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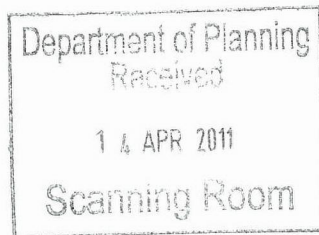
12 April 2011



Mr Howard Reed  
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Originally sent by email to: [howard.reed@planning.nsw.gov.au](mailto:howard.reed@planning.nsw.gov.au)

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Dear Howard

**Re: Response to Submissions – New Berrima Clay/Shale Quarry  
(The Austral Brick Co Pty Ltd)**

I have attached the Response to Submissions relating to the *Environmental Assessment* for the above project that was placed on public exhibition between 16 December 2010 and 7 February 2011.

We have addressed in the Response document all issues raised in the submissions by the five government agencies (NSW Office of Water, Department of Environment, Climate Change and Water, Industry & Investment NSW, Wingecarribee Shire Council and Roads & Traffic Authority) and two members of the general public (Robert and Paula Mclean (Pingama Pty Ltd) and Flocolo Family Trust (Adrian Mackenzie)).

I trust you will find that we have addressed the issues raised adequately and appropriately. Please contact either Nagindar Singh or myself in our Brooklyn office if you require further information or clarification.

We look forward to receiving the Minister's determination on this project application in the near future.

Yours sincerely

Robert W. Corkery

Encls: Response Document

Copy: The Austral Brick Co. Pty Ltd

# Response to Submissions

for the

## New Berrima Clay/Shale Quarry

Major Project Application No PA\_08-0212

*Compiled by:*



**R.W. CORKERY & CO. PTY. LIMITED**

**April 2011**

# Response to Submissions

## for the

### New Berrima Clay/Shale Quarry

Major Project Application No PA\_08-0212

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Ref No. 744/05

April 2011



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## 1. INTRODUCTION

This report has been compiled by R.W. Corkery & Co. Pty Limited (RWC) on behalf of the Proponent of the New Berrima Clay/Shale Quarry Project, The Austral Brick Company Pty Limited (Austral), in response to submissions lodged with the Department of Planning (DoP) following the public exhibition of the *Environmental Assessment* prepared in support of the project approval under Part 3A of the *Environmental Planning and Assessment Act 1979*.

The following submissions were received by the Proponent via the DoP.

- Five government agencies:
  - NSW Office of Water;
  - Department of Environment, Climate Change and Water;
  - Industry & Investment NSW;
  - Wingecarribee Shire Council;
  - Roads and Traffic Authority.
- Two individual members of the general public, being neighbouring residents:
  - Robert and Paula Mclean (Pingama Pty Ltd);
  - Flocolo Family Trust (Adrian Mackenzie).

Responses presented in this report have been prepared to address all issues raised in the above submissions. A number of issues raised required specialist expertise responses and the following specialist consultants provided the responses to those issues. It should be noted that these consultants undertook the respective assessments for the Project incorporated within the *Environmental Assessment*.

- Air Quality Assessment – Heggies Pty Ltd (now SLR Consulting Pty Ltd)
- Surface Water Assessment – SEEC.
- Traffic – Traffic Solutions Pty Ltd.

The individual contributions from these specialist consultants have been incorporated directly into the main report.

This report was reviewed by Adam Davies (Property Development Manager, The Austral Brick Company Pty Ltd) for and on behalf of the Proponent.

The document is structured as follows.

- Section 1** provides an introduction to the document and identifies the contributing authors.
- Section 2** provides responses to issues raised by the five government agencies noted above.
- Section 3** provides responses to the issues raised by the residents.
- Section 4** provides an updated and final version of the Statement of Commitments originally included as Section 5 in the *Environmental Assessment*. Where the commitments have been amended, the amended text has been tracked and is underlined and in red.



## 2. GOVERNMENT AGENCIES

### 2.1 INTRODUCTION

Issues raised by the government agencies and two individual members of the public noted in Section 1 are addressed in this section. The following environmental impacts or matters relating to those impacts were raised.

- Surface water – supply, flows and environmental management plans
- Groundwater – interception
- Traffic issues
- Noise impacts
- Environmental Offsets and Protection
- Community Consultative Committee
- Voluntary Planning Agreement

### 2.2 RESPONSES

#### Water Supply

*Adequacy of water supply to the proposal.*

*NOW requests validation of water supply predictions and a clear commitment to operate the proposed quarry in accordance with water sharing regulations under NSW water legislation. This commitment should be included in conditions of project approval.*

*The applicant must determine which dams will be classed as harvestable rights structures.*

*NOW requires a drought contingency component to the site water balance which identifies the potential sources of water to operate the quarry.*

NSW Office of Water

#### Response

The proposed quarry does not have a significant demand on water in order to operate, as material is proposed to be processed off site. Modelling has determined that harvestable-right dams totalling 4.59ML in capacity would be sufficient to meet the project demands 100% of the time. This modelling used 100 years of historic daily rainfall data from the Bureau of Meteorology, including periods of extended drought.

Additional modelling identified that dams totalling only 2.9ML would meet the anticipated demand for water 99.9% of the time, further demonstrating that supply amply meets demand despite inherent climatic variations.

As detailed in the *Environmental Assessment*, water demand is for dust suppression only. Potable water would be brought to site in bottles. Dust suppression would be minimal because the soils are strongly aggregating and rainfall exceeds evaporation for a number of months (reducing the drying out of silt and fine sand particles).



Water supply contingencies are not considered necessary given the very low demand and modelled supply-confidence. A licence to use/extract surface water is, therefore, not considered necessary. As such, the Project can be operated in accordance with the draft Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources.

In the extremely unlikely event that the harvestable right structures could not meet demand for dust suppression, and nuisance dust became an issue, alternative sources of dust suppression would be applied, such as use of Gluon or TerraControl on unsealed suppressants, roads being used for product transport. This activity has been included in the *Statement of Commitments* (see Section 4, SoC 8.1).

The applicant would nominate in the Operational Environment Management Plan (to be prepared prior to site establishment and operation) those structures that would be used for harvesting water, ensuring that the sum total volume of those structures does not exceed the harvestable right for the property.

---

### **Stony Creek Crossing**

*Any replacement or upgraded Stony Creek Crossing does not increase afflux through any culvert or other flow conduit through the crossing.*

NSW Office of Water

### **Response**

The existing crossing over Stony Creek would continue to be used and, as such, no changes are expected to the existing environmental conditions there. In the event that this crossing required renewal or replacement, appropriate safeguards would be adopted comparable to those that would be required if it were a controlled activity under the *Water Management Act 2000*.

---

### **Surface Water**

*DECCW recommends that the development and implementation of an Environmental Management Plan (incorporating appropriate sub-plans) be included as a new Statement of Commitments.*

DECCW

An Environmental Management Plan (EMP) for the construction and operation of the quarry would be prepared following project approval and before on-site activities commence. This plan would be prepared in consultation with the relevant government agencies by a person (or persons) qualified and experienced in the relevant field(s).

A Water Balance, Surface Water Management Plan, and Erosion and Sediment Control Plan would be included as sub-plans within the overall EMP. These would incorporate the commitments made in the EA, be prepared in accordance with industry best-practice, plus incorporate any agency or DoP requirements identified during the approvals process.

The EMP would include a monitoring and response plan for surface water so that potential impacts can be quickly identified and appropriate action taken.

The development and management of an EMP for the site has been included as a new *Statement of Commitment* (see Section 4, SoC 4.6)

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### Groundwater Interception

*NOW requires the applicant to verify EA predictions related to nil or minimal groundwater interception.*

*The applicant must ensure it has an adequately formulated groundwater monitoring program, linked to contingency actions should groundwater be intercepted during the quarrying project.*

NSW Office of Water

### Response

Quarries in the Ashfield Shale have been in operation in the Sydney metropolitan area and its hinterland for well in excess of 100 years supplying clay/shale to the brick industry. It has been a common observation of the author of the *Environmental Assessment* over the past 40 years that the only water accumulating in such quarries is surface water. As expected, no water was encountered during the drilling program which involved drilling to depths well below the proposed depth of the quarry. It is maintained that groundwater inflows would be nil/negligible and certainly not measureable.

The design of a groundwater monitoring program for the site would be redundant.

### Environmental Offsets and Protection

*Council feels there is a strong opportunity to leverage environmental outcomes as a result of the proposal. Given the proximity of the site to the Wingecarribee River site restoration consistent with the riparian buffer widths identified in the Department of Natural Resources Riparian Corridor Management Study would be an offsetting opportunity.*

Wingecarribee Shire Council

### Response

Austral rejects Council's approach to using its application to leverage environmental outcomes involving riparian buffer widths. Austral is managing the "Mandurama" property in a similar manner to the landholders both north and south of the river. Singling out Austral on his occasions is inappropriate. Council would be better served by approaching this issue in a holistic manner, developing a riparian management zone in consultation with all river-side landholders and then approaching the issue of buffer widths with all landholders.

*Rehabilitation of the quarry, Council would expect the land to be contoured to allow the base of the quarry to be free draining. An appropriately sized bond in the form of cash or a bank guarantee for the rehabilitation of areas disturbed by the quarry activity should form part of any consent issue.*

Wingecarribee Shire Council

### Response

Council's request for a free-draining quarry is considered totally inappropriate. The creation of such a feature would create a highly visible feature which is totally contrary to the description of the quarry as presented in the *Environmental Assessment*. Residents north of the Wingecarribee River would hardly be supportive of Council's suggestion.



### Voluntary Planning Agreement

*Council pursuing a contribution toward local community enhancement projects is sought with the development proposal. Pursuant to the provisions of section 93F of the Environmental Planning and Assessment Act 1979 Council strongly suggest the applicant enter into discussions aimed toward achieving a Voluntary Planning Agreement for;*

- a) An appropriate indexed rate for road maintenance for all roads where Wingecarribee Shire Council is involved in the maintenance of the road.*
- b) Contribution toward strategic local road infrastructure improvements and in particular an appropriate proportional contribution toward the construction of a proposed Cavendish Street/Old Hume Highway roundabout.*
- c) Dedication to Wingecarribee Shire Council of land to enhance community accessibility along the Wingecarribee River.*
- d) Environmental offsets and protection (including compliance with all legislation relating to environmental protection).*

Wingecarribee Shire Council

### Response

With respect to items (a) and (b), Austral accepts and acknowledges that it is appropriate that a contribution is made for the maintenance of the Council-owned and managed roads. Austral has proposed (in *Environmental Assessment* Section 5.1.4) that a contribution of \$0.04 per tonne per kilometre travelled on Council roads is paid to Council. This contribution (contrary to Council's assertions) is considered consistent with maintenance payments paid by other quarries and mines where such payments are required.

With respect to Items (c) and (d), the sentiments reflected in the response above regarding "Environmental Offsets and Protection" equally apply. Use of the current proposed project to leverage land dedicated to Council is rejected by Austral.

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### Community Consultative Committee

*Council requests that a Consultative Committee consisting of a Councillor and representatives from Council Community, Environment and Sustainability Committee be formed to establish an effective offset policy for any vegetation loss or damage from this proposal. This group will also act as a liaison point between Council, the Environment and Sustainability Committee and the Quarry Management to monitor environmental performance, restoration of the site and to advise on restoration works along the Wingecarribee River.*

Wingecarribee Shire Council

### Response

Austral acknowledges and accepts it is appropriate for a Consultative Community Committee to be formed to undertake a review function as noted in the Guidelines for such committees. A close review of the *Environmental Assessment* reveals that the Project would be undertaken in cleared grazing land within only five trees to be removed, none of which are native trees to the site. Hence, monitoring of "vegetation loss or damage" would be an inappropriate function for the committee. It is again re-iterated that so-called "restoration works" along the river is being proposed without a consolidated plan and again should not be a role for the committee.

---



## Traffic

*Consider the warrants for upgrading the Berrima Road into Taylor Avenue intersection to provide a Basic Right Turn Treatment as per Section 6 of the AUSTRROADS Guide to Traffic Engineering Practice – Part 5 Intersections at Grade. Consideration should be given to the provision of a concrete median on the Taylor Avenue approach to Berrima Road to control movements at this junction and ensure vehicles are turning onto the correct side of the road without “cutting” corners.*

RTA

## Response

The proposal is estimated to generate only 17 vehicle trips in the peak hours with only 13 of these vehicles utilising the haulage route. This is an average of 1 truck vehicle every 4 minutes and 37sec or 1 truck every 8 minutes 34s approaching or departing. This minor traffic generation in isolation does not meet the AUSTRROADS warrant for the provision of this intersection configuration.

---

*In the SoC and the Environmental Assessment (EA), there appears to be some inconsistency in what type of controls will be installed.*

*DECCW recommends that all SoCs be updated to refer to a truck shaker grid or truck washing station.*

DECCW

## Response

Austral will adopt the use of a truck shaker grid, rather than a truck washing station, (or a rubblepit) to reduce the level of tracking of material onto the public road network. The *Statement of Commitments* (see Section 4, SoC 8.6) has been reviewed and reference to the grid inserted consistently.

The applicant raises no objection to a condition requiring the provision of a truck shaker grid.

*Consideration should be given to performance of the proposed transport route over the life of the development. Of particular concern are the intersections of: Taylor Avenue/Berrima Road, Old Hume Highway/Cavendish Street; Mittagong Road/Kirkham Road/Wingecaribee Street.*

Wingecaribee Shire Council

## Response

The potential truck traffic generated by the proposal of 13 heavy vehicle trips per hour will not create traffic delays at any intersection in isolation. The background traffic growth over the life of the project will be the key factor in intersection performance. Council and the RTA undertake modelling for future traffic growth so that an appropriate intersection control is included in future works programs.

---



*Wingecarribee Shire Council recommends that consideration of the existing pavement strength and condition (travel lanes and shoulders) of all roads along the proposed transport route, for the life of the quarry.*

Wingecarribee Shire Council

### Response

The maintenance of public roads is contributed by the owners of all registered vehicles, noting, that truck registration is considerably high. The proposed layout route is an existing approved route for heavy vehicles up to the proposed 19m articulated vehicles - therefore existing pavement strength should have been constructed to cater for these vehicles.

A dilapidation report could be prepared by a pavement specialist, however, it is considered unnecessary as Austral is prepared to contribute to maintenance of roads administered by Wingecarribee Shire Council.

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*Wingecarribee Shire Council requests that consideration of the pavement and shoulder width should be given to accommodate the largest design vehicle along the proposed transport route.*

Wingecarribee Shire Council

### Response

Austral proposes 19m articulated vehicle maximum. The Heavy Vehicle Route Assessment did not identify any section of the proposed transport route that could not accommodate the size of vehicles proposed. 19m vehicles are permitted to travel on all of the roads along the existing transport route with a legitimate destination.

---

*The traffic assessment notes that Berrima Road (north of Taylor Avenue), for instance, is a local road. Whilst heavy traffic to the quarry may be permissible on this road (for access into a development), the turning characteristics of the heavy vehicles (up to 19m Semi-trailer) at all intersections along the route need to be accurately assessed. Discussion with Council and RTA is recommended regarding the analysis of the largest proposed vehicle (i.e. 19m semi-trailer) at all key intersections.*

Wingecarribee Shire Council

### Response

Austral proposes the use of 19m articulated vehicle maximum. The Heavy Vehicle Route Assessment did not identify any section of the proposed transport route that could not accommodate the size of vehicles proposed. 19m vehicles are permitted to travel on all of the roads along the existing transport route with a legitimate destination.

The RTA has not raised any concern with any of the intersections along the transport route that are under their jurisdiction.

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*It is recommended by Council's Bowral "Paramics" Micro-simulation Friday evening peak model, and traffic survey data, be extended from Kirkham Road/Mittagong Road along the transport route to the Freeway Ramps at Welby. To enable an assessment of impact of heavy vehicles on traffic flow along the transport route, and in particular, on Mittagong Road between the traffic signals at Old Bowral Road and Kirkham Road. The model should reflect the speed of laden and unladen vehicles and factor in the steep grades on Mittagong Road on Mt Gibraltar.*

Wingecarribee Shire Council

### Response

The estimated heavy vehicle volumes per hour are 13 which is an average of 1 truck every 4 minutes when production has been halted due to wet weather. Austral raises no objection to Council undertaking 'Paramics Modelling', However, Traffic Solutions Pty Ltd is of the opinion that the number of heavy vehicles proposed will be such a small proportion of vehicles on this route that no discernable difference in existing intersection or midblock levels of service will occur and as such the additional modelling requested by Council is not considered to be warranted.

It should be noted that Mittagong Road is a state road under the care and control of the RTA who have not raised this concern.

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*A further assessment on the Bowral Town Centre, in particular the intersection of Kirkham Road/Wingecarribee Street intersection and the impact on the bridge.*

Wingecarribee Shire Council

### Response

No heavy vehicle traffic associated with the Project would travel over the railway bridge adjacent the subject intersection nor travel through the town centre on the eastern side of the rail line. Priority at this intersection is given to vehicles coming off the bridge, therefore on the transport route proposed heavy vehicles will have to stop to give priority to vehicles travelling off the bridge. 13 heavy vehicle trips per hour will not cause any intersection delays.

---

*The traffic assessment does not consider crash history along the route and whether the increase in frequency and volume of heavy vehicles may compound adverse situations along the route. The increase of heavy vehicle movements long the proposed transport route should not exacerbate issues of road safety at all key intersections. Crash data should be provided by the RTA in the assessment.*

Wingecarribee Shire Council

### Response

An accident investigation along the full route is considered to be beyond the responsibility of any applicant. Road Safety is the responsibility of the State Authorities and local government. If there was sufficient evidence that heavy vehicles caused an increase in accident rates along a road route it is suggested that heavy vehicles would be prohibited from more roads.

RTA has not raised any concerns with the Project and the majority of the haulage route is on RTA roads. This request is considered excessive and unnecessary.

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*Wingecarribee Shire Council expresses concerns of truck driver behaviour - which may be adversely with frequent, repetitive trips, over 30 years (life of the project), may be a degree of complacency by operators and increase in speed over time. Whilst education programs of drivers may be beneficial turning control can be aided by concrete medians at intersections. Of particular concern are the intersections of: Berrima Road/Taylor Avenue; Old Hume Highway/Cavendish Street, and; Mittagong Road/Kirkham Street.*

Wingecarribee Shire Council

## Response

An important control to be adopted by Austral, will be in the introduction of a Code of Conduct for the drivers travelling to and from the quarry. Such a code and the requirement for it to be reviewed and signed off annually will be an important factor to overcome the complacency referred to by Council.

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## Noise

*Section 5.3.5 states as a mitigation measure that "No processing of materials would be conducted on site". DECCW recommends that this measure is included as a new SoC.*

*SoC 5.7 refers to the incorrect Section of the EA for Hours of Operation. The SoC should be updated to refer to Section 2.7.1.*

*Section 2.7.1 states that "... transportation may need to be undertaken on weekends in special circumstances such as following periods of prolonged wet weather". DECCW recommends that the proponent consider preparing a Notification Protocol to notify potentially affected residences of activities undertaken outside of normal hours of operation.*

*Section 5.3.5 also states that "Reversing alarms (mid frequency band) would be fitted to all earth moving equipment to avoid high frequency noise associated with conventional alarms". DECCW recommends that this measure is included as a new SoC.*

DECCW

## Response

Austral acknowledges the benefits of the requested additions and modifications to the *Statement of Commitments* – all of which have been adjusted (see Section 4) as follows.

- Processing of materials – SoC 5.10
- Hours of Operations – SoC 5.7
- Notification Protocol – SoC 2.4
- Reversing alarms – SoC 5.11

Additionally, two new SoCs, pertaining to the establishment of a complaints line and maintenance of a complaints register (SoCs 2.5 and 2.6, respectively) have been included in the *Statement of Commitments* (Section 4).

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## Fauna

*DECCW recommends that where fauna are present, the option to retain the tree should be considered prior to felling.*

DECCW



## Response

There are only five trees within the proposed extraction area, namely three exotic trees and two eucalyptus, that are not indigenous to the area. Austral does not support their retention but will require that the EMP that will be prepared for the site following project approval includes a component that the trees are checked for fauna presence prior to their removal.

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## Heritage

*The recommendation from the Illawarra LALC regarding Aboriginal Site Monitoring does not appear to be reflected in the proposed mitigation measures detailed in the EA. DECCW recommends that the SoC reflect this commitment.*

DECCW

## Response

The recommendation from the Illawarra LALC specifically relates to works “carried out within the buffer zone of the creek”. Given that no activities will occur within 800m of the Wingecarribee River, such a commitment is not necessary.

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## 3. RESIDENTS

### Air Quality – PM<sub>10</sub>

*The assessment of PM<sub>10</sub> impacts from the quarry and Blue circle should be modelled together.*

Robert McLean

*Assess cumulative impacts together with data from Blue Circle over a 3 month period with differing wind conditions.*

*Assess cumulative impacts with Blue Circle data linked to the frequency of southerlies which affect properties such as R11, 12, 13.*

Robert and Paula McLean

## Response

As discussed within the Air Quality Impact Assessment, detailed information on the operations and hourly emissions characteristics of the Blue Circle Cement Works were not available at the time of the assessment due to the commercial sensitivity of this data. To account for the contribution of this source, the assessment was performed using the data available from the National Pollutant Inventory, for annual PM<sub>10</sub> emissions and the corresponding maximum 24-hour and annual average PM<sub>10</sub> concentrations were predicted at each sensitive receptor. However, as no emission characteristics of the Blue Circle Cement Works were known (e.g. stack exit velocities, diurnal variations in operations etc.) the results of modelling assessment for PM<sub>10</sub> from Blue Circle Cement Works would likely show more relation to observed annual average PM<sub>10</sub> concentrations surrounding the cement works rather than short-term ‘peak’ concentrations, such as the 24-hour average. A maximum annual average PM<sub>10</sub> concentration attributable to the Blue Circle Cement Works was predicted as 3.9 µg/m<sup>3</sup> at Receptor 2 (R2).



In the modelling of the Project, a daily varying PM<sub>10</sub> background file was included, as required by DECCW. This background file was taken from Oakdale, with maximum 24-hour PM<sub>10</sub> concentrations within this dataset of 49.2 µg/m<sup>3</sup> and an annual average concentration of 12.8 µg/m<sup>3</sup>, more than three times greater than that predicted from the cement works in isolation.

It is therefore considered that the use of the Oakdale dataset to represent background PM<sub>10</sub> will appropriately account for any cumulative impacts of the Project activities plus any impacts from the Blue Circle Cement Works.

As part of the cumulative assessment, direct measurements of hourly average wind speed and direction recorded for 2007 at the BoM's Moss Vale AWS were input into TAPM simulations for realignment to local conditions (i.e. the region surrounding the Project Site). Based on comparison with four preceding years of wind data, the data recorded during 2007 at Moss Vale is considered representative of the Project Site and will appropriately account for likely variations in wind behaviour experienced in the greater region throughout the year.

Furthermore, review of the Environment Protection Licence for the Berrima Cement Works (EPL AD to supply) identifies that there is no requirement for the owners of the cement works to undertake either deposited dust or PM<sub>10</sub> monitoring. The absence of such a requirement is invariably an indication that the DECCW recognises that there is a high level of dust control and little need to monitor dust levels.

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*The modelling of PM<sub>10</sub> impacts from the cement works has been done as volume source. It should be done with stacks since PM<sub>10</sub> would also be emitted from stacks at the cement works, causing different dispersion behaviour than treating it all as volume source.*

Robert McLean

## Response

As discussed above, no information was available on the specific emission characteristics of the Blue Circle Cement Works. To provide a screening level assessment, the annual emissions of PM<sub>10</sub> from the cement works were obtained from the National Pollutant Inventory and modelled as a volume source, covering the entire cement works site. In the absence of any detailed data on stack emissions, and on the activities occurring at the cement works site, it is considered that for a screening assessment, the methodology is valid. The modelled source includes consideration of the mass of PM<sub>10</sub> emitted from the stacks at the cement works.

Furthermore, the findings of the screening assessment indicated that the use of the Oakdale background PM<sub>10</sub> dataset added to the predicted PM<sub>10</sub> impacts from the proposed Project would be more than sufficient to account for potential cumulative PM<sub>10</sub> impacts from the Project and the cement works, with the annual average PM<sub>10</sub> concentration in the background dataset being more than three times greater than the PM<sub>10</sub> concentration modelled from the cement works alone.

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*The modelling involved only one scenario at the most southerly point. We wish to see modelling of another scenario with operations at the most northerly/northwest location to show maximum impacts for R11 and R12. A 3 month monitoring period with southerly winds included was requested.*

Robert McLean



## Response

As presented in Figure 2.3 of the Air Quality Impact Assessment, extraction activities at the Project Site are proposed to be carried out in the south-western quadrant of the Project Site. Topsoil and subsoil is proposed to be used in the construction of three perimeter amenity bunds and for progressive rehabilitation works. Any excess overburden is to be stockpiled at the eastern edge of the extraction area. The access road between the extraction area and Berrima Road, would be to the south of the extraction area. No extraction or overburden dumping, stockpiling works are proposed to be carried out in the north of the Project Site.

Based on the extraction and associated activities proposed, it is considered the modelled scenario reflects the worst case air quality impacts at all surrounding receptors.

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*The onsite monitor requested to monitor and stop work in the event of regulatory breach needs to be a TEOM system. Other monitors such as HVAS air sampler.*

Robert McLean

*Air quality monitor to be installed at R12.*

*Agree to cease operations on days where  $PM_{10}$  exceeds regulatory levels as recorded at nominated sites such as R12.*

Robert and Paula McLean

## Response

Table 7.3 of the Air Quality Impact Assessment provides information on the percentage of 24-hour periods in which the  $PM_{10}$  concentrations predicted as a result of the Project are greater than  $10 \mu\text{g}/\text{m}^3$  (one fifth of the  $50 \mu\text{g}/\text{m}^3$  criterion). As a maximum, it is demonstrated that on 3% of the year (11 days) at Receptor 2, concentrations exceed  $10 \mu\text{g}/\text{m}^3$  and on 97% of the year (354 days), concentrations are lower than  $10 \mu\text{g}/\text{m}^3$ .

Based on the analysis presented within the Air Quality Impact Assessment, and the demonstrated dominance of background  $PM_{10}$  concentrations to the maximum cumulative  $PM_{10}$  impacts, the need for a real time particulate monitoring is not required for this purpose. The analysis provided in the Air Quality Impact Assessment has demonstrated that frequent adverse impacts at all receptors are unlikely as a result of the proposed Project operation.

The Proponent recognises that the scale of its proposed quarry operation is comparatively small – as reflected by the low predicted dust levels at surrounding receptors. Consideration of monitoring should only be considered if it deemed by surrounding residents that the safeguards to control dust appear not to be effective. It is also noted that DECCW has no reference in its submission to the monitoring of dust.

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## Noise

*An independent third party report would appear to be appropriate. The restriction of some activities during adverse weather conditions will be extremely difficult to police and it is unclear how this will be managed. There should not be any operation whatsoever on Saturdays or Sundays under any circumstances.*

Flocolo Family Trust

## Response

The Flocolo Family Trust residence is located approximately 2km from the extraction area. The noise assessment undertaken for the Project showed that the predicted noise levels at this residence (denoted R15 in the *Environmental Assessment* and in the Noise Impact Assessment report (Specialist Consultant Studies Compendium, Part 3) has been predicted:

- not to exceed the 43 dB(A),  $L_{eq(15min)}$  criterion under calm and the prevailing W and NE wind conditions during bund construction activities, which would occur only under neutral and westerly wind conditions to minimise any impacts;
- not to exceed the 38 dB(A),  $L_{eq(15min)}$  criterion under calm and prevailing W and NE wind conditions for the maximum number of truck movements proposed for the Project (4 movements every 15 minutes) during Stage 1 activities;
- not to exceed the 38 dB(A),  $L_{eq(15min)}$  criterion under calm and prevailing W and NE wind conditions for the average 2 truck movements per 15 minutes proposed for the Stage 4 of Project when activities will be confined to >5 m below natural ground level and the average product haulage rate would be higher with campaigns lasting two weeks per month.

In summary, the Flocolo Family Trust's concern over the policing and management of the activities during adverse weather conditions is unwarranted, given that at no time will the predicted noise levels will be exceeded under calm and the prevailing wind conditions (including adverse weather conditions) at the Flocolo Family Trust residence.

The amended *Statement of Commitments* reproduced in Section 4 of this report notes no extraction activities would be undertaken on Sundays and only between 7:00 am and 2:00 pm on Saturdays.

The frequency of extraction operations been on a Saturday would be rare and then it would be confined to a single bulldozer ripping and pushing up shale within the floor of the quarry. The Proponent has added an additional commitment to the *Statement of Commitments* (Section 4, SoC 2.7) nominating that any extraction activity on a Saturday would involve equipment operating out of the line-of-sight of residences north of the Wingecarribee River. Such a commitment, for example, would ensure that soil stripping activities using a scraper on the surface do not occur on a Saturday. The fact that the earthmoving equipment is not visible will in turn mean the noise attributable to the equipment would be less than if it were operating on the surface.

Similarly, the *Statement of Commitments* states no clay/shale product would be despatched off site on Saturdays and Sundays but would occur only between 7:00 am (8:00 am on Sundays) and 4:00 pm at the weekends under special circumstances. Austral has proposed this contingency condition simply to avoid the need to shut down the brick manufacturing plant in the event of protracted period of bad weather. The nature of brick manufacture is such that it is essential to maintain the process operating continuously 24 hours per day, 7 days per week. The Project incorporates a provision for above average traffic levels on weekdays which the Proponent would prefer to adopt, however, the contingency to transport clay/shale on a weekend is recognised to be a rare (but necessary) event.

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*At no time were monitors installed on our property to develop actual noise levels.*

*We are most concerned about the 26 week period constructing the environment bunds where it is admitted in the EA that noise levels could well exceed limits.*

*If noise levels are exceeded for more than 2 weeks then rest weeks are interspersed.*

*No mining operations are allowed on Saturday.*

*Limit the campaigns to no more than 3 per annum, of a month intensity.*

Robert and Paula McLean

## Response

The residence of Robert and Paula McLean (Pingama Pty Ltd), denoted R12 in the *Environmental Assessment* and in the Noise Impact Assessment report (Specialist Consultant Studies Compendium, Part 3) is located approximately 1.4 km from the extraction area, and similar to the Flocolo Family Trust residence predicted noise levels have shown no exceedance of the criterion at this location.

The noise criterion for operational noise at the McLean residence (38dB(A)) was based upon the LA<sub>90</sub> noise level recorded at Site NZ (see *Environmental Assessment* **Figure 5.4**). Even if the default LA<sub>90</sub> level was adopted and a criterion of 35dB(A) used, the noise levels at the McLean residence would still be well below the criterion. Therefore, it is considered to be unnecessary to install noise monitors in more locations than were adopted by Spectrum Acoustics.

Robert and Paula McLean's Table 5.15 displays a predicted noise level during construction of 35dB(A), a level 8dB(A) below the construction criterion. At this level, it is possible that some noise may occasionally be audible at the McLean residence during the construction period, however, the level would be comparatively low and comparable to distant traffic. Noise, even at this level, certainly will not be audible continuously for two weeks during the construction period.

The suggestions by Robert and Paula McLean that no extraction operations be allowed on Saturdays and to limit extraction campaigns to no more than three per year of a one-month duration at a time, is unreasonable as then the Project is not economically feasible. As noted above no exceedances in noise criteria will be experienced at Robert and Paula McLean's residence and hence their concerns over the number of proposed campaigns is groundless.

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## Visual Amenity

*It appears that little consideration has been given to the visual impact on my property and those adjoining it. I would recommend that a more thorough assessment of this impact is undertaken.*

Flocolo Family Trust

## Response

Considerable attention was given to the visual impact from all properties, particularly those to the north of the Wingecarribee River. The assessment was fundamental to the design of the quarry, extraction sequence and the adoption of the planting regime on the northern side of the extraction area. Figure 5.7 from the *Environmental Assessment* clearly shows the active extraction areas will not be visible from houses including those of the Flocolo family. No further assessment is considered necessary.

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### Traffic

*There is a risk of a significant negative impact on economic activity as a result of problems created by traffic jams and roadblocks. This would have an adverse impact on small local business and would be a tremendous negative for tourism.*

Flocolo Family Trust

### Response

The claim that the proposed traffic levels associated with the quarry will result in traffic jams and road blocks is clearly over-stated and not supported by the professional traffic assessment.

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### Economic

*The investment is only \$1m – a figure commensurate with extremely minor capital projects. It seems that the claims of its positive impact are grossly exaggerated.*

Flocolo Family Trust

### Response

Reference is made to the investment of “\$1 million”. This is the capital value associated with the proposed quarry. What is overlooked by the objector is the flow-on effect of the extraction of the shale to the brick plant in Bowral which is valued at \$30 million. Also important in the consideration of the economic value of the Project is the value of the bricks to the NSW building industry, particularly for builders/architects reliant upon on the architecturally unique bricks produced at the plant – from the raw materials to be extracted on the “Mandurama” property.

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### Water Quality, Wildlife Habitat and Native Flora

*The EA concluded “no wildlife habitat corridors occur adjacent to the site in which it could be inferred that noise and traffic may affect the functioning of such a corridor”. We believe this to be incorrect.*

*There is potential for noise to be a factor in bird breeding.*

*Of even greater concern is the risk of suspended solids ending up in the river flooding and runoff following the proposed high fertiliser use for land rehabilitation.*

*Plant reed beds to allow the river to act like a wetland, especially around the bottom dam.*

*Fence off the river from cattle grazing now that quarrying is proposed as the major land use.*

*Commit to a substantial revegetation of the property with native species to reduce noise levels.*

*Commit to an independent endangered and vulnerable native plant study on adjacent properties as well as the site property.*

Robert and Paula McLean

## Response

The proposed extraction area is set back from approximately 800m from the closest point of the Wingecarribee River is an area with extremely low ecological values given its past/grazing agricultural history. The claims that the quarry will adversely affect suspended solids in the river are unfounded (based on the proposed controls) rate of fertiliser used in the land rehabilitation would be no different to that used already on the property (or adjoining properties).

Fencing off the river from cattle grazing and the management of the riparian zone needs to be undertaken in a holistic approach with all landowners and involving Wingecarribee Shire Council (as previously discussed).

The claim that there is a potential for noise affected in bird breeding is highly over stated and given the substantial distances to bird breeding areas and the comparatively low level of activity proposed on the Project Site.

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## 4. STATEMENT OF COMMITMENTS

**Table 4.1**  
**Statement of Commitments for Site Construction, Operations and Management**

Page 1 of 8

Desired Outcome	Action	Timing
<b>1. Area of Activities and Operations</b>		
All approved activities are undertaken in the area(s) nominated on the approved plans and figures (unless moved slightly to avoid individual trees).	1.1 Survey and mark the boundaries of the areas of disturbance on the ground.	Prior to any vegetation clearing.
Satisfaction of the requirement of Industry and Investment NSW for production data.	1.2 Provide annual production data to Industry and Investment NSW (and include in the AEMR).	Annually (July).
<b>2. Operating Hours</b>		
Management of operations in accordance with the approved operating hours.	2.1 Undertake extraction operations between 7:00am and 5:00pm on Monday to Fridays and 7:00am to 2:00pm on Saturdays.	During operations.
	2.2 Undertake product clay/shale despatch between 7:00am and 4:00pm, Monday to Friday, 7:00am and 4:00pm on Saturdays if required due to special circumstances and 8:00am to 4:00pm Sundays if required due to special circumstances.	During operations.
	2.3 Undertake repairs and maintenance between 6:00am and 6:00pm on Monday to Fridays, 7:00am and 6:00pm on Saturdays and 8:00am to 6:00pm on Sundays.	During operations.
	2.4 <u>Design and implement a Notification Protocol to alert all potentially affected residences of the intention to undertake activities outside of normal hours of operation.</u>	<u>During operations.</u>
	2.5 <u>Institute a complaints telephone line for the reporting of complaints (if any) on activities undertaken outside of normal hours of operation.</u>	<u>During operations.</u>
	2.6 <u>Maintain a Complaints Register to record complaints received and actions taken by the Proponent to address the complaints.</u>	<u>During operations.</u>
	2.7 <u>Operate equipment out of line-of-sight of residences north of Wingecarribee River.</u>	<u>Saturdays.</u>



**Table 4.1 (Cont)**  
**Statement of Commitments for Site Construction, Operations and Management**

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Desired Outcome	Action	Timing
<b>3. Traffic</b>		
Minimisation of traffic impacts, including road safety.	3.1 Construct a Basic Rural intersection treatment (BAR) to permit safe and easy access for 19m articulated vehicles to the Project Site from Berrima Road. This would be incorporated with the construction of a new entrance gate and driveway, which would be at least 12.5m in width to comply with AS 2890.2:2002.	During six month construction period.
	3.2 Align the transport route along Cavendish Street in Mittagong to avoid Lyell Street in which a school is located and has parking on both sides of the road.	Prior to off-site transportation.
	3.3 Construct a rubble pit at the western end of the site access road, which all vehicles exiting the Project Site must pass over, to reduce soil and mud on their wheels.	During six month construction period.
	3.4 Seal the last 400m of the site access road from the entrance to the Project Site	During six month construction period.
	3.5 Cover all loads.	Ongoing.
	3.6 Ensure truck drivers adhere to the existing Austral Bricks Drivers Code of Conduct which identifies the required safety and courtesy requirements for drivers travelling to and from all Austral Bricks quarries.	Ongoing.
	3.7 Adopt all safety procedures during the Berrima Road / access driveway intersection construction and incorporate in the Section 138 Permit sought under the Roads Act 1993.	During six month construction period.
<b>4. Surface Water</b>		
Minimisation of potential impacts on surface water quality and supply of the local watercourse system, particularly the Wingecarribee River.	4.1 Commence extraction on the southern slopes of the hill in the middle of the Project Site to minimise the risk of sediment – laden flows to the Wingecarribee River.	Commencement of extraction.
	4.2 Ensure early and progressive revegetation of amenity bunds and rehabilitation of completed extraction areas.	Ongoing.
	4.3 Use of any water sourced from the sedimentation basins for dust suppression within the upslope catchment of a sedimentation basin.	As required.



**Table 4.1 (Cont)**  
**Statement of Commitments for Site Construction, Operations and Management**

Page 3 of 8

Desired Outcome	Action	Timing
<b>4. Surface Water (Cont)</b>		
	4.4 Install sediment control fencing around the amenity bunds under construction and other areas of exposed soil until vegetation has been established.	As required.
	4.5 Construct and operate various surface water management controls such as diversion structures and sedimentation basins.	During six month construction period.
	<ul style="list-style-type: none"> <li>Design operational sedimentation basins including an emergency spillway designed to safely convey the 100-year ARI flow (DECC, 2008).</li> </ul>	During six month construction period.
	<ul style="list-style-type: none"> <li>Inspect sedimentation basins fortnightly and within 24 hours following any rain event exceeding 5mm to check their capacity and integrity.</li> </ul>	Ongoing.
	<ul style="list-style-type: none"> <li>Repair any damaged components of the sedimentation basins as soon as practicable.</li> </ul>	As required.
	<ul style="list-style-type: none"> <li>Discharge sedimentation basins only when water has 50mg/L or less of suspended sediment.</li> </ul>	As required.
	<ul style="list-style-type: none"> <li>Discharge waters within five days after the conclusion of a rain event, at or below the required water quality limit of 50mg/L.</li> </ul>	As required.
	<ul style="list-style-type: none"> <li>Install a marker in each sedimentation basin showing the boundary between the Storage Zone (i.e. the lower zone) and the Settling Zone (i.e. the upper zone) in the basin.</li> </ul>	During six month construction period.
	<ul style="list-style-type: none"> <li>Inspect the level of retained sediment after discharging treated water from any sedimentation basin. If retained sediment exceeds the marked level of the Storage Zone, remove sediment and add to an active stockpile.</li> </ul>	As required.
	<ul style="list-style-type: none"> <li>Regularly review the management procedures for the sedimentation basins to ensure ongoing efficient operation and protection of downstream water quality.</li> </ul>	Ongoing.



**Table 4.1 (Cont)**  
**Statement of Commitments for Site Construction, Operations and Management**

Page 4 of 8

Desired Outcome	Action	Timing
<b>4. Surface Water (Cont)</b>		
Minimisation of potential impacts on surface water quality and supply of the local watercourse system, particularly the Wingecarribee River.	<ul style="list-style-type: none"> <li>Armour potential scour points (e.g. channel inlets/outlets and bends) with rock.</li> <li>Inspect diversion structures monthly and within 24 hours following any rain event that generates flow in the drains to identify areas of erosion, scour or damage. Repair any problem areas and/or take appropriate stabilising action.</li> </ul>	<p>During six month construction period.</p> <p>Ongoing.</p>
	<p><u>4.6 Develop and implement an Environmental Management Plan for the site, comprising:</u></p> <ul style="list-style-type: none"> <li><u>Surface Water Management Plan;</u></li> <li><u>Erosion and Sediment Control Plan;</u></li> <li><u>A Site Water Balance.</u></li> </ul>	<u>Following project approval.</u>
<b>5. Noise</b>		
Minimisation of the noise impacts attributable to extraction and transportation of clay /shale product from the Project Site.	5.1 Construct amenity bunds on three sides (southern, western and northern) of the extraction area and retain the existing tree screen on the eastern side of the extraction area.	During six month construction period.
	5.2 Commence extraction (Stages 1 to 3) on the southern side of the hill, providing noise screening to residences on the northern side of Wingecarribee River, until amenity bunds are fully established with trees.	Commencement of extraction.
	5.3 Align the proposed transport route avoiding wherever possible residential, school and other sensitive receiver areas.	Prior to off-site transportation.
	5.4 Under NE wind conditions, bund construction would be limited to the northern end of the western bund or the northern bund.	During six month construction period.
	5.5 Construction of the southern bund and southern section of the western bund would be limited to westerly wind conditions or neutral conditions.	During six month construction period.
	5.6 Construction of the southern bund and southern section of the western bund would not occur during any transportation campaign.	During six month construction period.
	5.7 Adhere to all hours of operation presented in Section 2.7.1.	Ongoing.



**Table 4.1 (Cont)**  
**Statement of Commitments for Site Construction, Operations and Management**

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Desired Outcome	Action	Timing
<b>5. Noise (Cont)</b>		
	5.8 Regularly service all equipment on site to ensure sound power levels of each item remains at or below that nominated for noise modelling purposes.	Ongoing.
	5.9 Ensure all truck drivers comply with the Bowral Brick Plant Drivers Code of Conduct which outlines procedures for reducing noise impacts during transportation.	Ongoing.
	5.10 <u>Ensure processing of materials will not be undertaken within the Project Site boundary.</u>	<u>Ongoing.</u>
	5.11 <u>Ensure all earth-moving equipment are fitted with mid-frequency band reversing alarms.</u>	<u>Ongoing.</u>
<b>6. Flora</b>		
Minimisation of the spread of weeds, on and off site.	6.1 Quick establishment of a selected cover crop.	During six month construction period and ongoing.
	6.2 Spray weeds with an authorised herbicide.	As required.
	6.3 Ensure all earthmoving equipment is appropriately cleaned prior to being brought to site for each campaign.	Prior to each campaign.
<b>7. Visual Amenity</b>		
Reduce visible amenity impacts.	7.1 Construct 7m high southern and western amenity bunds to screen the views of the extraction area and the surplus overburden stockpile area from the west and south.	During six month construction period.
	7.2 Plant trees screenings at the eastern side of the surplus overburden stockpile area to screen stockpiles from the east.	During six month construction period.
	7.3 Establish a farm forest over the Stage 4 area at the commencement of the project. These trees would be of sufficient height at the commencement of Stage 4 (18 years) to provide screening of the Stage 4 extraction area. Strip clearing as extraction proceeds northward of farm forest would ensure that screening is maximised.	During six month construction period.



**Table 4.1 (Cont)**  
**Statement of Commitments for Site Construction, Operations and Management**

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Desired Outcome	Action	Timing
<b>7. Visual Amenity (Cont)</b>		
	7.4 Screen the extraction area during Stages 5 and 6 from the north by the vegetated northern amenity bund.	During extraction period.
	7.5 Commence progressive rehabilitation of completed faces and all other completed disturbed areas as soon as possible after completion of extraction. Rehabilitation of the southern extraction area wall would be very advanced (13-18 years) and protect against views of extraction faces during Stages 5 and 6.	Ongoing.
<b>8. Air Quality</b>		
Limit the generation of dust and other emissions from site activities.	8.1 Construct vegetated amenity bunds to provide barriers to minimise the spread of dust from the Project Site.	During six month construction period.
	8.2 Commence progressive rehabilitation of all disturbed areas as soon as possible after the completion of excavation in that area.	Ongoing.
	8.3 Use water truck to routinely spray unsealed roads, tracks and stockpile areas.	Ongoing.
	8.4 Routinely spray stockpiles and stockpile transfer points with water.	Ongoing.
	8.5 Cover and effectively seal tailgates of trucks leaving the Project Site.	Ongoing.
	8.6 Install a truck shaker grid near the Project Site exit to minimise the amount of clay adhering to the truck.	During six month construction period.
	8.7 Prohibit all vehicles and machinery from idling unnecessarily.	Ongoing.
	8.8 Maintain all vehicles and machinery in accordance with manufacturers' specifications.	Ongoing.
Limit the generation of dust and other emissions from site activities.	8.9 Amend extraction practices as required during adverse wind conditions to minimise the generation and spread of dust from the Project Site.	As required.
	8.10 Minimise drop heights between front-end loader buckets and truck trays through operator training and education on the management of dust.	Ongoing.
	8.11 <u>Apply dust suppressants (e.g. Gluon or TerraControl) on unsealed roads used for product transport.</u>	<u>In the event that sufficient water is not available on site for dust suppression.</u>



**Table 4.1 (Cont)**  
**Statement of Commitments for Site Construction, Operations and Management**

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Desired Outcome	Action	Timing
<b>9. Soils, Land Capability and Agricultural Sustainability</b>		
Conservation of topsoil resources.	9.1 Strip all available topsoil to a depth of approximately 0.15m from the surface of each extraction stage.	Ongoing.
	9.2 Wherever practicable, place stripped topsoil directly onto the constructed amenity bunds or areas prepared and awaiting rehabilitation.	Ongoing.
	9.3 Stockpile topsoil in predetermined areas for later reclamation if no areas are available. Limit topsoil stockpiles to no more than 2.0m in height to minimise adverse impacts upon the biological activity of the topsoil.	Ongoing.
	9.4 Broadcast a native seed mix to assist with temporary stabilisation if topsoil stockpiles are likely to remain for extended periods.	As required.
	9.5 Avoid excessive handling of soil during the stripping and stockpiling operation and handling when the soils are wet to protect soil structure.	Ongoing.
	9.6 Restrict driving of machinery on the topsoil and subsoil stockpiles, as well as the respread soil, to maximise soil aggregation and prevent compaction, particularly when the stockpiles are moist.	Ongoing.
	9.7 Position stockpiles where run-off water from upslope does not pose a problem.	During six month construction period.
	9.8 Place silt-stop fencing or similar immediately down-slope of stockpiles and amenity bunds where required, until a stable vegetation cover is established.	During six month construction period.
Minimise the potential for soil contamination.	9.9 Restrict all refuelling and vehicle maintenance activities to designated areas which are either sealed, bunded or located with access to spill control kits.	Ongoing.
	9.10 Complete regular house keeping and maintenance of vehicle maintenance areas.	Ongoing.



**Table 4.1 (Cont)**  
**Statement of Commitments for Site Construction, Operations and Management**

Page 8 of 8

Desired Outcome	Action	Timing
<b>10. Heritage</b>		
Comply with the provisions of the <i>National Parks and Wildlife Act 1974</i> (as amended).	10.1 Instruct employees, earthmoving contractors, subcontractors, machine operators and their representatives, whether working in the survey area or elsewhere, that in the event of any bone or stone artefacts, or discrete distributions of shell, or any objects of cultural association, being unearthed during earthmoving, work would cease immediately in the area of the find.	Ongoing.
	10.2 Immediately report the find to the Department of Environment, Climate Change and Water (DECCW) and the relevant Local Aboriginal Land Councils.	As required.
	10.3 In the event that any bone cannot be clearly identified by a qualified archaeologist as being of animal remains, inform the police of its discovery, and officials and/or their representatives of the Illawarra Local Aboriginal Land Council, Wodi Wodi Elders Corporation, and Korewal Elouera, Jerrungarugh, and the Archaeologist, DECCW (Wollongong) advised that the bone is subject to police investigation.	As required.
	10.4 Do not recommence work in the area of the find, until both the police (if unidentified bone has been found) and those officials or representatives have given their permission to do so.	As required.

