Land and Environment Court of New South Wales

CITATION :	**Newcastle & Hunter Valley Speleological Society Inc v Upper Hunter Shire Council and Stoneco Pty Limited (No 2) [2010] NSWLEC 104**
PARTIES :	APPLICANT Newcastle & Hunter Valley Speleological Society Inc FIRST DEFENDANT Upper Hunter Shire Council SECOND DEFENDANT Stoneco Pty Limited
FILE NUMBER(S) :	10497 of 2009
CORAM:	Preston CJ
KEY ISSUES:	APPEAL :- objector appeal against Council's decision to grant consent to limestone quarry - conditions of consent

CASES CITED:	Gerroa Environment Protection Society Inc v Minister for Planning and Cleary Bros (Bombo) Pty Ltd (No 2) [2008] NSWLEC 254 Newcastle & Hunter Valley Speleological Society Inc v Upper Hunter Shire Council and Stoneco Pty Limited [2010] NSWLEC 48 Sanctuary Investments Pty Ltd v Baulkham Hills Shire Council [2006] NSWLEC 733; (2006) 153 LGERA 355
DATES OF HEARING:	28 May 2010, 31 May 2010, 18 June 2010, 23 June 2010
DATE OF JUDGMENT:	23 June 2010
LEGAL REPRESENTATIVES:	APPLICANT Mr P Larkin with him Mr C Norton (barristers) SOLICITORS Environmental Defender's Office FIRST RESPONDENT Mr P Jayne (solicitor) SOLICITORS Sparke Helmore SECOND RESPONDENT Mr J Robson SC SOLICITORS McPhee Kelshaw

JUDGMENT:

THE LAND AND

ENVIRONMENT COURT
OF NEW SOUTH WALES

PRESTON CJ

23 JUNE 2010

10497 of 2009

NEWCASTLE & HUNTER VALLEY SPELEOLOGICAL SOCIETY INC V UPPER HUNTER SHIRE COUNCIL AND STONECO PTY LIMITED (NO 2)

JUDGMENT

1 **HIS HONOUR:** On 31 March 2010, I gave judgment indicating that the proposed limestone quarry was appropriate to be approved if suitable conditions could be drafted to address the matters raised in the judgment: *Newcastle & Hunter Valley Speleological Society Inc v Upper Hunter Shire Council and Stoneco Pty Limited* [2010] NSWLEC 48. I made directions for the parties to address the outstanding matters and propose further and amended conditions.

2 A further hearing was held on 28 and 31 May 2010 at which additional evidence was adduced and revised conditions tendered. Evidence was given on two topics: caves and their biota and surface biodiversity. As to the first, the issues related to the pre-blasting assessment protocol. Dr Osborne and Dr Swabey again gave evidence. They agreed concerning the safe distance for blasting from caves. Dr Osborne also gave brief evidence as to inspection under the Cave Discovery Protocol following initial excavation on the first bench to be cut. Dr Peter Hancock gave evidence for the applicant, in a report dated 19 May 2010, on the design and implementation of a pre-blasting assessment protocol. Dr Hancock's recommendations were adopted in the revised conditions tendered.

3 As to the second topic, the issues related to the measures proposed to offset the impacts of the proposed quarry on the White Box endangered ecological community. Mr Dominic Fanning, ecologist, gave evidence for Stoneco. In his evidence in chief in a report dated 6 May 2010, Mr Fanning proposed that the Project Site be extended to the south to incorporate, within a 6ha area, the north-facing slope of the next ridge to the south of the quarry ridge, which supports the same Large-flowered Bundy-Kurrajong with a Lomandra understorey community as is presently on the quarry site itself, as well as the whole of the south-facing slope of the quarry ridge, which supports the closely related Large-flowered Bundy-Kurrajong with a grassy understorey community. Both of these vegetation communities fall within the White Box endangered ecological community.

4 Dr Clements again gave evidence for the applicant. In her report of 21 May 2010,

Dr Clements agreed that the vegetation communities in the 6ha area proposed by Mr Fanning were appropriate as a biodiversity offset. However, Dr Clements disagreed that this 6ha area alone was sufficient. Dr Clements applied the six principles of offsetting which she said were held by Jagot J, but in fact were proposed by a witness, in *Sanctuary Investments Pty Ltd v Baulkham Hills Shire Council* [2006] NSWLEC 733; (2006) 153 LGERA 355 at [38]. Dr Clements applied these principles to the proposed 6ha area alone and did not consider the remaining 60ha of the Project Site.

5 Mr Fanning in his report of 24 May 2010, in reply noted that the 6ha biodiversity offset was supplementary to the other measures proposed to retain, protect and manage in perpetuity for biodiversity conservation purposes the balance of the Project Site. These measures are detailed in the revised conditions of consent, including:

- preparation and implementation of a Biodiversity Management Plan (S1.2.3 and S5.5);
- conservation in perpetuity of vegetation on the Project Site outside of the extraction area (S1.21.2 and S5.5(g));
- checking of tree hollows prior to removal and replacement of tree hollows lost (S1.21.4-1.21.9 and S7.2);
- prohibition of clearing of native vegetation on the Project Site outside of the extraction area (S1.22.1);
- prohibition on roads within 5 metres of any stand of *Xanthorrhoea glauca* (grass trees) or *Ficus rubiginosa* which is located outside of the boundaries of the extraction area (S1.24A.1);
- restrictions on grazing within the Project Site (S1.36 and S5.5(f)(viii) and (g));
- the rehabilitation of the Project Site, especially the extraction area (S5.5(d)-(f) and S7.3);
- weed management of the Project Site (S5.5(f)(i));
- protection of sensitive site features and their buffer areas, including *Xanthorrhoea glauca* and gullies and their vegetation (S5.5(f)(ii)-(iv)); and
- preparation and implementation of a Landscape Management Plan (S7.1) incorporating a Vegetation Clearing Plan (S7.2), Rehabilitation Management Plan (S7.3) and Mine Closure Plan (S7.4).

6 Mr Fanning observes that the total offset package comprising not only the supplementary 6ha biodiversity offset but also the biodiversity conservation measures proposed in the revised conditions, entirely satisfies the principles referred to in *Sanctuary Investments Pty Ltd v Baulkham Hills Shire Council*.

7 At the further hearing, the parties made submissions in relation to the revised conditions where these were in dispute. I made rulings ex tempore on the disputed conditions. These rulings necessitated further revision of the conditions. I made directions setting a timetable for the parties to prepare further revised conditions.

8 These further revised conditions were filed on 11 June 2010. There were still some matters on which the parties remained in disagreement relating to the pre-blasting assessment protocol and the Biodiversity Management Plan and offsets. I also had concerns as to the wording of a number of the conditions. A further

hearing was therefore held on 18 June 2010 at which the parties made submissions and I made rulings ex tempore. On one final matter, relating to what should be the appropriate response of Stoneco to the finding of material of geodiversity significance during the pre-blasting assessment (condition S3.32), Stoneco sought time for consideration and to make submissions later. A further timetable was directed culminating with a final hearing on 23 June 2010 if the parties were not able to reach agreement beforehand.

9 On 21 June 2010, the Council filed further revised conditions incorporating my rulings on 18 June 2010 and a revised condition S3.32. The Council advised that Stoneco, the applicant and the Council had reached agreement as to the wording of condition S3.32. A further hearing was therefore not required.

10 As a result, all of the conditions of consent have now been settled. I consider that proposed limestone quarry if carried out in accordance with these final conditions of consent is appropriate and should be approved.

11 I do not accept the applicant's submission that the evidence does not permit the Court to formulate appropriate conditions that adequately address the risks to geodiversity and biodiversity. The final conditions implement a precautionary, adaptive management approach, yet still meet criteria of finality and certainty.

12 The final conditions also ensure adequate offset is provided for damage caused to the White Box endangered ecological community by the proposed development. The offset is not merely the supplementary 6ha area to be included in the extended Project Site. It also includes the long-term conservation of the vegetation on all of the Project Site not directly to be quarried or used for ancillary works and uses (54ha) as well as, after quarrying operations have finished, the rehabilitation and conservation of the areas damaged and used for quarrying operations (6ha). The long-term conservation of the White Box endangered ecological community on the combined area of 66ha will be required by the final conditions of consent (as summarised above). I am satisfied that there will be gains in the conservation of biodiversity of sufficient magnitude in these total offset areas to compensate for the loss of vegetation during quarrying operations.

13 In this respect, I prefer the evidence of Mr Fanning that the measures proposed for the retention and protection for biodiversity conservation purposes of the whole of the 66ha of the Project Site contributes to offsetting the damage caused by quarrying operations, rather than the evidence of Dr Clements who focussed only on the supplementary 6ha area.

14 In order to grant consent on the final conditions, it is necessary for the Court to uphold the appeal. This order is necessary notwithstanding that the appeal is a third party objector appeal by the applicant against the decision of the Council to grant consent. As I noted in another third party objector appeal, *Gerroa Environment Protection Society Inc v Minister for Planning and Cleary Bros (Bombo) Pty Ltd (No 2)* [2008] NSWLEC 254 at [5]-[6], in order to approve a development that is different in material respects, and on different conditions from those originally approved by the Council, it is necessary for the Court to uphold the appeal.

15 Accordingly, the formal orders of the Court are:

1. The appeal is upheld.

2. Development consent is granted to development application number 308/08 for a limestone quarry, stockpiling and handling area, site access road and internal access track on land comprising part of Lot 31 in DP 748766, subject to the conditions in Annexure A.

3. The exhibits may be returned.

Form 6 (version 1)
UCPR 6.9

ANNEXURE "A"
to Court Orders dated 23 June 2010
CONDITIONS OF CONSENT

COURT DETAILS	
Court	Land and Environment Court of New South Wales
Class	1
Case number	10497 of 2009
TITLE OF PROCEEDINGS	
Applicant	**Newcastle & Hunter Valley Speleological Society Inc.**
1st Respondent	**Upper Hunter Shire Council**
2nd Respondent	**Stoneco Pty Ltd**

A. PREAMBLE

A1. Development consent is hereby granted for a limestone quarry, stockpiling and handling area, site access road and internal access track, having a combined area of 5.85 hectares, as depicted on the Preferred Project Layout Plan, together with all site rehabilitation works, to be carried out over a period of 30 years from the date of commencement of excavation in accordance with the conditions set out in Schedules 1, 2, 3, 4, 5, 6 and 7 below, all of which form part of this consent.

A2. In this development consent the following definitions are used:

" **Council** " means Upper Hunter Shire Council (or its successor);

" **DECCW** " means the New South Wales Department of Environment, Climate Change and Water (including any successor to that Department which exercises the same or similar statutory responsibilities)[Note: any reference to DECC means a reference to DECCW];

" **Department of Industry & Investment** " means the New South Wales Department of Industry & Investment (including any successor to that Department which exercises the same or similar statutory responsibilities);

" **DWE** " means the New South Wales Department of Water and Energy (including any successor to that Department which exercises the same or similar statutory responsibilities);

" **Lot 31** " means Lot 31 in DP 748766;

" **Preferred Project Layout Plan"** means the plan entitled " *Amended Preferred Project Site Layout Figure B"*, prepared by R W Corkery Pty Limited being the plan that is annexed to this development consent and marked **"A"** ;
" **Project Site** " means that part of Lot 31, having an area of approximately 66 hectares, that will be owned by the Applicant and within which the quarry site is located, being the land hatched in "red" and the land coloured "green/blue" on the plan prepared by Whelans Insites dated 6 May 2010 that is annexed to this development consent and marked **"B"** ;

" **Quarry Site** " means the footprint of the quarry, which will be excavated during quarrying, identified as the "Extraction Area" in the Preferred Project Layout Plan.

SCHEDULE 1

S1.1 The application has been determined by granting of consent, subject to the following conditions:-

S1.1.1 Compliance with the provisions of the *Local Government Act* 1993 and *Environmental Planning and Assessment Act* 1979 (as amended).

S1.1.2 Compliance with the relevant codes of the Standards Association of Australia adopted by the Building Code of Australia.

S1.1.3 Compliance in all respects with the requirements of any restrictive covenants applying to the property.

Reason*: The applicant is responsible to ensure that any restrictive covenants affecting the property are complied with.*

GENERAL CONDITIONS

S1.2 General

S1.2.1 The proposed development must be carried out in accordance with the proposal described in the Environmental Impact Statement (*R.W. Corkery & Co Pty Limited*, 2008), except as modified by

(i) these conditions,

(ii) engineering and subdivision requirements imposed by the Council;

(iii) the location of the stockpile and handling area in the “Preferred Project Layout Plan”;

and/or the requirements of the *Environmental Planning and Assessment Act* 1979.

Mining Operations Plan and Mine Closure Plan

S1.2.2 The Applicant shall prepare and submit for approval by the Director-General of the Department of Industry & Investment each of the following:

(a) a **Mining Operations Plan**:

(b) a **Mine Closure Plan**.

Each of those plans shall be prepared in accordance with the *Mining Act* 1992 and with all other applicable legislation. Following the approval of each of those plans, the Applicant shall provide a copy of the approved plans to the Council.

Note: Under this consent, the Applicant is required to rehabilitate the Project Site to the satisfaction of the Council and the consent will continue for this and related purposes.

Management Plans

S1.2.3 The Applicant shall prepare and submit to the Council for approval each of the following:

(a) a **Soil and Water Management Plan** (SWMP) prepared in accordance with conditions S5.2(a) and S5.3;

(b) an **Air Quality Management Plan** (AQMP) prepared in accordance with conditions S5.2(b) and S5.4 ;

(c) a **Biodiversity Management Plan** (BMP) prepared in accordance with conditions S5.2(c) and S5.5 ;

(d) an **Environmental Management Strategy** (EMS) prepared in accordance with condition S6.1;

(e) a **Landscape Management Plan** (LMP) prepared in accordance with condition S7.1;

(f) a **Vegetation Clearing Plan** (VCP) prepared in accordance with condition S7.2;

(g) a **Rehabilitation Management Plan** (RMP) prepared in accordance with condition S7.3; and

(h) a **Lower Chert Band Management Plan** (LCBMP), prepared in accordance with conditions S5.2(d) and S5.6.

S1.2.4 Each of the plans submitted by the Applicant to the Council in accordance with condition S1.2.3 shall be assessed by the Council. The Council (acting reasonably) may require the Applicant to amend the Plans. After any such amendments are made by the Applicant, the Council shall approve each of those plans. No works may commence on the Project Site until the Council has approved each of those plans listed in S1.2.3 (a), (b) and (f). No extraction works may commence on the Quarry Site until:

(a) the Council has approved all other remaining plans listed in S1.2.3; and

(b) the Director-General of the Department of Industry Investment has approved the plans in S1.2.2.

S1.2.5 If from time to time, and in accordance with these conditions, the Applicant (whether of its own volition or in accordance with recommendations made pursuant to these conditions) proposes any amendments to the plans referred to in condition S1.2.3 then those proposed amendments shall be submitted by the Applicant to the Council for approval.

S1.2.6 An amendment to a plan under condition S1.2.5 does not take effect until:

(a) the Council has approved the amendments; and

(b) the Applicant has made any further amendments required by the Council (acting reasonably) as a condition of approving the amendments.

S1.2.7 The Applicant shall fully implement each of the plans referred to in condition S1.2.3, including any amendments to those plans approved by the Council in accordance with S1.2.6.

S1.2.8 If there is any inconsistency between these conditions of consent and any of the following:

(a) the Environmental Impact Statement;

(b) the documents referred to in S1.2.1 (iii)-(v); or

(c) the plans referred to in S1.2.2 and S1.2.3,

then the conditions of consent shall prevail.

Reason: *To ensure development complies with this approval and proposal which was considered.*

S1.3 Period of Approval

S1.3.1 In respect of the right to conduct limestone extraction and processing operations, this consent is limited to a period of 30 years from the date of effective commencement of this development consent (as defined by Section 83 of the *Environmental Planning and Assessment Act* 1979).

Reason: *To comply with the stated period of operational consent.*

S1.4 Limits of Approval

S1.4.1 The Applicant shall not transport more than 100,000 tonnes of limestone per year from the Project Site.

S1.4.2 The Applicant shall restrict extraction operations to the Quarry Site, which is coincident with the area identified as the “Extraction Area” in the Preferred Project Layout Plan.

S1.4.3 Transportation of product from the Project Site shall be restricted to Monday to Saturday. No transportation is to be carried out on Sundays or Public Holidays.

S1.4.4 The maximum limit number of daily truck movements to and from the Project Site on Monday to Friday shall not exceed 32 truck movements (16 loads) per day. The maximum limit number of daily truck movements to and from the Project Site on Saturday shall not exceed 16 truck movements (8 loads) per day.

S1.4.5 Product trucks shall be limited to a maximum of Class 9 vehicles (in accordance with the AUSTRoads vehicle classification system) i.e. six axle articulated vehicle or rigid vehicle and trailer. The maximum gross weight limit of such trucks shall not exceed 42.5 tonnes.

S1.4.6 Product trucks are prohibited from using Haydons Lane for access to or from the Project Site to the New England Highway.

Reason*: To ensure the quarry operates within the limits of the approval.*

ROADS AND TRAFFIC

S1.5 Contribution for the Maintenance and Construction of Public Road and Bridge Infrastructure

S1.5.1 The Applicant is to pay a monetary contribution to the Council of $100,000 (one-hundred thousand dollars) prior to commencement of any works on the Project Site.

S1.5.2 The Applicant is to pay a monetary contribution to the Council at the rate of $1.00 (one dollar) per tonne of limestone extracted from the Project Site and transported on road infrastructure maintained by the Council subject to S1.5.5 below.

S1.5.3 The rate of payment of the monetary contribution referred to in S1.5.2 above, shall be reduced to $0.50 per tonne of limestone extracted from the Project Site and transported on road infrastructure maintained by the Council until the total amount of limestone transported exceeds 100,000 tonnes (one-hundred thousand tonnes).

S1.5.4 The contribution is to be paid quarterly to the Council by the last business day of January, April, July and October each year. The contribution to be paid on those dates is the total liability of the Applicant owing to the Council, for the preceding quarter ending 31 December, 31 March, 30 June and 30 September.

S1.5.5 The Rate is to be increased at the commencement of each calendar year in line with the Consumer Price Index.

S1.5.6 Note: The rate of the payment will remain the same if the Consumer Price Index decreases.

S1.5.7 The amount of the contribution is to be based on approved weighbridge or approved portable weighing system recordings of limestone transported from the Project Site. Copies of records are to be submitted to the Council with each payment, and original records are to be made available for inspection at such other times as may be required.

Reason: *To ensure that public road and bridge infrastructure is of adequate standard and is adequately maintained during the life of the quarry.*

S1.6 Traffic Safety

S1.6.1 Prior to work commencing on the Project Site, the Applicant shall provide an appropriate two-way radio to the school bus that uses the haulage route. The bus drivers shall be appropriately trained in the use of the radio.

S1.6.2 Prior to work commencing on the Project Site, the Applicant shall provide a code of conduct to all truck drivers (using the quarry) outlining the required conduct during the delivery of

materials and details of the local school bus movements. The code must require:

(a) that all loads be covered in accordance with the Department of Environment and Climate Change General Terms of Approval.

(b) all loaded trucks are loaded using a front-end loader with weigh cells, or other approved weighing system, prior to leaving the Project Site to avoid overloading;

(c) truck drivers to be conscious of the school bus and school children and their pick-up / drop-off locations, particularly during specified pick-up / drop-off times; and to drive in a courteous and safe manner;

(d) a 20km/hr speed limit for trucks whilst travelling along unsealed sections of the internal site access road;

(e) restriction of material transport within daylight hours with no product trucks entering the Project Site before 7.00am or leaving the Project Site after 5.00pm daily (Monday to Saturday); and

(f) have an agreed communication protocol between truck drivers and the school bus company.

S1.6.3 Prior to work commencing on the Project Site the Applicant shall prepare and submit to the Council for approval detailed plans showing the access road within the site and the intersection of that access road with Timor-Crawney Road. No work shall be carried out on the Project Site until those plans are approved by the Council.

S1.6.4 Prior to the commencement of haulage of product from the Project Site, the Applicant shall construct pull-over bays in four (4) locations approved by the Council's Traffic Committee along the Timor Road haul route. The bays shall be for the purpose of enabling loaded trucks to pull over and enable safe overtaking by other traffic along steep sections of the haul route. The bays are to be of adequate dimensions and construction standard to safely fulfill their purpose. Where approved by Council, the bays may coincide with school bus pick up/drop off locations.

***Reason**: To ensure heavy vehicles associated with the quarry operate in a safe manner.*

S1.7 Commencement of Haulage

S1.7.1 The Applicant shall not commence haulage of limestone product from the Project Site (other than for the purpose of road construction works associated with the haulage route) until condition S1.33.1 is satisfied and until notified by the Council that the haulage route is open for such purposes.

Reason *: To ensure product transportation does not commence until the haulage route is constructed to a standard that will allow for the safe movement of heavy vehicles.*

S1.8 Section 94A Levy Contributions - Prior to Work Commencing

S1.8.1 Pursuant to section 80A(1) of the *Environmental Planning and Assessment Act* 1979, and the Council Section 94A Development Contributions Plan 2008, a contribution of $ ***7,500*** shall be paid to Council. The amount to be paid is to be adjusted at the time of the actual payment, in accordance with the provisions of the Council Section 94A Development Contributions Plan 2008. The contribution is to be paid prior to work commencing.

Reason: *To ensure that the proposed development makes an appropriate contribution to facilities in the Upper Hunter Local Government Area.*

WATER MANAGEMENT

S1.9 Department of Water and Energy

S1.9.1 The Applicant shall:

(a) provide evidence to the Council prior to the commencement of work that the test groundwater license(s) for the exploration drill holes have been obtained in accordance Section 112 of the *Water Act* 1912 prior to work commencing.

(b) provide evidence to the Council prior to the commencement of work that works and use approval and a Water Access License has been obtained in accordance with the *Water Management Act* 2000 if required by the DWE as part of the proposed repealing of the *Water Act* 1912.

Reason *: To ensure the requirements of the Department of Water and Energy have been met.*

S1.10 Erosion and Sediment Control

S1.10.1 The Soil and Water Management Plan referred to in condition S1.2.3(a), shall specify the standard erosion and sediment controls that will be put in place on the Project Site by the Applicant. These controls shall be designed generally in

accordance with the requirements of the “Managing Urban Stormwater – Soils and Construction: Volume 2E Mines and Quarries” (DECCW, June 2008) (See also condition S5.3). All necessary erosion and sediment control measures must be in place and operational prior to commencement of construction work.
S1.10.2 The capacity of the clean water dam is to be increased in consultation with the DECCW or any other responsible authority, to provide the maximum capacity that is legally permissible on the Project Site and which is considered to be practicable. The Applicant shall secure the consent or approval of any authority, in addition to the Council, that is required in respect of this dam, before construction of the dam commences.

S1.10.3 The controls nominated in this condition S1.10 shall be reviewed and modified to reflect any amendments to the SWMP (referred to in S5.2(a) and S5.3), arising from a periodic review of the SWMP in accordance with S5.7(g) and/or S6.7.

***Reason**: To prevent unacceptable levels of sediment movement from the Project Site during construction and operation of the quarry.*

S1.11 Surface Water Monitoring

S1.11.1 The Applicant shall regularly monitor:

(a) the quality of water discharged from the Project Site; and

(b) surface water quality upstream and downstream of the development (at the Project Site boundary) in the tributaries identified in Table 4.5 and Figure 4.3 of the EIS;
and report the results of this monitoring in the *Annual Environmental Management Report* (AEMR) (refer to Condition S6.2). The results must be reported in a form satisfactory to the Council. The Applicant shall ensure that the quality of water discharging from the Project Site is within the criteria outlined in Table 1, or of the same quality of the water measured upstream of the quarry operations.

Table 1 : Surface Water Quality Criteria

Parameter	Unit	100% Concentration Limit
Total Suspended Solids	mg/L	50
Electrical Conductivity	µS/cm	1500
Biochemical Oxygen Demand	mg/L	20
pH	-	6.5-8.5

S1.11.2 The controls nominated in this condition S1.11 shall be reviewed and modified to reflect any amendments to the SWMP (referred to in S5.2(a) and S5.3), arising from a periodic review of the SWMP in accordance with S5.7(g) and S6.7.

***Reason**: To ensure that surface waters are not being adversely impacted by quarry construction or operation.*

S1.12 Groundwater Monitoring

S1.12.1 Before quarrying commences on the project site, the applicant shall drill three groundwater monitoring bores within the Project Site or 2 in the Project Site and 1 in the road reserve to the north of the Project Site, subject to any relevant statutory approvals, which shall be used to:

(a) monitor the impacts of the proposed quarry on the groundwater in the alluvium below the Quarry Site (alluvial aquifer) and on the subjacent limestone aquifer;

(b) monitor variations in water table levels;

(c) take water samples for analysis of water quality; and

(d) sample for the presence in the alluvial aquifer and in the subjacent limestone aquifer of groundwater dependent ecosystem (“GDE”) species, including stygofauna;

(e) monitor variations in any GDE populations present in the alluvium and limestone.

The bores referred to in this condition S1.12.1 may also be utilised for monitoring in accordance with condition S3.14(f)(ii), provided they are otherwise suited for that purpose.

S1.12.2 One of the three (3) groundwater monitoring bores shall be drilled in a location that will allow any natural variation in the density and frequency of stygofauna present in the alluvial and limestone aquifers, together with water chemistry and sediment load, to be ascertained (reference monitoring site). Each of the three (3) groundwater monitoring bores must be drilled to at least five metres below the lowest level of the water table, with the depth of the bore to be determined having regard to fluctuations in the level of the water table, reflecting seasonal variations in the level of the water table that have been recorded in respect of bores on land in the locality.

S1.12.3 The applicant shall engage a qualified hydrologist and an appropriately qualified GDE expert. The hydrologist shall, in consultation with the GDE expert, prepare a report which, having regard to S1.12.2 and to the required use of the monitoring bores under S1.12.1:

(a) recommends the proposed location of each of the three (3) groundwater monitoring bores;

(b) explains the bases upon which the experts' recommendations are made; and

(c) confirms that the recommended locations of the three (3) groundwater monitoring bores will ensure that the bores can be used for the purposes identified in condition S1.12.1 and will satisfy S1.12.2.

S1.12.4 The report referred to in S1.12.3 must be submitted to the Council, and the Council must approve the proposed location of each of the three (3) groundwater monitoring bores, before any of those bores are drilled.

S1.12.5 The Applicant shall develop and submit to the Council for approval a sampling protocol for GDE biota. That protocol shall be developed having regard to both the principles outlined in "*Sampling Groundwater Fauna: Efficiency of Rapid Assessment Methods Tested in Bores in Eastern Australia*", Hancock and Boulton "*Freshwater Biology (2009) 54, 902-917*" ("the GDE Sampling Protocol"), in relation to GDE fauna, and to industry best practice in relation to the sampling of other GDE biota. In particular, the GDE Sampling Protocol must provide, amongst other matters that on each occasion on which sampling takes place for the purpose specified in S1.12.1(e), GDE biota must be sampled by using a combination of pump sampling and phreatobiological net sampling, together with such other sampling methods as will

maximise the prospects of recovering GDE fauna and other GDE biota. The GDE Sampling Protocol must be approved by the Council before the first groundwater sample is taken, in accordance with S1.12.7.

S1.12.6 The GDE Sampling Protocol may be varied by the Applicant with the approval of the Council. Any such request for a variation of the protocol must be accompanied by a statement/report from appropriate experts (either a GDE expert and/or a hydrologist) in support of the variation.

Reason: *To allow for any variation/innovation of scientific methodology and/or sampling techniques and/or equipment over the life of the development.*

S1.12.7 Monitoring and sampling in accordance with this condition S1.12 must commence no later than **twelve (12)** months prior to the commencement of extraction.

S1.12.8 Groundwater must be monitored and sampled in accordance with conditions:

(a) S1.12.1(a) and (b), continuously, without interruption; and

(b) S1.12.1(c), (d) and (e), at quarterly intervals,

from the date on which monitoring and sampling commences, in accordance with condition S1.12.7.

S1.12.9 Unless the Council accepts any other mechanism for the continuous monitoring of groundwater quality, that monitoring shall be undertaken by installing in each of two (2) groundwater monitoring bores (excluding the bore utilized to collect reference monitoring data) an instrument which takes water quality measurements at intervals no greater than thirty (30) minutes. The instrumentation used for this purpose must be capable of detecting any deterioration in water quality and in the event that any such deterioration is detected, an alert must be transmitted to at least two (2) representatives of the operator of the quarry. The alert system utilized by the water quality instrumentation must be disclosed to and approved by the Council before water quality monitoring commences.

S1.12.10 The results of the groundwater monitoring and sampling and the results of the GDE biota monitoring and sampling must be reported to the Council, in writing. Those reports shall be submitted at quarterly intervals, within one month of the date on

which each sampling for GDE biota takes place. For the first 3 years of testing, each quarterly test report must be accompanied by a statement from an appropriately qualified GDE expert, detailing the results and their significance, and recording the GDE expert's concerns, if any, arising from the water monitoring and water sampling, including concerns in relation to apparent, actual or potential impacts of any reduction in water quality on the GDE biota or specific taxa.

Reason: *To provide the council with an understanding of the GDE and other taxa observed during the initial 3 years of the development.*

S1 . 12.11 If the GDE expert's statement does record any of the concerns that are referred to in condition S1.12.10, then the Applicant shall engage a qualified hydrologist to review the findings made by the GDE expert and to make recommendations about the manner in which the quarrying operations should continue on the Project Site, including recommendations about the way in which any reductions in water quality and any variations in GDE biota should be addressed.

S1.12.12 After a three (3) year period has elapsed, from the date on which the first set of bore samples is taken and recorded, the Applicant may engage an appropriately qualified GDE Expert to review the sampling data set and make any written recommendations about whether the sampling frequency may be reduced or should be increased, and whether the sampling parameters should be varied. Any recommended changes in the frequency of bore sampling must take into account any seasonal variations in taxa numbers and recommend specific times of the year that sampling be undertaken. This report must be submitted to the Council and the Council may determine to reduce or to increase the bore-sampling frequency and parameters being sampled.

S1.12.13 The cumulative results/data of the monitoring and sampling must be reported in the *Annual Environmental Management Report* (AEMR)[see Condition S6.2]. That is, the monitoring and sampling data from all previous years must be set out in a cumulative monitoring and sampling table for each subsequent AEMR for the life of the development.

S1.12.14 The AEMR must include statements from an appropriately qualified GDE expert and from a qualified hydrologist. The GDE expert shall review the annual data-set from the three (3) groundwater monitoring bores (making any relevant comparisons with historical data taken from those bores) and shall summarise his or her findings. The qualified hydrologist shall review the findings made by the GDE expert and shall make recommendations about the manner in which the quarrying operations should

continue on the Project Site, including recommendations about the way in which any impacts on water quality and on GDE biota should be addressed.

S1.12.15 The recommendations made under S1.12.11 and S1.12.14 must be incorporated by the Applicant as proposed amendments to the *Mining Operations Plan* [condition S5.1] and to the *Soil and Water Management Plan* [conditions S5.2(a) and S5.3].

S1.12.16 The actions referred to in condition S1.12.15 must be taken within two (2) months of the date on which the recommendations are made to the quarry owner. Within one (1) month of receiving those recommendations the quarry owner must provide to the Council a copy of the recommendations made by the qualified hydrologist and details of the actions that will be taken by the quarry owner to implement those recommendations.

Reason: *To ensure that ground waters are not being adversely impacted by quarry construction or operation.*

S1.12A Storage of Fuels

S1.12A.1 Any fuel stored on site must be contained within a double skinned mini tanker. This tanker must be located within the stockpile and handling area except when required to be moved for refilling or refueling operations. It must be returned to the stockpile and handling area immediately after use.

S1.12A.2 All hydrocarbons, including those within the mini-tanker, must be stored on bunded pallets with 110% the capacity of the largest container stored on that pallet.

S1.12A.3 No explosives are to be stored on the Project Site. Explosives must only be brought to the Project Site 24 hours prior to any blast event.

S1.12B Drainage of Quarry Floor

S1.12B.1 Drainage works for the quarry floor, work areas and access roads must be designed to minimize the input of these materials into the karst. The quarry pit must be designed to drain outwards and so as not to collect water.

AIR QUALITY, BLAST AND NOISE

S1.13 Pre-Blast Building Condition Report

S1.13.1 The Applicant shall commission a suitably qualified person, whose appointment has been approved by Council, to inspect and report on the condition of buildings on Lot 1 DP 590486 prior to the commencement of blasting (subject to the owner of that lot

agreeing to that inspection).

S1.13.2 The report must:

(a) identify the current condition of the buildings on Lot 1 DP 590486 and:

(b) if appropriate, recommend measures that could be implemented by the owner of that lot, to minimize the impacts of blasting on the buildings located on the lot; and

(c) recommend the measures that could be taken by the Applicant to minimize the impacts of any blasts undertaken at the Quarry Site, including measures that could be taken in relation to the design of any blast.

S1.13.3 A copy of this report is to be provided to Council and the landowner prior to the commencement of blasting. The Applicant must implement any of the measures referred to in condition S1.13.2(c) as the Council (acting reasonably) requires, subject to the applicant obtaining the consent of the owner of Lot 1 DP 590486 for any measures that require that owner's consent.

S1.13.4 If the landowner of Lot 1 DP 590486 claims in writing that his/her buildings on this property have been damaged as a result of blasting from the approved operations, the Applicant shall within 1 month of receiving this request:

(a) commission a suitably qualified person, whose appointment has been approved by Council, to investigate the claim; and

(b) provide Council and the landowner with a copy of this report.

S1.13.5 If this independent investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant shall repair the damages to the satisfaction of Council.

S1.13.6 If the Applicant or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to Council for resolution.

S1.13.7 If the matter cannot be resolved within 21 days, Council shall refer the matter to an Independent Dispute Resolution

Process.

***Reason**: To ensure the blasting activities do not have an impact on the structure of the buildings on the subject land.*

S1.14 Blast Management Protocol

S1.14.1 A Blasting Management Protocol must be prepared to the satisfaction of DECCW, which will include details about:

(a) Compliance standards;

(b) Mitigation measures;

(c) Remedial action;

(d) Monitoring methods and program;

(e) Monitoring program for fly-rock distribution;

(f) Measures to protect underground utilities (e.g.: rising mains, subsurface telecommunication and electric cables), and livestock nearby;

(g) Notification of procedures for neighbours prior to detonation of each blast;

(h) Measures to ensure no damage by fly-rock to people (including people travelling on foot or in vehicles along adjoining or adjacent public roads), property, livestock and power lines.

S1.15 Blast Monitoring

S1.15.1 The Applicant shall:

(a) monitor any blasts and record the overpressure and peak particle velocity in accordance with the approved Blast Management Protocol (condition S1.14.1); and

(b) incorporate an additional off-site blast monitor at a location to be determined in consultation with Council, and

(c) include the results of the monitoring information as required by the EPA and in

the *Annual Environmental Management Report* (condition S6.2).

***Reason** : To ensuring blasting is undertaken in accordance with approved practices.*

S1.16 Time of Blasting

S1.16.1 Surface blasting operations on the Quarry Site may only take place between 10:00am and 4:00pm Monday to Friday inclusive.

S1.17 Dust Monitoring

S1.17.1 The monitoring of deposited dust shall be undertaken by an appropriately qualified independent consultant, certified by an appropriate body, on the Project Site and at two locations adjacent to the Project Site for a period of two (2) years following the commencement of operations.

S1.17.2 The location of the two monitoring sites shall be on the properties identified as R1 (Lot 1 DP 590486) and R2 (Lot 214 DP 44391), unless the owners of the lots concerned will not permit such monitoring within their land, in which case the Council shall nominate an alternative location or locations at which that monitoring shall take place.

S1.17.3 The monitoring gauge shall be set up in the locations referred to in condition S1.17.2 and shall be maintained in accordance with relevant dust monitoring standards.

S1.17.4 Following the initial three (3) years of dust monitoring (including one (1) year of monitoring prior to the commencement of operations at the Project Site) the results of that monitoring shall be reviewed in consultation with the Council.

***Reason** : To establish the extent of dust impacts associated with the operation of the quarry.*

S1.18 Dust Monitoring points

S1.18.1 The following points, referred to in the table below are identified for the purposes of monitoring and/or the setting of limits for the level of pollutants at the point.

Table 2 : Air quality monitoring points

Identification	Type of monitoring point	Description of location
R1	Ambient air monitoring	Lot 1 DP 590486
R2	Ambient air monitoring	Lot 214 DP 44391
Q1	Ambient air monitoring	The Project Site

S1.18.2 Requirement to monitor concentration of pollutants

(a) For each monitoring point specified below that is not owned by the Applicant, the Applicant must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in column 1. The Applicant must use the sampling method, units of measure and the sample frequency, specified opposite in the other columns.

Table 3 : Point R1

	Units of measure	Averaging Period	Sample frequency	Sample Method
Deposited dust *	g/m ^{2} /month	Month	continuous	NSW DECC AM-19 and AM-1
PM10	µg/m ^{3}	24 hour	Special frequency 1.	NSW DECC AM-18 and AM-1

** Assessed as insoluble solids as defined by AM-19*

(b) Special frequency 1 is defined as monitoring each sixth day per the NSW DECC sampling cycle for a minimum period of one year starting when the activity reaches the lesser of an annual throughput of 30,000 tonnes of product per annum or 1,100 truckloads of product per annum, and continuing until one full year of monitoring where no exceedence of the concentration limits (which is attributable to the quarry) is recorded whilst the activity is above the lesser of either an annual throughput of 30,000 tonnes of

product per annum or 1,100 truckloads of product per annum.

(c) Following one full year of monitoring where no exceedence of the concentration limits is recorded the need for ongoing PM10 dust monitoring would be reviewed in consultation with the Council.

(d) In lieu of PM_{10} monitoring when activity exceeds 30,000 tonnes of product per annum or 1,100 truckloads of product per annum, Council will consider, upon the request of the Applicant, the following alternative:

(1) Sealing the full length of the internal access road with bitumen, or

(2) Agreeing to treat the full length of the internal access road with a dust suppressant (e.g. *Coherex*, *DustBlock* or equivalent) in accordance with the manufacturers' recommendations.

(e) PM10 monitoring may however still be required in accordance with the above, upon receipt of any substantiated complaint about dust from the occupier of Residence R1, which is verified by a deposited dust reading exceeding 4g/m^2 /month.

Table 4 : Point R2 and Q1

	Units of measure	Averaging Period	Sample frequency	Sample Method
Deposited dust *	g/m^2 /month	Month	continuous	NSW DECC AM-19 and AM-1

** Assessed as insoluble solids as defined by AM-19*

(f) The monitoring of deposited dust shall be undertaken for a minimum period of one (1) year prior to, and two (2) years

following, the commencement of operations. The location of the monitoring sites shall be per the table of monitoring locations, unless alternative locations are approved by Council in accordance with condition S1.17.2. Following the initial two (2) years of operation the need for ongoing dust monitoring would be reviewed in consultation with the Council.

Reason *: To establish the extent of dust impacts associated with the operation of the quarry.*

S1.18.3 Concentration limits

(a) For each monitoring/discharge point specified in the table below, the concentration of a pollutant discharged at that point, must not exceed the concentration limit specified for that pollutant in the table.

Table 5 : Point R1

Pollutant	Units of measure	Concentration limit
PM_{10}	$\mu g/m^3$	50*

* *Excludes data obtained during periods of regional pollution events such as dust storms and bushfires. This requirement does not apply if location R1 is applicant owned or an agreement which the Council considers is suitable is in place between the Applicant and the owner of R1*

S1.18.4 Monitoring records

(a) The results of any monitoring required to be conducted by this Notice of Determination must be recorded and retained as set out in this condition.

(b) All records required to be kept by this Notice of Determination must be:

(1) in a legible form, or in a form that can readily be reduced to a legible form;

(2) kept for at least 4 years after the monitoring or event to which they relate took place; and,

(3) produced in a legible form to any Council officer who asks to see them.

(c) The following records must be kept in respect of any samples required to be collected for the purposes of this Notice of Determination:

(1) the date(s) on which the sample was taken;

(2) the time(s) at which the sample was collected;

(3) the point at which the sample was taken; and

(4) the name of the person who collected the sample.

***Reason** : To ensure there are adequate records maintained and available for audit by the consent authority.*

S1.19 Dust Deposition Criteria

S1.19.1 The Applicant shall ensure that dust levels generated by the approved activities do not exceed the levels identified in Table 6.

Table 6 : Long-term impact assessment criteria for deposited dust

Residence	Averaging Period	Maximum increase in deposited dust level	Maximum total deposited dust level
R1 (Lot 1 DP 590486)	Month	2 g/m ^{2} /month	4 g/m ^{2} /month
R2 (Lot 214 DP 44391)	Month	2 g/m ^{2} /month	4 g/m ^{2} /month

***Note** : Deposited dust is assessed as insoluble solids as defined by Standards Australia, 2003, AS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter – Gravimetric Method .*

Reason *: To ensure that the long-term impact assessment criteria for deposited dust does not exceed these criteria.*

S1.20 Dust Mitigation

S1.20.1 The Applicant shall undertake to strengthen the pavement to appropriate engineering design standards- and bitumen seal the carriageway of Timor-Crawney Road (labelled as Waverley Road in Figure 2.1 of the Environmental Impact Statement) between the Project Site entrance and Starrs Crossing (approximately 700m in length). Such work shall be completed prior to the haulage of limestone products (other than for construction purposes) from the Project Site. This work shall be undertaken in accordance with the engineering requirements of the Council.

S1.20.2 The Applicant shall seal the intersection of the Project Site access road with Timor-Crawney Road for a distance of 20m inside the property boundary. This work shall be undertaken in accordance with the engineering requirements of the Council.

S1.20.3 The Applicant shall implement dust management measures to minimise the emission of dust from the Project Site and which include but are not limited to the following.

(a) Covering of trucks transporting material from the Project Site as soon as practicable after loading and prior to leaving the Project Site;

(b) Restricting vehicle speeds on internal access roads / tracks to 20km/hr;

(c) Watering of the Project Site access road and active areas within the stockpiling and handling area;

(d) Installation of a cover over the conveyor;

(e) Use of misting water sprays or similar during crushing operations and on the product conveyor, particularly at any transfer points;

(f) Wherever possible, stripping soil material with sufficient moisture content to minimise dust generation and during appropriate wind conditions; and

(g) Utilisation of a drill rig, with water

injection or a dust collection system, when undertaking any drilling on the Project Site.

***Reason** : To minimise the potential dust impact.*

FLORA AND FAUNA

S1.21 Threatened Species

S1.21.1 Clearing of about 6 ha of *White Box – Yellow Box – Blakely's Red Gum Woodland* EEC vegetation on the Project Site is required to be offset as per the 'Principles for the use of biodiversity offsets in NSW' (DECC 2008).

S1.21.2 Due to the planned permanent change to biodiversity within the area of 5.85 hectares that will be disturbed or eliminated by the proposed development, the parts of the Project Site outside of that area will either be:

(a) reserved in perpetuity by a conservation agreement and managed for conservation; or

(b) protected by the registration of a public positive covenant and/or a restriction on the use of land (in favour of the Council); as elected by the Council in consultation with the DECCW, requiring the management of the Project Site, in accordance with the BMP referred to in condition S5.5.

S1.21.3 Prior to commencement of any vegetation clearing, the Applicant must submit to the DECCW for consideration and acceptance the proposed biodiversity offset. No clearing may occur prior to DECCW advising the Council that the offset is acceptable.

S1.21.4 Prior to any clearing the appropriate size and number of hollow bearing trees to be removed must be recorded and the same number of nesting boxes of appropriate sizing must be installed in similar vegetation within the Project Site. The nesting box design chosen must reflect the size of hollows removed, with microbat nesting boxes used to replace small hollows, and Squirrel Glider nesting boxes to replace medium sized hollows.

S1.21.5 Prior to clearing, hollow bearing trees must be observed by an appropriately trained or qualified person to determine if hollow bearing fauna are present. Hollow bearing trees in use must be marked and surrounding vegetation cleared several days prior to

the removal of the hollow bearing trees. This would be done to promote the vacation of any hollows in use.

S1.21.6 A suitably trained or qualified person must also be present during the felling the identified hollow bearing trees to provide assistance with the care of any injured fauna.

S1.21.7 Any animals found would need to be checked, and details of the species, number, condition (age class, pregnant or lactating females etc) must be recorded and the details provided to the NSW Wildlife Atlas [*http://wildlifeatlas.nationalparks.nsw.gov.au/wildlifeatlas/about.jsp*] and to Council within three (3) months of the clearing event.

S1.21.8 The Applicant must prepare, in consultation with a qualified ecologist, a plan for the washing of vehicles and machinery that have worked in soil offsite. This is to be implemented to prevent machines and vehicles bringing weeds and pest species onto the Project Site.

S1.21.9 An annual inspection is to be made by persons whose qualifications and/or experience to undertake such inspections, have been approved by Council, during each of the first five (5) years of operation of the quarry of the nesting boxes placed on the Project Site, and also of the health of the planted White Box, Yellow Box and Bundy seedlings. The inspection report must include a review of the condition and use of the nesting boxes. Any planted White Box, Yellow Box and Bundy trees that are found to have died are to be replaced, with any actions taken to help ensure that the new plantings have a better chance of becoming established.

***Reason** : To ensure adequate measures are taken to protect native flora and fauna.*

S1.22 Minimal Clearing

S1.22.1 The Applicant shall ensure that no native vegetation clearing is undertaken (clearing being defined as: cutting down, felling, thinning, logging or removing native vegetation, killing, destroying, poisoning, ring-barking, uprooting or burning native vegetation) on any part of the Project Site outside the approved areas.

S1.22.2 Where clearing is required it must be to the minimal extent necessary.

***Reason** : To ensure a minimal amount of native vegetation is cleared for the purpose of the development.*

HERITAGE AND LANDSCAPE FEATURES

S1.23 Aboriginal Cultural Heritage

S1.23.1 If human remains are located all works must halt in the immediate area to prevent any further impacts to the find or finds. The local police, the Aboriginal community and DECCW are to be notified.

S1.23.2 If the remains are found to be of Aboriginal origin and the police consider the site not an investigation site for criminal activities, DECCW should be notified and works are not to resume in the designated area until approval in writing is provided by DECCW.

S1.23.3 In the event that a criminal investigation ensues works are not to resume in the designated area until approval in writing from the Police and DECCW.

S1.23.4 If Aboriginal cultural objects are uncovered due to the development activities the following actions must be undertaken:

(a) all works must halt in the immediate area to prevent any further impacts to the find(s);

(b) The discovery must be reported to the National Parks and Wildlife Service immediately;

(c) A suitably qualified archaeologist and Aboriginal community representatives must be contacted to determine the significance of the find(s);

(d) If required by DECCW, the site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) together with the management outcome for the site; and

(e) The Aboriginal community representatives shall be consulted to develop and implement management strategies for the sites, with all information required for informed consent being given to the representatives for this purpose.

S1.23.5 All reasonable efforts must be made to avoid impacts to Aboriginal Cultural Heritage values at all stages of the development works.

S1.23.6 If impacts are unavoidable, mitigation measures are to be negotiated with the Aboriginal community and DECCW.

***Reason** : To ensure adequate measures are taken to protection items of Aboriginal cultural heritage.*

S1.24 Linear Stone Feature

S1.24.1 The Applicant shall conserve the remainder of the linear stone feature that has been identified on the Project Site that is not required to be disturbed as part of the approved operations.

***Reason** : To ensure that no further disturbance of the feature occurs (other than that within the approved operational areas).*

ROADS AND VEGETATION

S1.24A Location of Roads

S1.24A.1 No road will pass within 5 metres of the outer edge of any stand of *Xanthorrhoea glauca* or *Ficus rubiginosa* which are located outside of the boundaries of the Quarry Site.

S1.25 Cave Discovery Protocol

S1.25.1 On discovery of a cave or a void larger than 0.5 m in diameter within the Project Site by any means, the Applicant shall immediately implement the Cave Discovery Protocol in Schedule 4 of these conditions.

***Reason** : To ensure that measures are taken to protect karst features and dependant ecosystems.*

ADDITIONAL PROCEDURES FOR AIR QUALITY AND NOISE MANAGEMENT

S1.26 Notification of Landowners

S1.26.1 If the results of the air quality or noise monitoring required in this consent identify that the air pollution and/or noise generated by the development is greater than any of the air quality or noise criteria specified in this consent, then the Applicant shall notify the Council and the affected landowner accordingly, take all necessary measures to reduce such exceedance and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the relevant air quality and/or noise criteria .

S1.27 Independent Review

S1.27.1 If a landowner considers the development to be exceeding the air quality and/or noise criteria specified in this consent then

he/she may ask the Applicant in writing for an independent review of the air pollution and/or noise impacts of the development on his/her land. If the Applicant does not agree that an independent review should be undertaken, such requests shall be referred to the Council for determination.

S1.27.2 If the Council is satisfied that an independent review is warranted, the Applicant shall within 3 months of the Council advising that an independent review is warranted:

(a) consult with the landowner to determine his/her concerns;

(b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Council, to conduct air quality and/or noise monitoring on the land, to determine whether the development is complying with the relevant air quality and/or noise criteria specified in this consent; and

(c) give the Council and landowner a copy of the independent review.

S1.27.3 If the independent review determines that the development is complying with the relevant air quality and/or noise criteria specified in this consent, then the Applicant may discontinue the independent review with the approval of the Council.

S1.27.4 If the independent review determines that the development is not complying with the relevant air quality and/or noise criteria specified in this consent, then the Applicant shall:

(a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the development complies with the relevant air quality and/or noise criteria; and

(b) conduct further air quality and/or noise monitoring to determine whether these measures ensure compliance; or

(c) secure a written agreement with the landowner to allow an exceedance of the air quality and/or noise criteria specified in this consent, to the satisfaction of the

Council.

S1.27.5 If the additional monitoring referred to above subsequently determines that the development is complying with the relevant air quality and/or noise criteria specified in this consent, then the Applicant may discontinue the independent review with the approval of the Council.

S1.27.6 If the measures referred to above do not achieve compliance with a noise land acquisition criteria of 40dB(A) LAeq(15 minute), and the Applicant cannot secure a written agreement with the landowner to allow this exceedance within 3 months, then the Applicant shall, upon receiving a written request from the landowner, acquire the landowner's land in accordance with the procedures in Condition S1.28 of this consent.

S1.27.7 If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the Council for resolution.

S1.28 Land Acquisition

S1.28.1 Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant shall make a binding written offer to the landowner based on:

(a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the approved operations, having regard to the:

(1) existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and

(2) presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date;

(b) the reasonable costs associated with:

(1) relocating within the Upper

Hunter local government area, or to any other local government area determined by the Council;

(2) obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and

(c) reasonable compensation for any disturbance caused by the land acquisition process.

S1.28.2 However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Council for resolution.

S1.28.3 Upon receiving such a request, the Council shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired.

S1.28.4 If either party disputes the independent valuer's determination, then the independent valuer should refer the matter back to the Council.

S1.28.5 Upon receiving such a referral, the Council shall appoint a panel comprising the:

(a) appointed independent valuer;

(b) Council and/or nominee/s; and

(c) President of the Law Society of NSW or nominee, to consider submissions from both parties, including meeting with the parties individually if requested, and to determine a fair and reasonable acquisition price for the land, and/or the terms upon which the land is to be acquired.

S1.28.6 Within 14 days of receiving the panel's determination, the Applicant shall make a written offer to purchase the land at a price not less than the panel's determination.

S1.28.7 If the landowner refuses to accept this offer within 6 months of the date of the Applicant’s offer, the Applicant's obligations to acquire the land shall cease, unless otherwise agreed by the Council.

S1.28.8 The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer, panel, or the Council and the costs of determination referred above.

S1.28.9 If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision, and registration of the plan at the Office of the Registrar-General.

DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE

S1.29 General Terms of Approval

S1.29.1 The Applicant shall comply with the General Terms of Approval issued by the Department of Environment and Climate Change as contained in Schedule 2 of these conditions.

HEALTH AND BUILDING CONDITIONS

S1.30 Site Amenities

S1.30.1 Toilet facilities are to be provided, at or in the vicinity of the work site on which work involved in the erection or demolition of a building is being carried out, at the rate of one toilet for every 20 persons or part of 20 persons employed at the site. The on-site sanitary facilities shall be available before the first inspection is carried out by Council.

***Reason** : Provide appropriate sanitary facilities for site workers.*

S1.31 Septic Tank Application

S1.31.1 A separate application shall be lodged with Council for approval of any septic tank installation.

***Reason** : Council requires a separate application for a septic tank.*

FURTHER DEVELOPMENT CONSENT REQUIRED

S1.32 Amenities, offices and other structures

S1.32.1 Further development consent is required for the erection of amenities, office building and other proposed structures associated with the Project Site. The applicant shall submit all relevant forms, plans, specifications and fees and ensure that no

work in relation to such structures is commenced until development consent and a construction certificate has been issued.

ROADS AND TRAFFIC AUTHORITY

S1.33 General

S1.33.1 Subject to condition S1.38, quarrying work at the Project Site shall not commence operation until the following bridges are repaired, replaced or otherwise modified so as to have the structural capacity to support laden product trucks of a weight of 42.5 tonnes:

(a) Barsham Bridge;

(b) Scotts Bridge; and

(c) Timor Bridge.

S1.33.2 Notwithstanding the above condition, the applicant shall prepare a traffic management plan for the construction phase of the project. This plan must be prepared to Council's requirements and should address the operation of the intersection of the New England Highway and Haydons Lane for vehicles engaged in construction or infrastructure work at the Project Site, before quarrying work commences.

DEPARTMENT OF INDUSTRY & INVESTMENT

S1.34 General

S1.34.1 The applicant shall obtain and hold a valid mining lease and appropriate licence.

S1.34.2 The operator shall provide annual production data as requested by the Mineral Resources Division of the Department of Industry & Investment.

S1.34.3 The applicant shall ensure that appropriate measures are taken to exclude livestock from the Project Site.

***Reason** : To ensure compliance with the requirements of the Department of Industry & Investment.*

S1.35 Subdivision of Project Site

S1.35.1 Prior to the commencement of any excavation work on the site, separate development consent is required to be issued for the subdivision of Lot 31 in DP 748766 to create a separate lot for the

Project Site.

S1.35.2 Any mining lease granted by the Department of Industry and Investment, in response to mining lease application No. 315, must comply with section 62 of the *Mining Act* 1992, in relation to the minimum distance between the eastern boundary of the mining lease and any adjoining or adjacent dwelling houses, gardens and improvements.

S1.36 Controlled Grazing Within Project Site

S1.36.1 Except where permitted by the BMP (as referred to in condition S5.2(c) and S5.5), no grazing (whether of sheep, cattle or other introduced livestock) and no agricultural activities shall take place within the boundaries of the Project Site during the period in which the quarry is in operation or in which the rehabilitation of the Project Site is being undertaken.

S1.36.2 This condition does not apply to the stock passage route, being the area referred to in condition S5.5(b)(iv). However, the stock passage route must be fenced to prevent stock, while passing along the stock passage route, from entering the remainder of the Project Site.

S1.36.3 A restriction on the use of land within the Project Site and/or a public positive covenant (as nominated by the Council), shall be registered against the title to the new lot created for the Project Site, recording the restriction on grazing and agriculture referred to in condition S1.36.1.

S1.37 No Excavation of Lower Chert Band

S1.37.1 No excavation of limestone is to take place at or below the level of the lower chert band, and the applicant must take all measures required to ensure that the chert band is not penetrated by any excavation work within the Project Site.

S1.37.2 Prior to the commencement of any excavation work on the Project Site, the *Lower Chert Band Management Plan* shall be prepared by the Applicant and approved by the Council, as specified in conditions S1.2.2 and S1.2.3.

S1.38 Starrs Bridge and Heavy Vehicle Bypass

S1.38.1 No excavation work within the Project Site (other than excavation work required to provide road construction materials for the Council to upgrade bridges and/or roads to be utilised by vehicles travelling to and from the Project Site) shall commence until a heavy vehicle bypass is constructed at Starrs Crossing on the Timor-Crawney Road to enable the passage of vehicles of maximum gross weight limit 42.5 tonnes, to the satisfaction of the Council.

S1.38.2 Following the Council’s monthly inspection program for

bridges / bypasses (or following a rainfall event exceeding 25mm in less than 24 hours), the quarry operator shall provide any road base materials as, when and where required for the maintenance of the heavy vehicle bypass at no cost to the Council.

S1.38.3 Notwithstanding the inspections referred to in S1.38.2, the quarry operator shall immediately report any deterioration in the standard or trafficable condition of the heavy vehicle bypass to the Council.

S1.38.4 The bridge known as Starrs Bridge, located on the Timor Crawney Road, is to be structurally repaired so as to permit the passage of vehicles of maximum gross weight limit 42.5 tonnes. The proponent shall make suitable arrangements with Council for a contribution of up to the value of $40,000 towards the cost of such repairs, within 12 months of commencement of haulage of product from the quarry. The Council shall undertake the necessary repairs within 18 months of commencement of haulage of product from the Project Site.

S1.39 Drainage of the Quarry

S1.39.1 (a) Drainage of concentrated water, being water concentrated in flow, from the excavation area and Stockpile and Handling Area, into the karst as a result of modified drainage must not occur; and

(b) Any water which has the potential to drain into the karst must be filtered, to the satisfaction of the Council, to avoid discharge of sediments and other contaminants into the karst.

S1.40 Stockpiling and Handling Area

S1.40.1 The stockpiling and handling area (SHA) shall be located in the area nominated on the Preferred Project Layout Plan and shall have an area not exceeding 0.35ha.

S1.40.2 Clean water flows upslope of the SHA shall be diverted around the SHA and all runoff from within the SHA shall be directed to the sediment retention basin such as through catch banks or drains.

S1.41 Survey of Disturbance Areas

S1.41.1 The Applicant shall survey the boundary of the extraction area, stockpiling and handling area and appropriately mark these areas prior to the commencement of any works in these areas.

SCHEDULE 2

DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE

GENERAL TERMS OF APPROVAL

ADMINISTRATIVE CONDITIONS

A1. Information supplied to the EPA

A1.1 Except as expressly provided by these general terms of approval, works and activities must be carried out in accordance with the proposal contained in:

Proposed Timor Limestone Quarry Environmental Impact Statement prepared by R.W.Corkery & Co Pty. Limited, dated November 2008.

LIMIT CONDITIONS

L1. Pollution of waters

L.1.1 Except as may be expressly provided by a licence under the *Protection of the Environment Operations Act* 1997 in relation of the development, section 120 of the *Protection of the Environment Operations Act* 1997 must be complied with in connection with the carrying out of the development.

L2 Operational Noise limits

L2.1 Noise from the premises must not exceed the sound pressure level (noise) limits presented in the Table below. Note the limits represent the sound pressure level (noise) contribution, at the nominated receiver locations in the table.

Operational Phase Noise Limits (dB(A))

Noise Assessment Location	Daytime (7am to 6pm)
	$L_{Aeq(15\ minute)}$
Residence R2 “Caves Ridge”	35

1. Receiver locations identified in Figure 1 of the Proposed Timor Limestone Quarry, Noise and Vibration Assessment, Specialist Consultant Studies, Compendium, Part 6, prepared by Spectrum Acoustics (October 2008).

Definition:

L_{Aeq} is the equivalent continuous noise level – the level of noise equivalent to the energy- average of noise levels emitted by the premises over the stated measurement period.

L2.2 Noise from the premises is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise level limits in Condition

L2.1 unless otherwise stated.

Where it can be demonstrated that direct measurement of noise from the premises is impractical, the DECC may accept alternative means of determining compliance. See Chapter 11 of the NSW Industrial Noise Policy.

L3. Hours of operation

L3.1 All construction work and operation of plant and equipment (including use of trucks and/or loaders) at the premises must only be conducted between 0700 and 1700, Mondays to Fridays and 0700 to 1700 on Saturdays with no operations on Sundays and public holidays.

L4. Blasting

Overpressure

L4.1 The overpressure level from blasting operations on the premises must not:

a) Exceed 115dB (Lin Peak) for more than 5% of the total number of blasts over a period of 12 months; and

b) Exceed 120dB (Lin Peak) at any time.

Ground vibration (ppv)

L4.2 Ground vibration peak particle velocity from the blasting operations at the premises must not:

a) Exceed 5mm/s for more than 5% of the total number of blasts over a period of 12 months; and

b) Exceed 10mm/s at any time.

c)

when measured at any point within 1 metre of any affected residential boundary or other noise sensitive location such as a school or hospital.

L5. Waste

L5.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by a licence under the *Protection of the Environment Operations Act* 1997*.*

L5.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if it requires an environment protection licence under the *Protection of the Environment Operations Act* 1997.

OPERATING CONDITIONS

O1. Dust

O1.1 The premises must be maintained in a condition that minimises or prevents the emission of dust from the premises.

O1.2 Trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading.

O2. Stormwater/sediment control - Construction Phase

O2.1 Soil and water management controls must be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities in accordance with the requirements outlined in *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004).

O3. Stormwater/sediment control - Operation Phase

O3.1 Following the construction phase, stormwater management measures must be implemented to mitigate the impacts of stormwater run-off from and within the premises in a manner that is consistent with the Stormwater Management Plan for the catchment. Where a Stormwater Management Plan has not yet been prepared the measures should be consistent with the guidance contained in *Managing Urban Stormwater: Council Handbook* (available from the DECC).

Monitoring

U1 Noise Compliance Monitoring

U1.1 A noise compliance assessment shall be undertaken within three months of commencement of operational activities at the premises. The assessment shall be prepared by a suitably qualified and experienced acoustical practitioner and shall assess compliance with noise limits presented in L2.1. A report detailing the monitoring undertaken, the monitoring results, an assessment of compliance and any recommendations must be provided to DECC's Regional Manager - Hunter within twenty eight (28) days of the survey being completed.

Note: DECC may require additional noise compliance monitoring to be undertaken by the Applicant should the DECC consider the amenity of local residents is being impacted by noise from the premises.

MANDATORY CONDITIONS FOR ALL EPA LICENCES

If an Environment Protection Licence is granted the following mandatory conditions will apply:

Administrative conditions

A2. Fit and Proper Person

A2.1 The Applicant must, in the opinion of the EPA, be a fit and proper person to hold a licence under the *Protection of the Environment Operations Act* 1997, having regard to the matters in s 83 of that Act.

If an Environment Protection Licence is granted the following mandatory conditions will apply:

Other activities

This licence applies to all activities carried on at the premises.

Operating Conditions

O1 Activities must be carried out in a competent manner.

O1.1 Licensed activities must be carried out in a competent manner. This includes:

the processing, handling, movement and storage of materials and substances used to carry out the activity; and

the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of Plant and Equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licenced activity:

must be maintained in a proper and efficient condition; and
must be operated in a proper and efficient manner.

Monitoring And Recording Conditions

R1 Reporting Conditions

The Applicant must provide an annual return to the EPA in relation to the development as required by any licence under the Protection of the Environment Operations Act 1997 in relation to the development. In the return the Applicant must report on the annual monitoring undertaken (where the activity results in pollutant discharges), provide a summary of complaints relating to the development, report on compliance with licence conditions and provide a calculation of licence fees (administrative fees and, where relevant, load based fees) that are payable. If load based fees apply to the activity the Applicant will be required to submit load-based fee calculation worksheets with the return.

M4 Recording of pollution complaints

M4.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M4.2 The record must include details of the following:

the date and time of the complaint;
the method by which the complaint was made;
any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
the nature of the complaint;

the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
if no action was taken by the licensee, the reasons why no action was taken.

M4.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M4.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M5 Telephone complaints line

M5.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M5.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M5.3 This condition does not apply until 3 months after this condition takes effect.

REPORTING CONDITIONS

Annual Return documents

What documents must an Annual Return contain?

The licensee must complete and supply to the DECC an Annual Return in the approved form comprising:

(a) a Statement of Compliance; and

(b) a Monitoring and Complaints Summary.

Before the end of each reporting period, the DECC will provide to the licensee a copy of the form that must be completed and returned to the DECC.

Period covered by Annual Return

An Annual Return must be prepared in respect of each reporting, except as provided below

Note: The term “reporting period” is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Where this licence is transferred from the licensee to a new licensee:

(a) the transferring licensee must prepare an annual return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and

(b) the new licensee must prepare an annual return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

Where a licence is surrendered by the licensee or revoked by the DECC or Minister, the licensee must prepare an annual return in respect of the period commencing on the first day of the reporting period and ending on:

(a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or

(b) in relation to the revocation of the licence – the date from which notice revoking the licence operates.

Deadline for Annual Return

The Annual Return for the reporting period must be supplied to the DECC by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the ‘due date’).

Notification where actual load can not be calculated

Where the licensee is unable to complete a part of the Annual Return by the due date because the licensee was unable to calculate the actual load of a pollutant due to circumstances beyond the licensee’s control, the licensee must notify the DECC in writing as soon as practicable, and in any event not later than the due date.

The notification must specify:

(a) the assessable pollutants for which the actual load could not be calculated; and

(b) the relevant circumstances that were beyond the control of the licensee.

Licensee must retain copy of Annual Return

The licensee must retain a copy of the annual return supplied to the DECC for a period of at least 4 years after the annual return was due to be supplied to the DECC.

Certifying of Statement of Compliance and signing of Monitoring and Complaints Summary

Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

(a) the licence holder; or

(b) by a person approved in writing by the DECC to sign on behalf of the licence holder.

A person who has been given written approval to certify a Statement of Compliance under a licence issued under the *Pollution Control Act* 1970 is taken to be approved for the purpose of this condition until the date of first review this licence.

Notification of environmental harm

The licensee or its employees must notify the DECC of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

Notifications must be made by telephoning the DECC's Pollution Line service on 131 555.

The licensee must provide written details of the notification to the DECC within 7 days of the date on which the incident occurred.

Written report

Where an authorised officer of the DECC suspects on reasonable grounds that:

(a) where this licence applies to premises, an event has occurred at the premises; or

(b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

The licensee must make all reasonable inquiries in relation to the event and supply the report to the DECC within such time as may be specified in the request.

The request may require a report which includes any or all of the following information:

(a) the cause, time and duration of the event;

(b) the type, volume and concentration of every pollutant discharged as a result of the event;

(c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; and

(d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;

(e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;

(f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event;

(g) any other relevant matters.

The DECC may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the DECC within the time specified in the request.

General Conditions

Copy of licence kept at the premises or on the vehicle or mobile plant

A copy of the licence must be kept at the premises or on the vehicle or mobile plant to which the licence applies.

The licence must be produced to any authorised officer of the DECC who asks to see it.

The licence must be available for inspection by any employee or agent of the licensee working at the premises or operating the vehicle or mobile plant.

Department of Environment and Climate Change
January 2009

SCHEDULE 3

PRE-BLASTING PROTOCOL

Definitions

S3.1 In this Schedule 3 the following definitions are used, in addition to the definitions found in condition A2 of the Preamble to this consent:

“Nominated Expert Panel” means the Nominated Expert Panel established under the Cave Discovery Protocol in Appendix 1 to Schedule 4 of these conditions;

“ **Nominated Underground Fauna Expert** ” means the person appointed under condition S3.8;

“ **Protected Species** ” means a species which is:

(a) an underground restricted distribution species, or

(b) a rare or significant species

“Rare or Significant Species” means a species of stygofauna or troglofauna which is:

(a) a member of a threatened species, population or ecological community as defined in the *Threatened Species Conservation Act* 1995 (NSW) *;*

(b) a member of a threatened species, population or ecological community as defined in s 220B of the *Fisheries Management Act* 1994 (NSW); or

(c) a member of a listed threatened species or listed threatened ecological community as defined in the *Environment Protection and Biodiversity Conservation Act* 1999 (Cth);

“Sampling Protocol” means the sampling protocol approved under condition S3.14;

“Stygofauna” means any aquatic species that spends its entire life or part of its life in groundwater;

“ **Troglofauna”** means any species that spends its entire life in caves and other subterranean habitats;

“ **Underground Fauna** ” means Stygofauna and Troglofauna; and

“Underground restricted distribution species” means any species of stygofauna or troglofauna which is found only within the quarry site.

Introduction

S3.2 This pre-blasting protocol is intended to provide an adaptive management approach to the presence of any caves, voids and fissures or other material of geodiversity significance in the quarry limestone and any Protected Species in them, in advance of blasting within the Quarry Site.

S3.3 The protocol provides for the successive investigation of areas which are to be quarried for the presence of cracks, fissures, large voids or other material of geodiversity significance and water, together with the Underground Fauna that inhabit these environments. The protocol outlines the frequency of sampling to be undertaken and the criteria for measures to be taken in response to the observations made.

S3.4 The environmental impacts from quarrying in limestone include:

(a) passage of a pressure wave through the rock and voids in the rock during blasting;

(b) fracturing of rock within the area to be quarried and in neighbouring rock from blasting;

(c) removal of rock as rock product; and

(d) rearrangement of groundwater drainage by rock removal and fracturing.

S3.5 There are five potential classes of impact from blasting on any population of Underground Fauna that may be present:

(a) Underground Fauna population density and diversity are unaffected by blasting and by nearby rock removal;

(b) a decline in Underground Fauna population density and diversity occurs from the impacts of blasting and nearby rock removal;

(c) an increase in Underground Fauna population density and/or diversity occurs from blasting impacts and nearby rock removal;

(d) no Underground Fauna survive because the limestone rock in which they live is removed;

(e) an increase occurs in the populations of non-subterranean species, which may out-compete or prey on subterranean species.

Objectives

S3.6 The objectives of this pre-blasting protocol are:

(a) to ensure that no extinction of protected species occurs as a result of quarrying activities;

(b) to ensure that impact on any rare or significant species of underground fauna is minimised by ensuring that quarrying activities are carried out in a manner which does not adversely impact upon the habitat or population of such fauna (within the naturally occurring range);

(c) to allow quarrying to take place where it can be demonstrated that objectives (a) and (b) can be met by quarrying activities; and

(d) to identify caves, voids, fissures or other material of geodiversity significance.

For clarity, this protocol does not require mitigation of impacts on underground species which are not Protected Species.

Adaptive Management Approach

S3.7 The adaptive management principles to be implemented by this protocol are as follows:

(a) the nature of existing Underground Fauna and their habitats, both within the Quarry Site and at neighbouring control sites, is clearly understood through pre-blasting monitoring;

(b) post-blasting monitoring is undertaken to understand what impact blasting has had at the Project Site and reference monitoring is undertaken at the control sites;

(c) agreed trigger levels in the monitoring results are established to identify when adaptive management measures must be undertaken; and

(d) if any Protected Species of subterranean fauna is identified in an area that may be impacted upon by quarrying activities, quarrying activities must cease until it can be demonstrated that quarry activities (in whatever modified form) are unlikely to cause that species to become extinct.

Nominated underground fauna expert

S3.8 (a) The quarry owner must appoint a person with appropriate expertise and

knowledge of Troglofauna and Stygofauna to the position of Underground Fauna Expert. That person must be selected by the quarry operator from a list of three appropriately qualified experts nominated by the Nominated Expert Panel.

(b) The Underground Fauna Expert may be (but need not) be a member of the Nominated Expert Panel.

(c) The Underground Fauna Expert may be (but need not) be the GDE expert referred to in condition S1.12.3.

(d) The Underground Fauna Expert holds that position until that person resigns, or is replaced by decision of the Nominated Expert Panel (acting reasonably).

(e) If the position of Underground Fauna Expert falls vacant, the quarry operator must, as soon as practicable, appoint a new Underground Fauna Expert by the same process as provided in paragraph (a) above.

Pre-Blasting Monitoring and Trigger Levels

S3.9 The intent of pre-blasting monitoring is to establish what cracks, fissures, large voids, water, and underground fauna are present on the quarry site, prior to a blasting event.

S3.10 Similar assessment procedures should be used for pre-blasting and for post-blasting monitoring, to allow the results from these two phases of monitoring to be compared effectively.

S3.11 To achieve the proposed outcomes stated above, the aims of pre-blasting monitoring and investigation should be:

(a) to identify the nature of the Underground Fauna; and

(b) to identify any caves, voids, fissures and other material of geodiversity significance intersected by pre-blasting drilling;

within the Quarry Site.

S3.12 Achieving the aim in S3.11(a) will require comparison of the Underground Fauna of the Quarry Site with the Underground Fauna at neighbouring sites and that at sites at greater distance from the quarry (regional and state-wide sites).

S3.13 Triggers for taking actions are included within the assessment protocol, as noted below.

Sampling Protocols

S3.14 (a) The quarry owner, in consultation with the Nominated Underground Fauna Expert, must develop and submit to the Council for approval a sampling protocol for underground species (both Troglofauna and Stygofauna). Monitoring under this Schedule must be in accordance with the sampling protocol and must not commence until the sampling protocol has been approved by Council.

(b) That protocol must take into account the principles outlined in "*Sampling Groundwater Fauna: Efficiency of Rapid Assessment Methods Tested in Bores in Eastern Australia*", Hancock and Boulton "*Freshwater Biology (2009) 54, 902-917*".

(c) The sampling protocol submitted by the quarry owner to the Council must use best industry practice, and shall be designed to maximise the likelihood that Protected Species will be discovered.

(d) The sampling protocol must provide that samples are to be collected using at least two different methods in each sample location. For sampling above the water table, trap and scrape methods should be used. For sampling below the water table, baited traps, Stygofauna sampling nets, or pumping should be used. Sampling methods are outlined in Hancock and Boulton (2009, above), WA EPA (2003, 2007).

(e) The sampling protocol must provide for monitoring of key environmental variables that can indicate a potential decline in habitat quality. These variables must be measured at the time of any fauna sampling. As a minimum, the following variables must be measured:

(i) the biotic community, and in particular:

(1) Stygofauna;

(2) Troglofauna; and

(3) organic food sources for the above including as indicated by:

- plant material including roots;

- microinvertebrates greater than 50 microns in size; and

- dissolved organic carbon in groundwater.

(ii) for groundwater bores – water level, water temperature, electrical conductivity, pH, and dissolved oxygen concentration;

(iii) for monitoring sites which do not sample below the water table – temperature, humidity, and (for sites which are bores) depth of sampling.

(iv) any biotic data obtained from groundwater monitoring carried out under S1.12 should be reported together with the data recorded under this condition.

(f) The sampling protocol must identify sampling sites selected by the Nominated Underground Fauna Expert in accordance with the following criteria:

(i) A minimum of six sampling sites must be identified within the Quarry Site (**“the Quarry Monitoring Sites”**). These locations must be monitored at various depths within the limestone, including two monitoring sites within saturated limestone, if it exists, on the Quarry Site.

(ii) A minimum of six “control” sites must be identified in an area which is not likely to be impacted by quarrying operations (**“the Control Monitoring Sites”**). These locations can be located inside the Project Site boundary, but must not be within the vicinity of the Quarry Site, and should be at a distance where they are not impacted by blasting. At least two of these sites must allow groundwater sampling. Control sites may be caves or boreholes.

(g) All sampling bores must be in locations where they will not be destroyed or blocked by quarrying to enable monitoring to take place at the same locations throughout the life of the project to detect any declines in fauna population.

Assessment Protocol

S3.15 Monitoring for species occurrence, abundance and habitat condition under the Sampling Protocol must occur on a three-monthly basis for at least twelve months prior to the first planned blast and subsequently at intervals of three months during the period in which excavation works take place in accordance with this development consent. Further samples should be obtained immediately following heavy rainfall or during prolonged drought, to provide an indication of the natural range in abundance and diversity of Underground Fauna present.

S3.16 Prior to the first blast being undertaken at the Quarry Site, observations must be made down the explosive drill-holes, with a down-hole camera, to determine

what cracks, fissures, large voids and water are present on the project site.

S3.17 Each round of fauna sampling must include samples collected from all sampling sites. Sampling of fauna outside the impact area must be carried out at the same time as sampling within the impact area, must be carried out using similar methods, and must collect the same number of samples.

S3.18 All species of Underground Fauna collected through sampling under the Sampling Protocol must be identified to species level using morphological based taxonomic techniques and thereafter, if necessary, molecular based taxonomic techniques.

S3.19 Each species observed through sampling under the Sampling Protocol considered to be Underground Fauna must be assessed to determine whether it is a Rare or Significant Species.

S3.20 If a Protected Species is identified within the Project Site by either of the techniques referred to in condition S3.18, the depth, occurrence and geographical distribution of the species must be identified by further sampling, such as in further bores and in other underground locations, including caves.

S3.21 If a Protected Species is detected through monitoring all quarrying operations must cease immediately. Quarry operations must not resume until the Nominated Expert Panel, in consultation with the Nominated Underground Fauna Expert, determines that the continuation of quarrying operations is unlikely to cause any species to become extinct.

S3.22 If a Protected Species is detected through monitoring which is not an Underground Restricted Distribution Species, but is a Rare or Significant Species, then the following provisions apply:

(a) The Nominated Underground Fauna Expert must, following each round of monitoring after quarrying has commenced, analyse the results of monitoring of variables under the Sampling Protocol to determine whether, having regard to monitoring results from the Quarry Monitoring Sites and the Control Monitoring Sites, quarry operations appear to be causing changes in habitat and/or population of that Rare or Significant Species which is outside the natural range for that species; and report his or her conclusions and reasons for so concluding to the Nominated Expert Panel.

(b) If, in the opinion of the Nominated Expert Panel, in consultation with the Nominated Underground Fauna Expert, monitoring discloses that quarry operations appear to be causing changes in habitat and/or population of a Rare or Significant Species which is outside the natural range for that species, the Nominated Expert Panel can direct the quarry operator to temporarily cease quarrying operations.

(c) If a direction is given under paragraph (b) above, quarrying must cease within a period of five days.

(d) Where quarrying ceases under this condition, monitoring in accordance with the Sampling Protocol must continue.

(e) Where quarrying has been stopped as a result of this condition, quarrying must not recommence until the Nominated Expert Panel, in consultation with the Nominated Underground Fauna Expert, is of the opinion that monitoring has confirmed that the affected habitat and/or population has returned to a level within the natural range for the relevant variables.

S3.23 Following the first assessment, underground fauna must be assessed (as specified in conditions S3.17 to S3.22 above) every three months.

Post-Blasting Monitoring

S3.24 The intent of post-blasting monitoring is to determine whether underground species diversity and abundance has increased, decreased or remained the same in the monitoring bores following a blasting effort. This monitoring will occur as part of the three-monthly monitoring cycle. The timing of a three-monthly monitoring event may be moved by up to six weeks to be closer to the period following a blast.

S3.25 In addition to Troglofauna and Stygofauna, records should be kept of any non-subterranean taxa collected in samples. This is to assess the impact and likelihood of invasions of terrestrial fauna occurring through fissures opened up to the surface.

Reporting

S3.26 The results of Underground Fauna monitoring must be reported to the Council at 3 monthly intervals after the first monitoring is undertaken. Underground Fauna monitoring results will be reported to the Council at the same time as the results of the groundwater monitoring and sampling, undertaken in accordance with consent condition S1.12, are also reported to the Council.

S3.27 A copy of each underground fauna monitoring report must be forwarded to:

(a) the DECCW (or its successor in statutory responsibilities under the *Threatened Species Management Act* 1995 (NSW)); and

(b) in respect of any report which deals with protected species which are fish within the meaning of the *Fisheries Management Act* 1994 (NSW), the Department of Industry & Investment;
at the same time as the reports are submitted to the Council in accordance with S3.25.

S3.28 The cumulative results/data of the monitoring and sampling must be reported in the *Annual Environmental Management Report* (AEMR) [see Condition S3.2]. That is, the monitoring and sampling data from all previous years must be set out in a cumulative monitoring and sampling table for each subsequent AEMR for the life of the development.

S3.29 The AEMR must include a statement from the Nominated Underground Fauna Expert, who must review the annual data-set of monitoring under this Schedule (making any relevant comparisons with historical data taken from those bores) and shall summarise his or her findings. The Nominated Expert Panel must review the findings made by the Nominated Underground Fauna Expert and shall make recommendations about the manner in which the quarrying operations should continue on the Project Site, including recommendations about the way in which any impacts on Underground Fauna should be addressed.

S3.30 The Applicant must incorporate the recommendations referred to in condition S3.29 into each of the:

(a) Mining Operations Plan;

(b) Soil and Water Management Plan.

S3.31 The actions referred to in conditions S3.29 and S3.30 must be taken within two (2) months of the date on which the Nominated Underground Fauna Expert's recommendations are made to the quarry owner. The proposed amended Plans must be submitted by the quarry owner respectively to the Department (MOP) and the Council (SWMP) for approval within one (1) month of the quarry owner receiving those recommendations.

Identification of geodiversity material

S3.32 (a) All drill logs from drilling of bores prior to the commencement of extraction works, including monitoring bores drilled under any condition of this consent, must be provided to the Nominated Expert Panel within 1 month of the drilling operation.

(b) All core material from drilling of bores prior to the commencement of extraction works, including monitoring bores drilled under any condition of this consent, must be retained for a period of 2 months from the date of the drill. Upon request by the Nominated Expert Panel, the quarry operator must:

(i) permit inspection of that material by a member or members of the Panel; and

(ii) if, following inspection of drill logs and core material, the Panel (acting reasonably) determines that testing of core material should be conducted to enable the Panel to

provide any advice under para (c), arrange for transport of the relevant portion of core material to a facility where such testing may be carried out. Following any such testing, any remaining core material must be returned to the quarry owner.

(c) Following inspection of drill logs and core material, the Nominated Expert Panel may provide any advice which it considers appropriate to the Quarry Operator regarding the potential for discovery of caves, voids, or material of geodiversity significance (such as speleothems, fossils and sediments) during extraction which may trigger action under the Cave Discovery Protocol (Schedule 4).

References

EPA Environment Protection Authority (2003) *Guidance for the assessment of environmental factors (in accordance with the Environmental Protection Act 1986) Consideration of subterranean fauna in groundwater and caves during environmental impact assessment in Western Australia*. No. 54.

EPA Environment Protection Authority (2007) *Guidance for the assessment of environmental factors (in accordance with the Environmental Protection Act 1986) Sampling methods and survey considerations for subterranean fauna in Western Australia.* No. 54a.

Hancock, P.J. and Boulton, A.J. (2009) Sampling groundwater fauna: efficiency of rapid assessment methods tested in monitoring wells in eastern Australia. *Freshwater Biology,* 54, 902-917.

SCHEDULE 4

CAVE DISCOVERY PROTOCOL

S4.1 Within this Schedule 4 the following definitions are used, in addition to the definitions found in condition A2 of the Preamble:

"* cave *" means any void in the quarry limestone, whether open or filled in whole or part with sediment, with either:

(a) an average diameter of 1 metre; or

(b) where it is not feasible to ascertain average diameter (such as where the void is intersected by drilling), a height of at least 1.5m.

"*Nominated Expert*" means a member of the Nominated expert panel.

"* Nominated Expert Panel *" means the panel of experts

appointed as set out in Appendix 1 to this Schedule 4.

" **working day** " means a day of the week other than a Saturday, Sunday, public holiday or bank holiday.

Purpose of the Protocol

S4.2 This protocol specifies the actions to be taken in the situation that a cave is discovered during quarrying. The purpose of this protocol is to permit cave values such as cave morphology, cave sediments, secondary calcite (speleothems), cave organisms or fossils to be studied *in situ* or preserved for later study, *while* allowing quarrying to continue with minimal disruption.

S4.3 It is not proposed as part of this protocol that any caves discovered during quarrying will be preserved for recreational purposes. The protocol is intended to allow only for scientific examination of the contents of any cave discovered.

S4.4 It is assumed that if caves exist at the Quarry Site, they may be discovered by drilling for the placement of explosives or by removal of rock as part of the quarrying process.

Inspection following initial excavation

S4.5 (a) Following the first blast undertaken at the Quarry Site to create the first bench, and the removal of blasted material from the cleared section of the first bench, the quarry owner must permit the members of the Nominated Expert Panel who wish to do so to inspect the cleared section of the first bench.

(b) The quarry owner will give written notice to the Nominated Expert Panel either:

(i) immediately prior to the removal of the last of the blasted material from the first bench, stating in that notice the date on which the cleared section of the first bench will be open for inspection; or

(ii) give that notice when the cleared section of the first bench is open for inspection.

(c) The members of the Nominated Expert Panel who wish to inspect as referred to in paragraphs (a) and (b) must carry out that inspection within 7 working days of:

(i) the date nominated by the quarry owner in the notice given in paragraph (b)(i) as the date on which the cleared section of the first bench will be open for inspection; or

(ii) the date on which the quarry owner's notice is

given in accordance with paragraph (b)(ii).

(d) Any members of the Nominated Expert Panel who do not inspect as referred to in paragraph (a) within the period specified in paragraph (c), may not carry out an inspection under this condition.

(e) The members of the Nominated Expert Panel who inspect the cleared section of the first bench should include, as a minimum, and subject to the willingness of the experts concerned to participate in the inspection:

(i) at least one nominated expert with expertise in geology, caves and karst; and

(ii) at least one nominated expert with expertise in geomorphology, caves and karst.

(f) The purposes of the inspection are:

(i) to allow internal structures within the rock mass to be evaluated on a large scale;

(ii) to distinguish between surface karst features and internal karst features;

(iii) to determine whether the excavation has revealed the presence of other features of scientific interest such as bone-bearing sediments and palaeokarst deposits;

(iv) to determine (if practicable) the degree of openness of joints and the extent of solution along joints and other structures; and

(v) to make any other observations which the nominated experts consider relevant to considerations under this Protocol.

(g) Subject to the Nominated Experts, during their inspection, making or becoming aware of a discovery which falls within condition S4.6, the Nominated Experts conducting the inspection (acting reasonably) may make any directions they consider appropriate under condition conditions S4.10 to S4.12 of this Protocol.

(h) Regardless of whether or not any directions are made under (g), the Nominated Experts who participate in the inspection must report their findings to the Nominated Expert Panel within 10

working days of the date of the inspection.

(i) The Nominated Expert Panel must, within 7 working days of receiving the report referred to in subparagraph (h) meet to consider the results of the inspection and, subject to the findings of the Nominated Experts including a discovery which falls within condition S4.6, determine whether or not any directions are to be made under conditions S4.10-S4.12 of this Protocol. The Nominated Expert Panel must advise the quarry operator of its determinations within 2 working days of that meeting.

(j) Subject to the Nominated Experts who inspect the cleared section of the first bench making a discovery which falls within condition S4.6, and notifying the quarry owner of that fact during or immediately following the inspection, excavation operations at the quarry must not resume until either:

(i) the Nominated Expert Panel has advised the quarry owner of any directions made by it in accordance with this Protocol; or

(ii) a period of 15 working days has elapsed from the date of the inspection of the cleared section of the first bench by the nominated experts, without the Nominated Expert Panel advising the quarry owner that it has made any determinations or any directions.

(k) Once the Nominated Expert Panel advises of its determinations and directions, in accordance with paragraph (i), any directions made under paragraph (g) above cease to have effect.

General Discovery & Notification of Caves

S4.6 On discovery of:

(a) a cave, or

(b) a void larger than 0.5 m in diameter

within the Quarry Site by any means, quarry staff must notify the quarry duty manager, who will advise the quarry owner within 4 hours of discovery. The quarry owner must notify the members of the Nominated expert panel of the fact of the discovery within 2 working days.

Stop Work Criteria & Recording Information

S4.7 If the discovery is a cave then the cave will be sealed by covering with an impervious lightweight material and work will stop around the cave. Until an action from the options in condition S4.10 to condition S4.14 is completed, any blasting at the quarry must achieve a Peak Particle Velocity (PPV) of no more than 20 mm/s and must not take place at a distance less than 90m from the cave Before any blasting in accordance with this condition is carried out, the quarry operator shall satisfy the Council that the design of the blast has been reviewed and approved by an expert with appropriate qualifications in blast design.

S4.8 Information on the cave must be obtained to the degree that is feasible. This must include determining the extent of the cave, mapping the cave, and determining whether it contains sediment, bones, secondary calcite or other materials. Digital photographs will be obtained of the cave, if feasible. A scale must be used in the digital photographs.

S4.9 A record must be made on a register of discovered caves kept for this purpose of the location of the cave, the extent of the cave, a map of the cave and of the contents of the cave. Digital photographs will be appended to the register. Notifications made to experts and to the DECCW must be recorded in the register. The location of final disposal of material from the cave must be recorded in the register.

Courses of Action

S4.10 Following a notification being made under condition S4.6, the quarry owner must appoint a member of the Nominated Expert Panel (nominated expert) to review all observations made under conditions S4.7 to S4.9. The quarry operator must consult with the Nominated Expert Panel as to which nominated expert should be appointed to review these observations and must accept the recommendation of the Nominated Expert Panel. The Nominated Expert may co-opt other members of the Nominated Expert Panel to review the observations, where those other panel members have expertise that will be of benefit in the assessment of the observations. The observations must also be provided to the DECCW.

S4.11 If the observations provided to the Nominated Expert on the cave and its contents are, in the opinion of the Nominated Expert (acting reasonably), inadequate to determine the significance of the cave, the Nominated Expert may request that additional information (which it is practicable for quarry representatives to collect) is collected by quarry representatives. The Nominated Expert may also visit the Quarry Site to inspect the cave if the expert believes such a visit is appropriate.

S4.12 When observations which, in the opinion of the Nominated Expert, are adequate to determine the significance of the cave are provided to or made by the Nominated Expert, the Nominated Expert must, within 2 working days, initiate a course of action to deal with the discovery under conditions S4.13 and S4.14.

S4.13 If the Nominated Expert determines that the cave contains no materials

other than limestone rock, work can recommence when the Nominated Expert considers that observations made to fulfil conditions S4.8 and S4.9 have been completed. If the cave extends beyond the boundary of the Quarry Site it is to be sealed at the boundary of the Quarry Site with a robust seal resistant to the quarrying process.

S4.14 If the Nominated Expert determines that the cave contains any materials other than limestone rock (such as speleothems, fossils, sediments etc), the nominated expert (acting reasonably) must determine a course of action to be followed. The courses of action available are:

(a) No action. The cave may be destroyed as part of quarrying.

(b) The Nominated Expert can direct the quarry owner and/or quarry manager or their representatives to retrieve specific material from the cave if feasible, for later examination. The retrieval of material from the cave may occur at any time following this direction. Work around the cave can continue as soon as the material is retrieved.

(c) The Nominated Expert can direct the quarry owner and/or quarry manager to cease work around the cave for a period no longer than 4 working days in order that the cave and its contents may be studied in situ by the Nominated Expert or by other experts, or recovered for later study by further experts nominated by the Nominated Expert.

(d) The Nominated Expert may [within the 4 working day period referred to in condition S4.14(c)] apply for approval from DECCW to halt work around the cave for a period no longer than 1 calendar month in order that further study may be completed on material in the cave or material removed from the cave, where the Nominated Expert reasonably concludes that the cave is of such potential significance as to justify the halting of work around the cave for that period. A work plan will be developed to allow quarry operations to continue without impacting on the cave while the further study is being undertaken. Study undertaken as part of this course of action must be completed as soon as is feasible. A decision on the application to halt work must be made by DECCW within 4 working days of the application being made. If a decision is not made by DECCW within 4 working days of the application being made, only courses of action provided in condition S4.14(b) or condition S4.14(c) may be followed.

(e) If the cave or its contents is assessed by two out of three appropriately qualified Nominated Experts to be significant at a State or National or International level of significance or if the cave is protected by legislation due to its biodiversity or contains protected species as defined in Sch 3 of these conditions, the cave

must be conserved.

S4.15 On expiry of any cease work period stipulated in condition S4.14(c) or condition S4.14(d) , the cave may be destroyed by quarry workings.

Transfer of Material

S4.16 All material from caves discovered during quarrying such as bones, secondary calcite, sediment or other materials must be retained by the quarry owner at an appropriate storage facility for the life of the quarry and, where appropriate, transferred to appropriate collections or management authorities.

S4.17 If material has been retrieved from a cave by a Nominated Expert as part of the observations and study previously described, the quarry manager must allow that material to be removed from Project Site by the Nominated Expert if requested.

S4.18 All material placed in storage by the quarry owner must be reported by the quarry owner to the members of the Nominated Expert Panel and to the DECCW within 5 working days of its retrieval.

S4.19 An up-to-date register of material recovered from caves must be kept by the quarry owner for the life of the quarry. This register will be available for inspection by any person who requests access to the register.

S4.20 Any of the Nominated Experts must be granted access to material stored by the quarry on application to the quarry owner within 5 working days of giving notice.

S4.21 Any of the Nominated Experts may request the transfer of material from the quarry storage facility to the Nominated Expert’s place of work.

S4.22 A majority of the Nominated Expert Panel may agree that cave material in storage may be transferred to a scientist who applies to study this material.

S4.23 At the end of the quarry life any remaining stored material from caves must first be offered to the members of the Nominated Expert Panel. If the Nominated Expert Panel does not require the material, does not advise that it should be transferred to another person or institution, or has not responded to the offer within 20 working days, then the quarry owner may dispose of the material.

Reporting

S4.24 Within one month of 30 June each year, the register of discovered caves for the preceding 12 months from 1 July to 30 June must be reported to the DECCW.

S4.25 Research undertaken at the quarry site or on the material recovered from caves may be published in a peer-reviewed scientific journal.

Occupational Health and Safety

S4.26 All activities undertaken on site, including by any Nominated Experts or their assistants, must be completed in a manner consistent with the Mine Safety Management Plan and other OHS requirements. Prior to any work commencing, the quarry manager must be informed and details of the proposed work activities provided and approved by the quarry manager (acting reasonably).

Costs

S4.27 The quarry owner must cover the reasonable costs of the members of the Nominated Expert Panel, excluding only the members of the Panel who are employed by DECCW or by the Council. Those costs shall include the costs incurred, and the fees rendered, by the members of that Panel other than excluded members, in performance of a function under this Protocol or Pre-Blast Protocol, including in respect of inspections at the Project Site and the recovery, cataloguing, reporting and storage of materials removed from any cave in accordance with this Protocol or the Pre-Blasting Protocol.

Training

S4.28 All employees at the quarry who from time to time perform the duties of the quarry manager or quarry duty manager shall receive training before commencing such duties, from one of the Nominated Experts listed in Appendix 1, to carry out the identification of caves that may be discovered during quarrying. The training concerned shall have as its objective the identification of caves, to allow the employee concerned to give directions concerning the cessation of work in accordance with condition S4.7 until expert assessment of the specimens or other materials is undertaken in accordance with this protocol.

Appendix 1 – Nominated Expert Panel

S4.29 The Nominated Expert Panel is a panel comprising five experts.

S4.30 Subject to S4.31, the Nominated Expert Panel must be appointed prior to extraction of any limestone occurring under this consent.

S4.31 If DECCW fails to appoint members of the Nominated Expert Panel in accordance with S4.33(c) or S4.33(d) prior to the date that is sixty (60) days before the forecast commencement of extraction of limestone pursuant to this Consent, then the Council may appoint such number of members of the nominated expert panel as is required to take the number of Panel members up to the minimum of 5.

S4.32 The Nominated Experts must, between them, include the following expertise:

(a) geology with expertise in caves and karst;

(b) geomorphology with expertise in caves and karst;

(c) hydrology with expertise in caves and karst;

(d) vertebrate palaeontology with expertise in caves and karst; and

(e) biology with expertise in cave biota and ecosystems.

S4.33 The initial members of the Nominated expert panel are to include:

(a) Dr Stephen Swabey (geomorphologist and hydrologist with expertise in caves and karst), subject to his consent to the appointment;

(b) Dr Armstong Osborne (geologist with expertise in caves and karst), subject to his consent to the appointment;

(c) Subject to the proposed appointments of Dr Swabey and Dr Osborne, three other experts selected by the Manager, Karst and Geodiversity Unit, DECCW, or its successor ("Manager, KGU") or, if that unit ceases to exist, DECCW or its successor, in consultation with the quarry owner.

(d) If either Dr Swabey or Dr Osborne, or both of them, decline to accept the appointment then other members of the Panel may be appointed by the Manager, KGU or, if that unit ceases to exist, DECCW or its successor in consultation with the quarry owner.

(e) Any vacancy in the Nominated expert panel from time to time may be filled by an appointment made by the Manager, KGU (or, if that unit ceases to exist, DECCW or its successor) in consultation with the quarry owner and the other members of the Nominated Expert Panel.

(f) Upon appointment the members of the panel must provide their contact details to the quarry owner and must subsequently provide any changes in those details. The contact details shall include each member's telephone and mobile numbers and e-mail address.

S4.34 The Nominated expert panel may meet face-to-face, by telephone conference or by such other electronic means as is approved by the Panel members from time to time. The quorum for any meeting of the Nominated Expert Panel shall be three (3 members).

S4.35 The members of the Nominated Expert Panel hold office until the member:

(a) gives written notice of his or her resignation to each of the

quarry owner, the Council and the Manager, KGU of DECCW;

(b) dies;

(c) ceases to perform his or her duties under this Schedule, and fails to respond to any communications from the quarry owner for a period of two (2) months from the date on which the first communication is forwarded; or

(d) becomes a mentally incapacitated person.

S4.36 The members of the Nominated Expert Panel shall make all reasonable efforts to ensure that they undertake their responsibilities under this Protocol in a cost effective and efficient way, with the aim of ensuring that the Applicant does not incur unnecessary costs.

SCHEDULE 5

REQUIREMENTS FOR PLANNING, ASSESSMENT AND PROJECT SITE MANAGEMENT

Mining Operations Plan

S5.1 Prior to the commencement of any works on the Project Site, the Applicant shall prepare a Mining Operations Plan which has been approved by the Director-General of the Department of Industry & Investment. The Mining Operations Plan must:

(a) be prepared in accordance with the latest Mining Operations Guidelines prepared by the Department of Industry & Investment;

(b) include detailed plans of any proposed surface construction works associated with the excavation **Management Plans**

S5.2 In addition to the Mining Operations Plan, the Applicant shall prepare the following management plans.

(a) **Soil and Water Management Plan (SWMP)**, which has been prepared in consultation with the Council and, where required by law, with DECCW and with any other responsible regulatory authorities, to manage the environmental consequences of the approved operations on watercourses.

(b) **Air Quality Management Plan (AQMP)**, which has been prepared in consultation with the Council and, where required by law, with DECCW and with any other responsible regulatory authorities, to manage the environmental consequences of the approved operations on air quality.

(c) **Biodiversity Management Plan (BMP)**, which has been prepared in consultation with the Council and, where required by

law, with DECCW and any other responsible statutory or regulatory authorities, to manage the potential environmental consequences of the approved operations on flora and fauna and to rehabilitate the endangered ecological community within the Project Site.

(d) **Lower Chert Band Management Plan (LCBMP)**, which has been prepared in consultation with the Council and, where required by law, with DECCW and with any other responsible regulatory authorities to prevent penetration of the Lower Chert Band by quarrying at the Quarry Site.

S5.3 The **SWMP** shall include the following.

(a) An erosion and sediment control plan including:

(i) Identification of activities that could cause soil erosion or discharge of sediment or water pollutants from the Project Site;

(ii) A description of the locations, function and capacity of all erosion and sediment control structures;

(iii) A description of the measures to minimise soil erosion and the potential migration of sediments to downstream waters.

(b) A surface and groundwater monitoring program including:

(i) collection of baseline data on surface water flows and quality;

(ii) surface water and groundwater impact assessment criteria; and

(iii) a program to monitor the quantity and volume of water.

(c) A quarry drainage plan, specifying the drainage works to be undertaken for the quarry floor, work areas and access roads to minimise the risk of escape of contaminants into the Karst drainage system. The quarry pit must be designed to drain outwards and so as not to collect water.

S5.4 The **AQMP** shall:

(a) include details of the air quality management measures that will be implemented to control dust emissions;

(b) include a program to monitor deposited dust and, if required, suspended particulates; and

(c) address the matters specified in conditions S1.17 to S1.20 inclusive.

S5.5 **BMP**

(a) In this condition “Untracked Area” means the area of approximately 6 ha located in the south of the Project Site, being the land coloured green/blue in the plan prepared by Whelans InSites dated 6 May 2010 (annexed to this development consent and marked “B”).
(b) The BMP is to apply to the Project Site (which includes the Untracked Area), with the exception of the following areas (while quarrying is being undertaken on the Project Site:

(i) the Quarry Site;

(ii) the stockpiling and handling area, including the conveyor between this area and the extraction area;

(iii) the roads, parking areas, stockpiling area (adjacent to the Quarry Site) and those parts of the Project Site on which drains and other infrastructure relating to the proposed quarry are constructed; and

(iv) a stock passage route 10m wide running parallel and adjacent to the eastern boundary of the Project Site, that will be established to allow the movement of livestock from the part of Lot 31 to the south of the Project Site to the part of Lot 31 to the north of the Project Site, provided that the stock passage route must not be used for the grazing of livestock and must be separated from the remainder of the Project Site by a permanent or temporary fence, which prevents livestock moving through the stock passage route from entering the remainder of the Project Site.

(c) The BMP shall be prepared by persons with appropriate qualifications or training and knowledge and experience in weed control and bush regeneration / rehabilitation practices and who are eligible for membership of the Australian Association of Bush Regenerators (AABR) or of another suitable ecological organisation. The BMP must be approved by the Council prior to the commencement of any works on the Project Site.
(d) The BMP must detail a strategy for the protection, rehabilitation, conservation and enhancement of all endangered ecological communities and all other natural and bushland areas within the Project Site (excluding the areas referred to in (b)(i)-(iii) above but only while quarrying works are being undertaken) and must provide for the implementation of that strategy during:

(i) the period of thirty (30) years (or such longer period as may be approved by the Council and by the responsible regulatory authorities) during which quarrying operations are conducted within the Project Site; and

(ii) within the further period during which rehabilitation of the Project Site is undertaken, either in accordance with the requirements of this development consent or in accordance with the requirements of the Department of Industry & Investment or any other responsible regulatory authority,

to achieve the objective that at the expiration of the periods referred to in (i) and (ii) the endangered ecological community within the Project Site will be self-sustaining and naturally regenerating.

(e) An AABR approved contractor is to be engaged for the purpose of weed control and rehabilitation works, and the contractor's details must be supplied to Council prior to the commencement of weed control and/or rehabilitation work.

(f) The BMP is to incorporate the following:

(i) A prioritised weed management strategy with particular reference to creek line /riparian zones. This strategy is to include:

(1) a schedule of all noxious and environmental weeds on the site;
(2) specific control techniques to be employed, particularly where a high potential for weed succession, soil erosion and creek bank destabilisation exists;

(3) disposal of waste material; and

(4) a realistic timeframe for an appropriate level of weed control to be achieved.

(ii) Provision of clear and concise mapping of sensitive site features and their buffers, including *Xanthorrhoea glauca* subsp. *angustifolia* (grass trees).

(iii) Protection of the trees within the gullies on either side of the stockpiling and handling area and rehabilitation of vegetation affected by

construction and infrastructure works undertaken to commence the operation of the quarry.

(iv) Protection and management of vegetation including *Xanthorrhoea glauca* subsp. *angustifolia*, including the provision of appropriate buffer areas.

(v) A time frame for any work to be undertaken to rehabilitate the vegetation within the Project Site, with a clearly defined program of works and readily measureable objectives for the program.

(vi) A propagation schedule of provenance plant material, to be used in areas of poor to nil resilience. Supplementary planting in these areas is only to be undertaken in accordance with the approved BMP. (Note: Natural regeneration within key areas is preferable to supplementary planting or landscape regeneration. Any areas on Project Site displaying spontaneous recovery/regeneration are to be protected and their complete recovery facilitated.)

(vii) Monitoring of the progress of the implementation of the BMP is to be undertaken and reported within the *Annual Environmental Management Report*, referred to in condition S5.2. Fixed and permanent photographic reference points are to be established prior to the commencement of the strategy. Pre-treatment photographs should be taken prior to commencement of the program. These photographs will serve as evidence of the work undertaken, and will allow Council to determine the success of the BMP. A photographic record of the areas undergoing weed control treatment and rehabilitation and/or revegetation should be maintained by the Applicant or by the contractor undertaking the work, and made available to Council upon request. Monitoring is to be undertaken at the intervals specified below and reports are to be provided within one month of each date:

(1) 1 month after commencement of quarrying;:

(2) 6 months after commencement of quarrying;

(3) 12 months after commencement of quarrying;

(4) thence on an annual basis over the life of the quarry operation.

(viii) Provision for controlled gazing within the Project Site, but only as a tool for appropriate management of vegetation cover, so as to facilitate germination of vegetation and establishment of desired native vegetation or to reduce bushfire hazard. The BMP shall specify the periods during which such grazing is permitted and the areas within which grazing will be permitted during those periods.

(ix) Provisions requiring that:

(1) No tracks be established within the Untracked Area;

(2) No tracks be established within the rest of the Project Site other than those necessary for quarrying operations in accordance with this Consent;

(3) Prior to the commencement of quarrying operations, all other tracks within the Project Site are to be removed and revegetated; and

(4) All tracks within the Project Site are to be revegetated and rehabilitated at the conclusion of quarrying operations, other than any tracks required for maintenance of the vegetation on the site.

(g) Prior to commencement of any work under this consent, the Applicant must either:

(i) enter into a conservation agreement under Div 12 of Pt 4 of the *National Parks and Wildlife Act* 1974 relating to the Project Site, recording the obligations assumed by the Applicant under this condition S4.5, and under any other relevant conditions of this consent and register that agreement pursuant to s69F of the *National Parks and Wildlife Act* 1974; or

(ii) cause to be registered against the title of the Project Site a public positive covenant and/or a restriction on the use of the land, in favour of the

Council, requiring the Applicant to implement and observe the requirements of this condition S4.5, and any other relevant conditions of this consent,

and in either case to observe the restriction on grazing imposed by condition S4.5(viii) in perpetuity. The conservation agreement or the public positive covenant and/or restriction on the use of land, shall remain in force in perpetuity.

S5.6 LCBMP

The **LCBMP** shall:

(a) identify the investigations to be undertaken before the quarry void reaches RL580m, to provide additional information on the position of the Lower Chert Band;

(b) provide for drill holes to be completed in two parallel lines along the line of the creek to the north of the proposed Quarry Site, with those holes to be completed to RL550m, being 10m below the proposed minimum RL of the quarry void. The drill hole positions should include a:

(i) northern line, duplicating and extending previous drill holes S2 and S3; and

(ii) southern line, duplicating and extending previous drill holes YRDDH and S4 and adding two drill holes to the east of S4 along the ridgeline. These drill holes should be:

(1) 10m east of the eastern boundary of the quarry footprint; and

(2) 150m east of the eastern boundary of the quarry footprint.

(c) include mapping of the surface extent of the Lower Chert Band by a qualified geomorphologist or geologist;

(d) include a 3D computer model of the position of the Lower Chert Band constructed using the information gained from (a) and (c); and

(e) with reference to the 3D computer model of the position of the Lower Chert Band, provide a design of the proposed quarry void such that, vertically, it is at least 5m above the upper margin of the modelled Lower Chert Band.

S5.7 Management Plan Requirements

The Applicant shall ensure that the management plans required under this development consent are prepared in accordance with

any relevant guidelines, and include:
(a) detailed baseline data;

(b) a description of:

(i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);

(ii) any relevant limits or performance measures/criteria; and

(iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;

(c) a description of the measures that will be implemented to comply with the relevant statutory requirements, limits or performance measures/criteria;

(d) a program to monitor and report on the:

(i) impacts and environmental performance of the project;

(ii) effectiveness of any management measures (see (c) above),

(e) a contingency plan to manage any unpredicted impacts and their consequences;

(f) a program to investigate and implement ways to improve the environmental performance of the project over time; and

(g) a protocol for periodic review of the plan concerned, including but not limited to a summary of the conclusions / recommendations of the review of each plan in the *Annual Environmental Management Report* (AEMR) as referred to in Schedule 6.

SCHEDULE 6

ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

S6.1 Environmental Management Strategy

The Applicant shall prepare and implement an *Environmental Management Strategy* (EMS) for the quarry operations to the satisfaction of Council. The Strategy must:
(a) be submitted to the Council for approval prior to the commencement of excavation work on the Project Site;
(b) provide the strategic framework for environmental management of quarrying work at the Project Site;

(c) identify the statutory approvals that apply to quarrying work at the Project Site;

(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;

(e) describe the procedures that will be implemented to:

(i) keep the local community and relevant agencies informed about the operation and environmental performance of the development;

(ii) receive, handle, respond to, and record complaints;

(iii) resolve any disputes that may arise during the course of the development;

(iv) respond to any non-compliance; and

(v) respond to emergencies,

(f) include:

(i) copies of the various strategies, plans and programs that are required under the conditions of this development consent once they have been approved; and

(ii) a clear plan describing all the monitoring required to be carried out within the Project Site.

S6.2 Annual Environmental Management Report

At the end of each 12 month period calculated from the commencement of quarrying on the Project Site, the Applicant shall submit an AEMR to the relevant government agencies and to the satisfaction of the Council. This report must:
(a) identify the standards and performance measures that apply to the development;

(b) include a summary of the complaints received during the past year, and compare this to the complaints received in the previous 5 years;

(c) include a summary of the monitoring results on the development during the past year;

(d) include a comprehensive review of these monitoring results against the relevant:

(i) limits/criteria in this consent;

(ii) monitoring results from previous years; and

(iii) relevant predictions in the EIS and Specialist Consultant Studies Compendium;

(e) identify any trends in the monitoring results over the life of the development;

(f) identify and discuss any non-compliance during the previous year; and describe what actions were, or are being, taken to ensure compliance. These actions may include proposed amendments of management plans, to be proposed, approved and implemented as specified in conditions S1.2.4, S1.2.5 and S1.2.6.

(g) describe the works that were carried out in the past year, and the works that are proposed to be carried out over the next year; and

(h) describe what measure will be implemented over the next year to improve the environmental performance of the approved operations; and

(i) include the data, findings and recommendations referred to in conditions S1.12.11 and S1.12.12, and confirm the action taken by the quarry owner to implement those recommendations, as required by condition S1.12.15.

Notwithstanding the above requirements for an AMER, the Applicant shall notify Council and the EPA immediately following any observed environmental exceedence. Details of the circumstances of the exceedence and any measures adopted to rectify/suspend operations are to be provided with the notification (refer also to Condition S6.6).

***Reason**: To ensure the there is adequate reporting of the quarry operations*

S6.3 Pre-Commencement Inspection

At the completion of the site establishment and construction stage and prior to the commencement of product transportation, an inspection shall be undertaken by Council officers to ensure compliance with conditions relevant to the site establishment and construction phase.
***Note:** Inspection fees will apply to the development in accordance with Council's Management Plan.*

***Reason**: To ensure the all works and site facilities are in place to a standard acceptable to the Council.*

S6.4 Additional Inspections

The Consent authority may carry out inspections at any time as deemed necessary.
***Note**: Inspection fees will apply to the development in accordance with Council's Management Plan*.

***Reason**: To investigate any matters relating to the operation of the quarry.*

S6.5 Community Consultative Committee

(a) The Applicant shall participate in a Community Consultative

Committee (CCC) for the development, which will be established in accordance with a Charter adopted by Council.
(b) The Applicant shall, at its own expense:

(i) ensure that an appropriate representative(s) attends the Committee's meetings;

(ii) provide the Committee with regular information on the environmental performance and management of the development (such as through the AEMR);

(iii) arrange site inspections for the Committee, if necessary; and

(iv) respond to any advice or recommendations the Committee may have in relation to the environmental management or performance of the quarry.

***Reason** : To provide the community with an opportunity to raise concerns or issues related to the on-going operation of the quarry.*

S6.6 Incident Reporting

The Applicant shall notify the Council and any other relevant agencies of any incident associated with the development as soon as practicable after the Applicant becomes aware of the incident. Within 7 working days of the incident, the Applicant shall provide the Council and any relevant agencies with a detailed report on the incident concerned.

S6.7 Independent Environmental Audit

(a) Within two years from the date the consent becomes effective, and every five years thereafter, unless the Council directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development.
(b) This audit must:

(i) be conducted by a suitably qualified, experienced, and independent person whose appointment has been endorsed by the Council;

(ii) be consistent with ISO 19011:2002 – Guidelines for Quality and/or Environmental Systems Auditing, or equivalent updated versions of these guidelines;

(iii) assess the environmental performance of the development, and its effects on the surrounding environment;

(iv) review the adequacy of strategies, plans or programs required under this development consent and under the approvals referred to in (iii);

(v) assess whether the development is complying with the relevant standards, performance measures, and statutory requirements;

(vi) review the adequacy of the Applicant's environmental management measures; and if necessary, recommend measures or actions to improve the environmental performance of the development.

(c) The Applicant shall notify the Council of the date of commissioning each audit. Within 3 months of the commissioning the Applicant shall submit a copy of the audit report to the Council, with a response to any of the recommendations contained in the audit report.

***Reason**: To ensure the quarry is complying with relevant standards, performance measures and statutory requirements.*

S6.8 Revision of Strategies, Plans and Programs

Within three (3) months of the submission of an:
(a) audit under condition S6.7;

(b) incident report under condition S6.6; and

(c) Annual Environmental Management Report under condition S6.2,

the Applicant shall review, and if necessary amend, the strategies, plans and programs required under this development consent to the satisfaction of the Council. The Council is to approve any such amendment, to the extent that such an amendment is permitted under the terms of this consent.

S6.9 Access to Information

No later than the expiration of 6 months from the date on which quarrying work commences at the Project Site, the Applicant shall make the following information publicly available on its website:
(a) a copy of all current statutory approvals;

(b) a copy of the current Environmental Management Strategy and associated plans and programs;

(c) a summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this development consent;

(d) a complaints register, which is to be updated on a monthly basis;

(e) a copy of the minutes of any community consultative committee (or equivalent body) established by the Applicant and the Council in accordance with this development consent;

(f) a copy of all annual reviews, as those reviews are undertaken;

(g) a copy of any independent environmental audit, and the Applicant's response to the recommendations in any such audit, after each audit is carried out and after the Applicant's response is completed; and

(h) any other matter required by the Council or by any other regulatory authority with jurisdiction in relation to the development.

Schedule 7

Landscape Management and Rehabilitation

Landscape Management Plan

S7.1 The Applicant shall prepare and implement a detailed Landscape Management Plan for the Project Site to the satisfaction of Council. This shall:

(a) be prepared in consultation with Council and the Department of Industry & Investment;
(b) be submitted to Council for approval prior to commencement of operations on Project Site;

(c) incorporate:

(i) the Biodiversity Management Plan (See Condition S5.2(c) and S5.5);

(ii) a Vegetation Clearing Plan;

(iii) a Rehabilitation Management Plan; and

(iv) a Mine Closure Plan.

Vegetation Clearing Plan

S7.2 The vegetation clearing plan shall include the following.

(a) Clear delineation of disturbance areas and restriction of clearing to the minimum area necessary to undertake the approved activities.
(b) A methodology for recording the approximate size and number of hollow bearing trees to be removed and their replacement with the same number of nesting boxes of appropriate sizing within similar vegetation within the Project Site. The nesting box design chosen must reflect the size of hollows removed with microbat nesting boxes used to replace small hollows and Squirrel Glider nesting boxes to replace medium size hollows.

(c) Observation of hollowing bearing trees by an appropriately trained or qualified person to determine if hollow dependent fauna are present. Hollow bearing trees in use must be marked and surrounding vegetation cleared several days prior to the removal of the hollow bearing trees to promote vacation of the trees.

(d) Provision for a suitably trained or qualified person to be present during the felling of identified hollow bearing trees to provide assistance with the care of any injured fauna.

(e) Provision for the checking of any animals found and recording of the species, number, condition (age class, pregnant or lactating females etc) and for details to be provided to the National Parks and Wildlife Service and Council within 3 months of the clearing event.

(f) A methodology for recording the number of White Box (*Eucalyptus albens*), Yellow Box (*Eucalyptus melliodora*) and Bundy (*Eucalyptus nortonii)* trees removed and replacement with five seedlings raised from local White Box, Yellow Box and Bundy stock and planted within similar vegetation within the Project Site.

(g) Provision for the annual inspection of the nesting boxes and health of the planted White Box, Yellow Box and Bundy seedlings for the first 5 years of operation. An inspection report shall be prepared and include a review of the condition and use of the nesting boxes. Any planted White Box, Yellow Box or Bundy trees that are found to have died are to be replaced with any actions taken to help ensure the new plantings have a better chance of becoming established.

Rehabilitation Management Plan

S7.3 The Rehabilitation Management Plan must include:

(a) the rehabilitation objectives for the Project Site;
(b) an outline of how the Quarry Site would be rehabilitated so as to integrate with the surrounding landform and does not contain any slopes or vertical headwalls that do not conform with the then current industry practice and standards;

(c) a description of how flora and habitat values will be improved or enhanced;

(d) a general description of the short, medium and long term measures that would be implemented to rehabilitate the Project Site;

(e) a detailed description of the measures that would be implemented within the proposed areas of disturbance for:

(i) conserving and reusing topsoil, and obtaining soil depth similar to that naturally occurring on and surrounding the disturbed areas of the Project Site;

(ii) establishing biologically active topsoil by introduction of native early colonising species of naturally occurring limestone soils prior to re-establishing existing vegetation communities;

(iii) protecting any areas displaying spontaneous recovery/regeneration of vegetation and facilitating that recovery and regeneration;

(iv) revegetation with native tree, shrub and grass species comparable with the existing vegetation communities in the area;

(v) methods of seeding (prepared by a restoration ecologist) which ensure that local native provenance plants will be able to be re-established on the constructed slopes;

(vi) salvaging and reusing material from the Project Site for habitat enhancement; and

(vii) controlling weeds and feral pests.

Note: the collection of seeds from an Endangered Ecological Community requires licencing under Section 91 of the Threatened Species Conservation Act 1995*.*

(viii) performance and completion criteria for the rehabilitation of the site; and

(ix) a description of how the performance of the rehabilitation works would be monitored over time to achieve the stated objectives and against the relevant performance and completion criteria.

Mine Closure Plan

S7.4 The Mine Closure Plan shall:

(a) define the objectives and criteria for mine closure;
(b) outline options for the future use of the Project Site;

(c) describe the measures that would be implemented to minimise or manage the on-going environmental effects of the project; and

(d) describe how the performance of these measures would be monitored over time.

Rehabilitation Security

S7.5 The Applicant shall establish a rehabilitation security deposit or bond with the Department of Industry & Investment under the *Mining Act* 1992 prior to commencing quarrying work on the Project Site.

Species to be Used in Short-term Soil Stabilisation

S7.6 Where short-term soil stabilisation utilising groundcover species is required, the Applicant shall use the appropriate groundcover species as outlined within **Table 1**.

Table 1 : Species for Stabilisation

Endemic Perennial Species	Other Native Perennial Species	Non-native Annual / Nonpersistent Species (growth period)
Lomandra longifolia	Chloris truncata	Japanese Millet (Spring/Summer)
Aristida personata	Elymus scaber	Ryecorn/Oats (Autumn/Winter)
Aristida vagans	Microlaena stipoides	Serradella (Aug to Jan)
Bothriochloa macra	Sorghum leiocladum	White Clover (perennial)
Chloris ventricosa	Themeda australis	Haresfoot Clover (perennial)
Cymbopogon refractus		Couch (perennial)
Dichanthium sericeum		
Panicum effusum		

Source: *RW Corkery & Co* (Feb 2009) Response to DECC Submission (Table A)
***Reason**: To ensure that the species that are used in stabilisation do not remain in the environment to persist as weeds.*

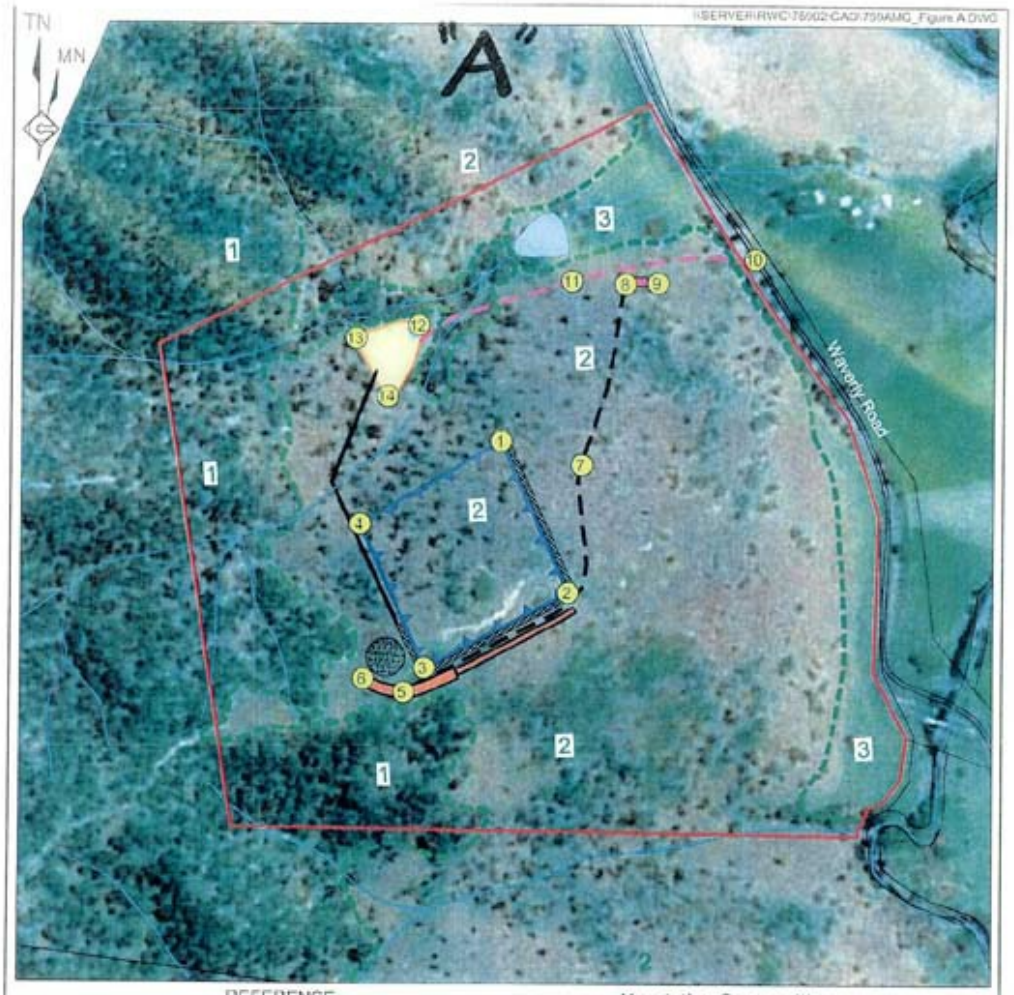
Additional Stabilisation Measures
S7.7 If necessary, 'soft engineering practices, such as installation of jute mesh or other soil stabilisation methods, shall be utilised on steeper slopes and near drainage lines to reduce potential surface water pollution.

***Reason** : To ensure appropriate measures are taken to stabilise soils and to avoid introduction of persistent weed species.*

Timor Limestone Quarry

Annexure "A"

Preferred Project Layout Plan



REFERENCE

- Project Site Boundary
- Extraction Area
- Stockpiling and Handling Area
- Drainage Line
- Site Access Road
- Internal Access Track
- Amenity Bund
- Soil Windrow
- Safety Barrier
- Surge Stockpile
- Proposed Conveyor Route

Vegetation Communities

1. Yellow Box - Blakely's Red Gum
2. Large-flowered Bundy - Kurrajong
3. Slender Rats-tail Grass
- Vegetation Community Boundary

Point	AMG Easting	AMG Northing
1	318 934	6 492 695
2	319 018	6 492 508
3	318 842	6 492 416
4	318 762	6 492 591
5	318 817	6 492 386
6	318 767	6 492 401
7	319 033	6 492 666
8	319 085	6 492 889
9	319 126	6 492 889
10	319 242	6 492 918
11	319 020	6 492 891
12	318 832	6 492 836
13	318 755	6 492 818
14	318 793	6 492 750

SCALE 1:7 500

100 0 100 200 300 400m

Base Photo Source: Dept. of Lands
Source: Modified Atlas Idyll Spaces (2006) - Figure 4

Figure B
AMENDED PREFERRED PROJECT SITE LAYOUT

Timor Limestone Quarry

Annexure "B"

Project Site Plan

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