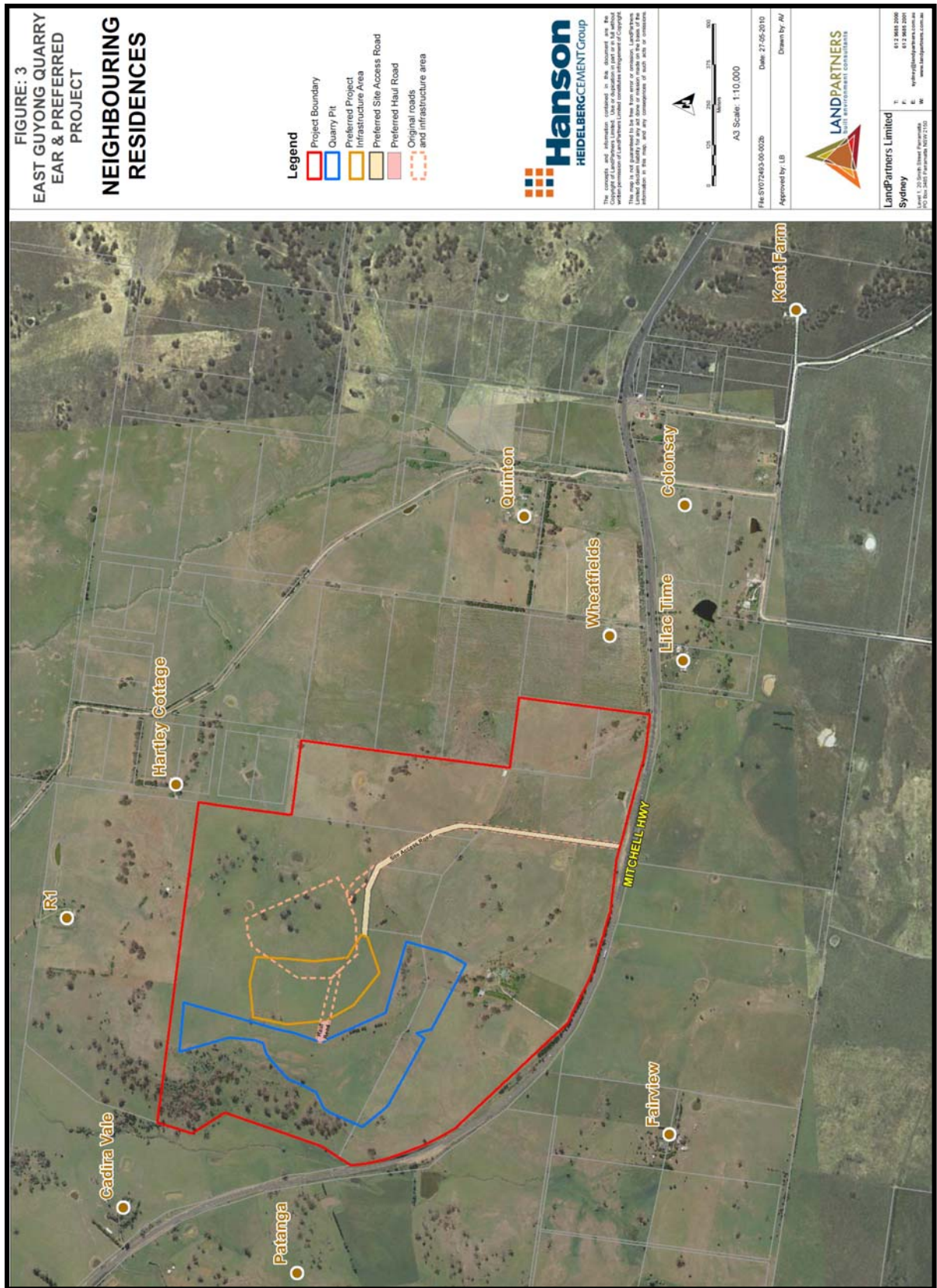


Figure 3: Neighbouring residences

## 2. STATUTORY CONTEXT

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### 2.1 Major Project

The proposal is classified as a major project under Part 3A of the *Environmental Planning & Assessment Act 1979* (EP&A Act), as it is development for the purpose of extractive industry and meets the criteria in clause 7 of schedule 1 of *State Environmental Planning Policy (Major Development) 2005*. The Minister for Planning is therefore the approval authority for the project. However, the Deputy Director-General, Development Assessment and Systems Performance, may determine the project under the Minister's delegation of 25 January 2010.

### 2.2 Permissibility

The proposal is located in the Cabonne Shire LGA and the project site is zoned 1(a) (General Rural) under the *Cabonne Local Environmental Plan 1991*. This zone permits extractive industries and their associated surface activities with development consent.

### 2.3 Other 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 under the *Heritage Act 1977* and *National Parks and Wildlife Act 1974*; and
- particular water-related approvals under the *Water Management Act 2000*.

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

- an environment protection licence under the *Protection of the Environment Operations Act 1997*; and
- a permit or approval under the *Roads Act 1993*.

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

### 2.4 Exhibition

Under Section 75H(3) of the EP&A Act, the Director-General is required to make the EA of a project publicly available for at least 30 days. To satisfy this requirement, the Department made the EA publicly available from 12 October until 11 November 2009:

- on its website and at its Information Centre; and
- at the offices of Cabonne Shire Council, Orange City Council and the Nature Conservation Council.

The Department also notified relevant State and local government authorities by letter, and advertised the public exhibition in the *Central West Daily* on 10 October 2009 and the *Midstate Observer* on 15 October 2009.

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

The Minister is required to consider the objects of the EP&A Act when making decisions under the Act. The objects of most relevance to the Minister's decision on whether or not to approve the project are found in Section 5(a)(i), (ii), (vi) & (vii). They 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 the land (Object 5(a)(ii)), particularly as the subject basalt resource is located adjacent to the Mitchell Highway, which gives Hanson access to an established transport route.

Consideration of environmental protection (Object 5(a)(vi)) is undertaken in Section 4 of this report. Following this consideration, and based on Hanson's proposed tree planting and rehabilitation program, the Department is satisfied that the project is able to be undertaken in a manner that would maintain and potentially improve biodiversity values of the locality in the medium to long-term.

The Department has considered the encouragement of ESD (Object 5(a)(vii)) in its assessment of the project application. This assessment integrates all significant economic and environmental considerations and seeks to avoid any serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences. Hanson has considered a number of alternatives to the proposed project (including the alternative of not proceeding) and considered the proposal in the light of the ESD principles (see Appendix F).

## 2.6 Environmental Planning Instruments

Under sections 75I(2)(d) and 75I(2)(e) of the EP&A Act respectively, the Director-General's Environmental Assessment Report is required to include a copy of, or reference to, the provisions of any:

- State Environmental Planning Policy (SEPP) that substantially governs the carrying out of the project; and
- environmental planning instrument (EPI) that would (except for the application of Part 3A) substantially govern the carrying out of the project and has been taken into consideration during the assessment of the project.

The Department has considered the proposal against the provisions of relevant SEPPs and other EPIs and is satisfied that none of these substantially govern (or would govern) the carrying out of this project (refer to Appendix C).

## 2.7 Statement of Compliance

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

# 3. ISSUES RAISED IN SUBMISSIONS

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During the exhibition period, the Department received 16 submissions, comprising five from public authorities and 11 from the general public. A summary of the issues raised in these submissions is provided in Section 3.1 below. Copies of the submissions received during the exhibition period are attached in Appendix E.

## 3.1 Public Authorities

**Department of Industry and Investment (I&I NSW)** supported the project, but recommended the provision of a 50 m buffer between quarrying operations and nearby Lewis Ponds Creek to protect fish habitat.

**Department of Environment Climate Change and Water (DECCW)** supported the project, and provided a set of recommended conditions of approval relating to noise emissions, blasting limits, air quality, Aboriginal cultural heritage and water quality. It also provided the following key recommendations:

- the hours of operation for the quarry should be restricted to standard construction hours;
- Hanson should prepare an Aboriginal Cultural Heritage Management Plan, a Construction Environmental Management Plan and a Stormwater Management Plan;
- biodiversity offsets should be provided for any vegetation clearing; and
- Hanson's statement of commitments should be revised to include greater detail on its proposed impact management actions.

**DECCW's NSW Office of Water (NOW)** highlighted the need for the project to be appropriately licenced for any interaction with groundwater. NOW also recommended conditions of approval requiring Hanson to:

- ensure sufficient water is available for all stages of the project; and
- prepare surface water and groundwater management plans, including impact monitoring programs.

**Roads & Traffic Authority (RTA)** did not object to the proposal. RTA recommended construction of a new intersection where the proposed access road to the site joins the Mitchell Highway, to ensure that traffic from the project would have a minimal impact on the performance and safety of the Highway.

**Cabonne Shire Council (Council)** objected to the project and raised the following concerns:

- the potential health risks associated with the disturbance of asbestos minerals;
- conflict with the potential for future residential and tourist development in the area;
- blasting would affect the operation of the Mitchell Highway;
- Hanson had not fully considered European heritage impacts, and ignored the importance of the local area as the site of Australia's first gold discovery;
- the rural amenity of the area would be affected; and
- the quarry would be visually intrusive to nearby residents and visitors to the area.

### 3.2 General Public

Eleven individuals objected to the project. Their concerns included that:

- the site contains asbestos minerals, which if disturbed, may impact on human health and livestock health;
- noise could impact on the rural amenity of the area;
- blasting could cause distress to livestock and structural damage to neighbouring heritage buildings, and would require the Mitchell Highway to be closed;
- dust could affect tank water and have an impact on agricultural production;
- vegetation clearing would impact habitat for migratory birds;
- nearby properties would be devalued;
- quarry trucks could impact on the safety of the Mitchell Highway;
- groundwater would be required to be extracted for operations during drought conditions, affecting the water supply of neighbouring landowners;
- the quarry and its product stockpile would be visually intrusive to local residents and travellers on the Mitchell Highway; and
- the approval for the project, if granted, should include conditions which require Hanson to purchase a neighbouring property at a price sufficient to enable relocation to a similar property in the district, due to amenity impacts and the impact on property value from the operation of the quarry on a site known to contain naturally-occurring asbestos.

## 4. ASSESSMENT

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The Department considers the key environmental issues for the project to be avoiding the disturbance of asbestos minerals within the quarry's proposed processing infrastructure area, noise and blasting impacts, water management, air quality, traffic and visual impacts, and site rehabilitation.

### 4.1 Naturally-occurring Asbestos Minerals

The project site contains outcrops of tremolite, an asbestos mineral which is known to occur in certain metamorphic rocks in the regional area. Neighbouring property-owners and Council highlighted in their submissions that constructing quarry infrastructure at the location originally proposed in the EA would carry with it the risk of disturbing this asbestos mineral. The Department recognises the associated

human health impacts, being that if asbestos minerals are disturbed, then asbestos fibres may be released to the atmosphere, and if these fibres are then inhaled, they may result in the long-term development of cancers or lung diseases such as mesothelioma. However, this risk can be eliminated if the asbestos remains in an undisturbed form and is not released into the atmosphere.

Recognising that this issue would require careful assessment, the Department first asked Hanson to investigate the extent of the asbestos mineralisation at the site. The Department also contacted and sought advice on this matter from Workcover NSW, I&I NSW and Orange City Council, due to its experience with the Narrambla Business Park where similar issues arose. Hanson undertook a "preliminary investigation", which mapped the site's asbestos risk profile (see Figure 4). This survey indicated that the risk of asbestos occurring at or near the surface within the proposed quarry pit area would be negligible, as this area consists of basalt rather than the metamorphic rocks to which the tremolite is confined. However, the investigation confirmed that tremolite would be highly likely to occur at or near the surface within the proposed infrastructure area, and particularly in the walls of an existing farm dam that Hanson proposed to expand and use to supply water for dust suppression and irrigation. Asbestos is also manifest in a number of surface rock outcrops in the proposed infrastructure area.

The Department subsequently asked Hanson to prepare an Asbestos Management Plan, to outline the actions it would undertake to limit the risk of disturbing asbestos minerals during construction. These proposed actions included:

- establishing exclusion zones around proposed earthworks;
- suppressing dust during earthworks;
- keeping the dam walls wet during the proposed expansion works;
- capping and covering any spoil with clean soil, or transporting contaminated spoil to an approved asbestos waste facility;
- undertaking strict and regular monitoring;
- implementing occupational health and safety measures, including protective equipment for workers, site induction programs and decontamination procedures; and
- developing contingency and emergency response planning procedures.

However, in recognition of the considerable community concern regarding the potential disturbance of asbestos, Hanson then decided to relocate its infrastructure area to another part of the site (see Figure 2) This new area was mapped in the preliminary investigation as containing no surface outcrops of asbestos minerals, and as having a risk of encountering asbestos minerals only at substantial depths. The Department considers Hanson's proposed new location for its infrastructure area represents a significant reduction in the risk of disturbing asbestos minerals during construction.

Hanson also proposed to install fencing around all surface asbestos outcrops, which the Department considers would remove the risk of disturbance at these sites. It is also important to consider that the project site is currently used for grazing. Therefore, with the removal of stock from the site and the installation of fencing around the asbestos surface outcrops, the Department is satisfied that the project would result in a lower risk of disturbing asbestos than is currently the case.

The Department notes that similar asbestos minerals were discovered during the development of the Narrambla Business Park in Orange. A precautionary management approach was applied to all earthworks at Narrambla, under strict procedures similar to Hanson's proposed Asbestos Management Plan. Regular monitoring of asbestos disturbance is also undertaken, using a criterion for measuring airborne asbestos (0.01 fibres/millilitre of air) which is recognised as being the lowest detectable limit for asbestos. The Department has accordingly recommended that this standard is applied to the proposed quarry as a condition of approval. The Department also considers that Hanson should implement a strict monitoring regime, and take daily measurements during construction of the infrastructure site. The Department has recommended that the asbestos monitoring program be developed and implemented as a condition of approval.

Notwithstanding that Hanson has proposed to relocate its infrastructure to an area which has a low risk profile for asbestos, the Department believes that a precautionary management approach should still be applied to all proposed construction works. The Department has therefore recommended conditions of approval which require Hanson to:

- undertake a more detailed investigation to confirm the extent of asbestos minerals across the project site, prior to commencing any construction works;

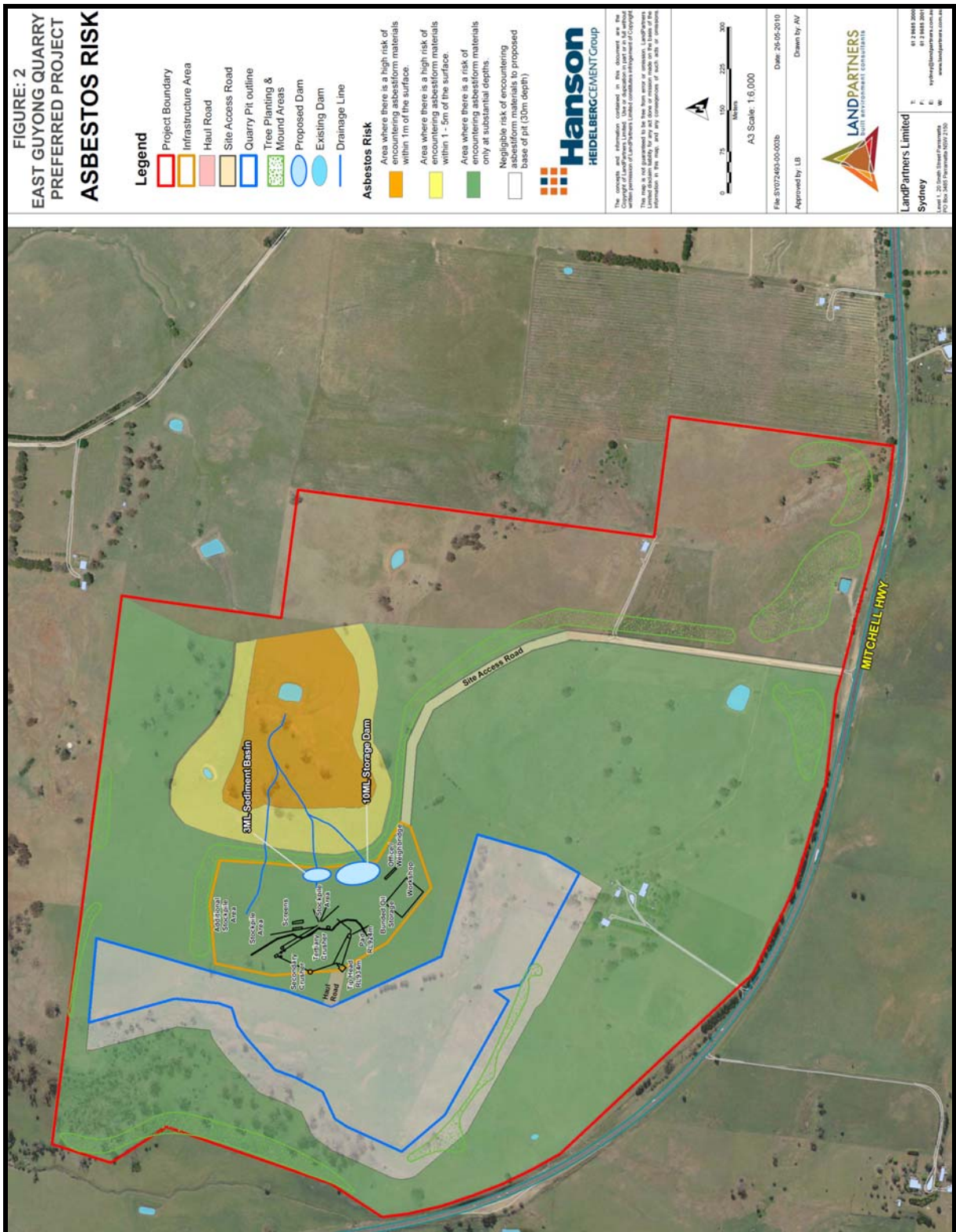


Figure 4: Asbestos risk profiles

- prepare a final Asbestos Management Plan for the Director-General's approval, taking into consideration the findings of the investigation;
- install fencing around any surface outcrops of asbestos minerals on site;
- develop a suitable airborne asbestos fibre monitoring program; and
- undertake community consultation during construction, including regular reporting of monitoring results to neighbouring landowners.

### Impact on Property Values

With the above measures in place, the Department considers that there should be no real impact on neighbouring property values. Even if property values are affected due to community perceptions about the presence of naturally-occurring asbestos, this would not be due to any increased risk of exposure as a result of the quarry. Indeed, the quarry's proposed asbestos management plan is likely to lead to an actual decrease in mobilisation of asbestos fibres from disturbance.

In addition, asbestos minerals are likely to occur on a number of other properties in the locality, and to have been visible for many generations (even if not recognised for what they are). Although it would appear that the project application (and that for the Business Park) were the vehicles for this knowledge to become more widely known, the quarry proposal would not be the cause of any known increase in risk of exposure.

The Department considers that the recommended conditions of approval would ensure the health and safety of all parties, including quarry workers and the quarry's immediate neighbours, and not cause any loss of property value. As the operations of the quarry are predicted to be within the relevant amenity impact criteria for noise, blasting and air quality, the Department does not consider that Hanson should be required to acquire any adjoining properties

## 4.2 Noise & Blasting

### Background Noise Levels

Hanson's noise impact assessment was undertaken in accordance with DECCW's *Industrial Noise Policy* (INP). Site-based noise sources were modelled under a range of meteorological conditions. The site's noise environment is characterised by its rural nature, with some influence from the Mitchell Highway. To calculate project specific noise levels (PSNLs), Hanson undertook background noise measurements representative of four properties surrounding the site (see Figure 3 for property locations). These background noise levels are shown in Table 2.

**Table 2: Background noise levels**

Location	Background noise levels dB(A) $L_{A90}(\text{period})$		
	Day	Evening	Night
"Hartley Cottage"	30	30	30
"Cadora Vale"	37	31	30
"Lilactime"	40	32	30
"Fairview"	32	31	30

### Hours of Operation

Hanson proposed to operate the project 24 hours a day. DECCW does not support this as it considers that night time noise emissions would cause unacceptable impacts at neighbouring residences. Instead, DECCW recommended that the project's operating hours should be restricted to standard construction hours (ie 7am – 6pm Monday to Friday, 8am – 1pm on Saturdays, with no operations on Sundays or Public Holidays).

The Department agrees with DECCW that 24 hour-per-day operations are not justified or appropriate. However, Hanson provided weighbridge records from its existing Bathurst quarry that demonstrate that it regularly dispatches loads from 6am in order to deliver quarry materials to work sites and concrete batching plants for commencement of work at 7am. As the East Guyong site is about 20 km from both Bathurst and Orange, the Department accepts Hanson's commercial need to provide dispatches from as early as 6am. The Department has therefore recommended hours of operation such that operations may commence at 6am, Monday to Friday, and continue from 6 pm until 8pm during the period of daylight saving; and commence at 7am on Saturdays.

In addition, if Hanson is able to negotiate agreements to this effect with each of the owners of the 7 most-affected residences, then the Department considers that dispatch of trucks from the site between the hours of 5am to 10pm would be appropriate. The Department has therefore recommended a condition of approval which provides that the company can extend its hours of dispatch up to or including 5am to 10pm, providing that each of its 7 most-affected neighbours first agrees. If not, then the hours of dispatch would remain as otherwise proposed.

### Impact Assessment Criteria

The INP advises that PSNLs for projects such as the East Guyong Quarry should be derived by adding 5 dB(A) to the background noise measurement. Hanson's noise modelling considered operating scenarios during Stages 1, 3 and 7 of the project. The EA predicts that operational noise would not exceed the PSNLs during any stage of the project under a range of meteorological conditions. However, it is the Department's policy in assessing noise impacts to limit operational noise levels to the **highest predicted** noise level which does not exceed the PSNL. Where the highest predicted noise level is below 35 dB(A), the Department adopts 35 dB(A) as the default impact assessment level. The resultant noise impact assessment criteria are shown in Table 3.

**Table 3: Recommended noise impact assessment criteria**

Location	Impact Assessment Criteria dB(A) $L_{Aeq}(15min)$		
	Day	Evening	Night
"Hartley Cottage"	35	35	35
"Cadora Vale"	35	35	35
"Lilactime"	35	35	35
"Fairview"	36	35	35

Hanson would also adopt the following noise management practices to maintain compliance with these noise impact assessment criteria:

- constructing noise bunds at the site's northern boundary, around the product stockpiles and at the northern shoulder of the site access road;
- sealing the site access road from the infrastructure area to the Mitchell Highway; and
- applying noise attenuation measures to all mobile equipment.

The noise generated by truck dispatch operations would also need to comply with the appropriate noise impact assessment criterion of 35 db(A). Although the Department's recommended noise impact assessment criteria include night-time noise criteria, these would only be applicable during the period from 6 to 7am (or from 5 am if that was the basis of agreement with the 7 most-affected neighbours).

Hanson also proposes to prepare a Noise Management Plan that would detail its proposed Noise Monitoring Program and identify any management actions that would assist the project to comply with the recommended impact assessment criteria. The Department has recommended a condition of approval to require Hanson to prepare and implement this plan.

### Traffic Noise

Hanson's traffic noise assessment considered the effect that its trucks would have on existing traffic noise levels on the Mitchell Highway. The project's traffic noise would not cause exceedences of DECCW's recommended traffic noise criteria at any stage of the project. Traffic noise impacts at nearby residences would also be limited by the proposed hours of project operation.

### Blasting and Vibration

Hanson's blasting assessment predicted that both airblast overpressure and ground vibration levels would not exceed relevant criteria at all residences near the quarry during any stage of the project. However, DECCW recommended that blasting be restricted to between 9 am and 3 pm Monday to Friday. The Department recommends a condition of approval limiting blasting to these hours, which would also ensure that blasting occurs outside of times that school buses use the Mitchell Highway.

Community submissions included concerns that blasting would result in structural damage to nearby heritage buildings. Hanson predicts that its blasting would comply with DECCW's blasting criteria, and is therefore unlikely to cause damage to buildings. The Department considers a precautionary approach should be applied to potential blasting impacts and has recommended a condition of approval which requires Hanson to undertake structural inspections of all buildings within 2 km of the project site, prior to commencement of blasting operations, and take appropriate action if its blasts cause structural damage to any building.

To ensure that blasting is effectively managed, the Department has also recommended conditions that require Hanson to:

- prepare and implement a Blast Management Plan;
- comply with recommended blast criteria;

- protect residents, travelers on the Mitchell Highway, livestock and public infrastructure from blasting impacts;
- keep local residents informed about blasting operations; and
- implement a comprehensive blast monitoring program to monitor ground vibration and airblast levels at the residences closest to the quarry, and report these results on a regular basis to the community.

#### Flyrock

Hanson also considered the possibility of its blasts causing flyrock incidents. Hanson would employ stringent flyrock management controls similar to those it currently uses at its Bathurst quarry and in accordance with the relevant Australian Standard (AS 2187.2). These controls include laser profiling blast faces and setting adequate blast exclusion zones. The Department is satisfied that, with these controls in place, flyrock incidents from the quarry would be avoided.

#### Conclusion

The Department is satisfied that the project's noise impacts would not be significant and that the quarry would be able to meet recommended noise limits throughout all stages of the project. The Department's recommended conditions of approval would ensure that strict monitoring of the project's noise emissions would be undertaken, whilst requiring Hanson to investigate ways to improve its noise performance. The Department is also satisfied that the project can be managed to avoid significant blast-related impacts for all built structures in the vicinity of the site.

### 4.3 Water Management

#### Surface Water

Hanson's proposed water management system would control the movement of water on-site. This system would involve constructing a 12 ML capacity dam to supply water for dust suppression and irrigation. Run-off captured in the quarry pit would be pumped to this dam, and run-off from the infrastructure area would be diverted to a 3 ML capacity sediment dam. The main storage dam would be constructed to handle the peak flow from a 20 year average recurrence interval storm, as prescribed by relevant standards. Appropriate bunding and drainage systems would also be installed to divert clean run-off away from the sediment dam.

Hanson modelled the water demand for representative stages of the project in dry, average and wet years. The water demand modelling results are shown in Table 4.

**Table 4: Water Demand**

Stage	Quarry pit area (ha)	Average demand (ML/Year)	% of time on-site supply would satisfy demand		
			Dry	Average	Wet
1	1.4	8.4	90%	99%	100%
4	10	9.6	92%	99%	100%
7	16.7	15.1	89%	96%	100%

Whilst the modelling results show that water demand would exceed supply in dry and average rainfall years, the Department notes that the model included a generous allowance for dust suppression and is therefore likely to have overestimated the project's actual water requirements. Hanson's assessment concluded that there would be only a small number of days in a dry year where there would be insufficient water available on-site to meet expected demand. Hanson would address any operational water supply shortfall by having water delivered to the site, and reducing the amount of water needed for dust suppression by bitumen sealing the quarry access road and/or using chemical binding agents on stockpiles.

The Department is satisfied that Hanson's proposed water management system would adequately control the movement of water on-site and that its proposed mitigation measures would ensure sufficient water is available for operations throughout each project stage. The Department is satisfied that any shortfall of water for dust suppression purposes can be compensated for by other available management measures.

The project would not impact on any watercourses, as the closest watercourse (Lewis Ponds Creek) is located 100 m west of the basalt ridge and proposed quarrying would not remove any of its catchment. I&I NSW requested that Hanson maintains a 50 m buffer between the quarry and the creek. As the

limit of the quarry pit stops short of the brow of the ridgeline, the Department is satisfied that an adequate buffer to the creek of at least 100 m would be maintained throughout the life of the project.

#### Groundwater

Hanson assessed the potential impacts on local groundwater resources. This assessment showed that the potential groundwater yield from the proposed quarry pit area would be low, due to the low permeability of the basalt and its ridgeline location. Hanson also undertook groundwater monitoring at five monitoring bores, which showed groundwater levels well below the proposed level of the quarry pit floor in four of these bores. The remaining bore, located on the western side of the ridge, recorded the groundwater level marginally above the proposed pit floor level and minor drawdown (0.6 m) is predicted at this location. However, the groundwater gradient at this location would be expected to fall west towards Lewis Ponds Creek and away from the quarry pit.

Any groundwater flow to the quarry pit from the intersection of fracture zones in the basalt would be expected to be low in volume and would only occur for a limited duration. The Department is satisfied that the project would not impact on neighbouring groundwater users, as yields in neighbouring groundwater bores are generally low, and the quarry is located on a ridgeline. The Department is satisfied that any impact on groundwater resources would be localised and minimal.

#### Conclusion

The Department is satisfied that Hanson has adequately assessed the project's potential surface water impacts and that these impacts would be minimised by the implementation of Hanson's proposed water management system. The Department is also satisfied that Hanson's proposed mitigation measures would address any potential shortfall in supply. The Department has recommended a number of conditions of approval to ensure that any residual water impacts would be satisfactorily managed and/or mitigated, including requirements for Hanson to:

- prepare and implement a detailed Site Water Management Plan;
- develop and implement a groundwater monitoring program;
- develop and implement management and mitigation measures to avoid and/or minimise adverse groundwater impacts based on monitoring results and validated model outcomes; and
- prepare a surface water and groundwater response plan, including contingency measures should unexpected impacts occur.

#### **4.4 Traffic**

Hanson's traffic assessment considered the potential impacts from the project's traffic movements. At full production, the project would generate up to 96 truck movements per day (48 laden trucks). Of these movements, 60% would be to/from the east (Bathurst and the Blue Mountains), 30% to/from the west (Orange) and 10% to/from the south (Blayney and Cowra). The traffic assessment concluded that these additional truck movements would represent only a minor increase to existing traffic levels and would not significantly impact on the operation and capacity of the Mitchell Highway.

Hanson is proposing to construct a new intersection to connect the project site with the Highway. This intersection would be constructed to RTA standards and include a channelised right-turn entry lane, tapered left turn acceleration and deceleration lanes and appropriate warning signage. The new intersection would allow westbound traffic on the Highway to safely pass trucks turning right into the site. It would also allow trucks travelling from the west to decelerate and trucks travelling to the east to accelerate without causing significant delays to other traffic.

As the area is known to be fog prone, the RTA recommended that Hanson consider further mitigation measures, including installing sight markers on the approaches to the site and placing restrictions on its transport operations during fog periods. Hanson has committed to installing sight markers and the Department has recommended this as a condition of approval.

Council and community members raised concerns that Hanson's trucks would compromise road safety and delay traffic on the Mitchell Highway. The Department has considered these submissions and is of the view that all significant risks of road safety impacts and traffic delays have been addressed by Hanson's proposals.

The Department has incorporated the RTA's recommendations for intersection construction and traffic safety within the recommended conditions and is satisfied that Hanson has adequately addressed the project's traffic impacts and road safety issues, and that any associated impacts would be minor. The

Department has recommended a condition of approval which requires the proposed intersection from the site to the Mitchell Highway to be constructed prior to the commencement of quarrying operations.

#### 4.5 Air Quality

Hanson's air quality assessment was undertaken in accordance with DECCW's *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*. The assessment was based on the use of the ISCMOD air dispersion model, which uses estimated emissions and local meteorological data to predict resultant dust concentration and deposition levels.

Table 5 provides a summary of the **maximum** predicted (background plus increment) air quality impacts at the closest residences to the quarry. In all cases, the relevant DECCW air quality criteria would be comfortably met. The Department considers the incremental increases in particulate concentrations and dust deposition rates are low, both in relative and absolute terms.

**Table 5: Air Quality Predictions**

Location	Air quality parameters (DECCW criteria)		
	Deposited Dust (4g/m <sup>2</sup> /month)	PM <sub>10</sub> Max 24-hour average (50 µg/m <sup>3</sup> )	PM <sub>10</sub> Annual average (30 µg/m <sup>3</sup> )
"Cadira Vale"	1.8	39	15
"Hartley Cottage"	2.1	44	16
"Quinton"	1.7	39	15
"Lilac Time"	1.7	42	15
"Fairview"	1.8	42	15
"R1"	1.8	40	15

The Department is satisfied that air quality impacts would not be significant at any stage of the project. Nevertheless, the Department has recommended conditions of approval that require Hanson to implement an air quality monitoring program to ensure that the predicted low levels of air quality impacts are achieved and maintained over the life of the project.

#### 4.6 Rehabilitation

Hanson proposes to progressively rehabilitate the site following the completion of each extraction stage. Rehabilitation activities would include creating stable landforms and planting vegetation to return the site to a mix of treed areas and grazing land. Rehabilitation would involve landform shaping to create landscapes that would blend with the surrounding topography, with slopes up to 1:2 at the western ridge. These landforms would be capped with topsoil and sown with a mixture of pasture and tree seed to create a self-draining landscape. Trees would also be planted on the footslopes of the new landforms to provide stability and create habitat linkage. All site infrastructure would be removed following the completion of the project, and roads and tracks would be removed and revegetated. Hanson would also implement a program to monitor its rehabilitation progress and outcomes.

The Department has recommended conditions of approval that would require Hanson to prepare and implement a Landscape Management Plan. This plan would outline methods, performance criteria and responsibilities for revegetation and rehabilitation of the site, as well as outlining the objectives and criteria for quarry closure. The Department has also recommended a condition of approval which requires Hanson to lodge a rehabilitation bond to cover the full cost of rehabilitating the site. The Department is satisfied that, subject to these conditions, the site would be adequately revegetated and rehabilitated.

#### 4.7 Flora and Fauna

Hanson's flora and fauna assessment did not locate any threatened flora or fauna species within the project area. As the area proposed for the quarry and its infrastructure has been used extensively for grazing, and as only a small number of trees would be required to be cleared to develop the quarry pit and infrastructure area, the assessment concluded that impacts to flora and fauna would be minor.

The Department is satisfied that the minor nature of proposed vegetation clearing would not have a significant impact on any flora and fauna populations, either local or regional. The Department notes

that Hanson would plant trees at various locations within the project site (see Figure 2 for planting locations). The quarry pit would also be fenced to prevent fauna ingress.

The Department considers that the proposed vegetation clearing does not warrant a biodiversity offset, due to the high relative cost involved in acquiring, securing and managing a suitable offset of such small size. The Department believes that Hanson's proposed on-site tree planting and rehabilitation activities would adequately offset the project's flora and fauna impacts.

#### 4.8 Visual

A number of local residents raised concerns that the project would be visually intrusive. The project's visual impacts would, in part, be mitigated by developing the quarry pit within a ridgeline. Therefore, views to the quarry pit from the west would be limited by intervening topography.

Hanson's infrastructure area would be located on the northern flank of a natural amphitheatre, which would provide some shielding from residences to the north. Hanson would also construct and vegetate amenity bunds around the northern and eastern boundaries of the infrastructure area and the site access road to further reduce the project's visual impacts to residences located north and east of the quarry. The restricted hours of operation recommended by the Department would also assist in reducing night lighting impacts.

Given the distance from residences to the project site, the proposed location of the quarry pit and the infrastructure area, and the proposed bunding and tree planting, the Department is satisfied that the project would not result in significant visual impacts for surrounding residents. Nonetheless, the Department has recommended a condition of approval which requires Hanson to limit the visual impacts of the project to ensure that mitigation measures proposed by Hanson (bundling, tree screens and processing plant location) are implemented.

#### 4.9 Other Issues

The project is likely to generate a range of other environmental impacts – including Aboriginal cultural heritage impacts, socio-economic impacts and greenhouse gas emissions. These impacts are not expected to be significant and the Department is satisfied that they can be controlled, mitigated or managed through appropriate conditions of approval. These issues are addressed in Table 6.

**Table 6: Other Issues**

<b>Issue</b>	<b>Consideration</b>	<b>Impact</b>
<i>Heritage</i>	Hanson undertook an Aboriginal cultural heritage assessment in 2002. This assessment found no artefacts or sites of cultural significance. DECCW recommended that a contemporary Aboriginal cultural heritage survey should be undertaken at the site prior to any construction occurring. Hanson proposes to consult with the local Aboriginal community in the preparation of an Aboriginal Cultural Heritage Management Plan for the project. The Department agrees that this measure is sufficient, given that the previous assessment took place 8 years ago, and has recommended that Hanson prepares and submits an Aboriginal Cultural Heritage Management Plan for the project, prior to the commencement of earthworks.  With regard to European heritage impacts, the Department recognises the relationship of the local area with the mid 19 <sup>th</sup> century Gold Rush. However, as the project site was never the subject of any gold find, associated activity or related construction work, the Department is satisfied that the project in itself would not impact on the heritage values associated with the Gold Rush.	Negligible
<i>Socio-Economic</i>	The project involves the efficient extraction of a quality basalt aggregate resource which would otherwise not be recovered or utilised. The proposed quarry is located close to an established transport route and is relatively close to two large regional markets. Therefore Hanson can minimise its transport costs and transport impacts.  The material extracted at East Guyong would be used in a range of local and regional construction projects for the next 30 years, and would ensure that a competitive market for quarry products would	Beneficial

<i>Issue</i>	<i>Consideration</i>	<i>Impact</i>
	<p>be maintained in the local area.</p> <p>The quarry would provide employment for up to 20 operational staff and 15 contracted truck drivers. Hanson would source its employees from the local area, wherever possible.</p> <p>The Department has also recommended that Hanson consults with Cabonne Council and the community to develop a Community Enhancement Program, to provide a minimum of \$25,000 to fund local projects, such as the provision of interpretative material about the nearby Lewis Ponds Creek. A site further north along this creek was the site of the first discovery of gold by Edward Hargreaves, which led to the Gold Rush.</p>	
<i>Greenhouse Gas</i>	<p>The project's direct greenhouse gas (GHG) emissions would be limited to diesel consumption and on-site electricity use.</p> <p>Hanson's greenhouse gas assessment estimated that, at full production, total GHG emissions from the project would be 4,040 tonnes a year of CO<sub>2</sub>-equivalent. This represents an annual contribution of between 0.0004% and 0.0007% in total Australian GHG emissions, but, at least in part, these emissions replace those associated with Hanson's existing quarry at Bathurst, which will soon close. The Department considers the project's predicted GHG emissions to be very low, both in relative and absolute terms.</p>	Negligible

## 5. RECOMMENDED CONDITIONS

The Department has recommended conditions of approval for the project. These conditions are summarised in Appendix A and presented in full in Appendix B. The recommended conditions are required to:

- avoid, prevent and/or minimise any adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting in accordance with current best practice;
- provide for the ongoing environmental management of the project; and
- ensure that long-term rehabilitation and final land use objectives for the site are satisfactorily achieved.

The recommended conditions would effectively manage impacts associated with management of naturally-occurring asbestos minerals, noise, blasting and air quality impacts, water resource impacts, flora and fauna impacts, site rehabilitation, visual impacts, greenhouse gas emissions, on-going environmental monitoring, community consultation, complaints management and performance audits.

The Department consulted with I&I NSW and DECCW about the recommended conditions of approval and with Council about conditions directly affecting Council's interests and has, as a result incorporated minor changes to the conditions. Hanson has reviewed these conditions and accepted them. The Department believes these conditions reflect current best practice for the regulation of hard rock extractive industry projects in NSW.

## 6. CONCLUSION

The Department has assessed the project application, the EA, submissions on the project, Hanson's Response to Submissions and its Preferred Project Report, in accordance with relevant statutory requirements. The most significant issues include management of asbestos minerals, noise and blasting, site water requirements, traffic management and site rehabilitation.

Most significantly, the Department is satisfied that development of the quarry pit would not disturb asbestos minerals and that the amended site for the infrastructure area has a low risk of disturbing asbestos minerals. Nonetheless, the Department has recommended that Hanson completes a comprehensive asbestos mineral mapping investigation for the site, and subsequently reviews and finalises its Asbestos Management Plan for the Department's approval, prior to the commencement of construction at the site. The Department has also recommended that Hanson undertakes appropriate

risk management actions to ensure that asbestos is not disturbed, and implements a monitoring program to minimise any residual risks.

Noise impacts would not be significant for any stage of the project. A noise monitoring program would monitor compliance with the Department's recommended impact assessment criteria. Overpressure and ground vibration levels would be required to comply with relevant criteria and Hanson would be required to plan and manage its blasts to avoid and/or limit impacts to residents and buildings.

Hanson's proposed water management system would be effective in ensuring that water would be generally available for dust suppression throughout the project life. Mitigation measures would be applied in the event that all water demands cannot be met from on-site supplies during very dry years. The project would have a negligible impact on groundwater resources.

Flora and fauna impacts would be limited, as the site has been extensively cleared for grazing and only a small amount of vegetation would be cleared. Hanson's proposed rehabilitation program would ensure the site is returned to a mixture of grazing land and native vegetation after completion of extraction.

Traffic impacts would be minor, with Hanson's proposed road works providing for continued safe and efficient performance of the Mitchell Highway.

The project has a number of significant socio-economic benefits, including employment of up to 20 full time quarry workers and 15 contracted truck drivers, and the significant benefits that would accrue from use of the quarry product in local and regional construction projects.

On balance, the Department believes the project's benefits outweigh any residual costs and that the project is in the public interest and should be approved, subject to conditions.

## 7. RECOMMENDATION

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It is RECOMMENDED that the Deputy Director-General, Development Assessment and Systems Performance, as delegate for the Minister for Planning:

- consider the findings and recommendations of this report;
- approve the project application, subject to conditions, under section 75J of the *Environmental Planning and Assessment Act 1979*; and
- sign the attached instrument of approval (Tagged B).

*Howard Reed*

Howard Reed 22.12.10  
**A/Director**  
**Mining & Industry Projects**

*Chris Wilson* 23.12.10

Chris Wilson  
**Executive Director**  
**Major Projects Assessment**

*Richard Pearson* 6/1/11

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

## APPENDIX A. CONDITIONS OF APPROVAL SUMMARY

<b>Aspect</b>	<b>Condition</b>	<b>Requirement</b>
<b>Schedule 2: Administrative Conditions</b>		
Terms of Approval	5	Approval for quarrying operations until 2041
	6	Restriction on production to 400,000 tonnes per annum
Community Enhancement Fund	10	Requirement to establish a \$25,000 community enhancement fund
<b>Schedule 3: Specific Environmental Conditions</b>		
Naturally-Occurring Asbestos	1	Requirement to map naturally-occurring asbestos minerals
	2	Requirement to fence asbestos outcrops
	3	Asbestos impact assessment criteria
	4	Asbestos Management Plan
Noise	5	Noise impact assessment criteria
	6	Operating hours
	7	Noise Monitoring Program
Blasting	8-9	Blast impact assessment criteria
	10-11	Restriction on blasting frequency and hours
	13-14	Blast Management Plan
	15-17	Rights for structural property inspections for properties potentially affected by blasting and notification of blasting program
Air Quality	18	Air quality impact assessment criteria
	20-21	Air Quality Monitoring Program, and meteorological monitoring
Surface and Groundwater	22	Requirement to ensure sufficient water is available for all operations
	25	Soil and Water Management Plan
	26	Site Water Balance
	27	Erosion and Sediment Control Plan
	28	Surface Water Monitoring Program
	29	Ground Water Monitoring Program
Rehabilitation and Landscape Management	30	Requirement to rehabilitate the site
	31	Landscape Management Plan
	32	Rehabilitation Management Plan
	34-35	Rehabilitation bond
Heritage	35	Aboriginal Cultural Heritage Management Plan
Traffic and Transport	37-38	Requirements to seal the quarry access road and upgrade its intersection with the Mitchell Highway
Visual Impact	40	Requirement to minimise the project's visual and lighting impacts
Waste Minimisation	42	Requirement to monitor and minimise waste
<b>Schedule 4: Environmental Management, Monitoring Auditing and Reporting</b>		
Environmental Management Strategy	1	Requirement to prepare an Environmental Management Strategy
Annual Review	3	Requirement to review the environmental performance of the project on an annual basis
Community Consultative Committee	5	Requirement to establish a Community Consultative Committee
Incident Reporting	6	Requirement to report incidents
Auditing	8	Requirement to undertake regular independent environmental audits
<b>Schedule 5: Additional Procedures for Air Quality and Noise Management</b>		
Independent Review of Impacts	2	Right to independent review of predicted impacts for affected residents
	3	Requirement to undertake measures to ensure compliance if independent review shows non-compliance or to reach agreement with affected residents

## **APPENDIX B. RECOMMENDED CONDITIONS OF APPROVAL**

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See the attached Instrument of Approval (tagged A).

## APPENDIX C. CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

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### ***State Environmental Planning Policy (Major Development) 2005***

See discussion in Section 2.1.

### ***State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007***

The Department is satisfied the project is consistent with the aims, objectives and requirements of the Mining SEPP.

### ***State Environmental Planning Policy No. 33 – Hazardous and Offensive Development***

SEPP 33 requires consideration of whether an industrial proposal is a potentially hazardous or offensive industry. This is defined as a development that “*would pose a significant risk in relation to the locality; to human health, life or property; or to the biophysical environment, and includes a hazardous industry and a hazardous storage establishment*”.

The EA and Preferred Project Report detail the management considerations for various aspects of the project such as management of naturally-occurring asbestos minerals, waste management, fuel storage and emergency response. Asbestos minerals would be managed under a site specific Asbestos Management Plan. All other hazardous materials would be managed in general accordance with the company's existing management procedures. An EPL would be obtained for the proposed development. The Department is satisfied that the proposal is generally consistent with the aims, objectives, and requirements of SEPP 33.

### ***State Environmental Planning Policy No. 55 – Remediation of Land***

SEPP 55 aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. In particular, this policy requires consideration of whether a development requires a consent for remediation works, and requires that remediation works meet certain standards and notification requirements. It also requires a consent authority to consider whether, if land is contaminated, it is suitable in this state for the proposed development. Land containing asbestos minerals (considered in Section 4.1) does not fall within the definitions of contaminated land in SEPP 55.

The Department is satisfied that the project is generally consistent with the aims, objectives and requirements of SEPP 55.

### ***Cabonne Local Environmental Plan 1991 (Cabonne LEP)***

The project location is zoned 1(a) (General Rural) under the Cabonne LEP. The objectives of this zone include the promotion, proper management and utilisation of resources by protecting, enhancing and conserving... “*valuable deposits of minerals, coal, petroleum and extractive materials by controlling the location of development for other purposes in order to ensure the efficient extraction of those deposits*”. Extractive industries and their associated surface activities are permissible with development consent in the 1(a) (General Rural) zone. Therefore, the Department is satisfied the project is compatible with the aims and objectives of the Cabonne LEP.

## **APPENDIX D. PROPONENT'S RESPONSE TO SUBMISSIONS, PREFERRED PROJECT REPORT & STATEMENT OF COMMITMENTS**

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See attached CD containing files entitled *East Guyong Quarry Project Detailed Response to Public Exhibition Submissions* (received February 2010), *East Guyong Quarry Preferred Project Report* (dated March 2010) and *East Guyong Quarry Project Final Statement of Commitments* (received September 2010).

## **APPENDIX E. SUBMISSIONS**

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See attached CD containing a folder entitled *East Guyong Quarry Project Submissions*.

## **APPENDIX F. ENVIRONMENTAL ASSESSMENT**

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See the attached CD containing a folder entitled *East Guyong Quarry Project Environmental Assessment*, dated September 2009.