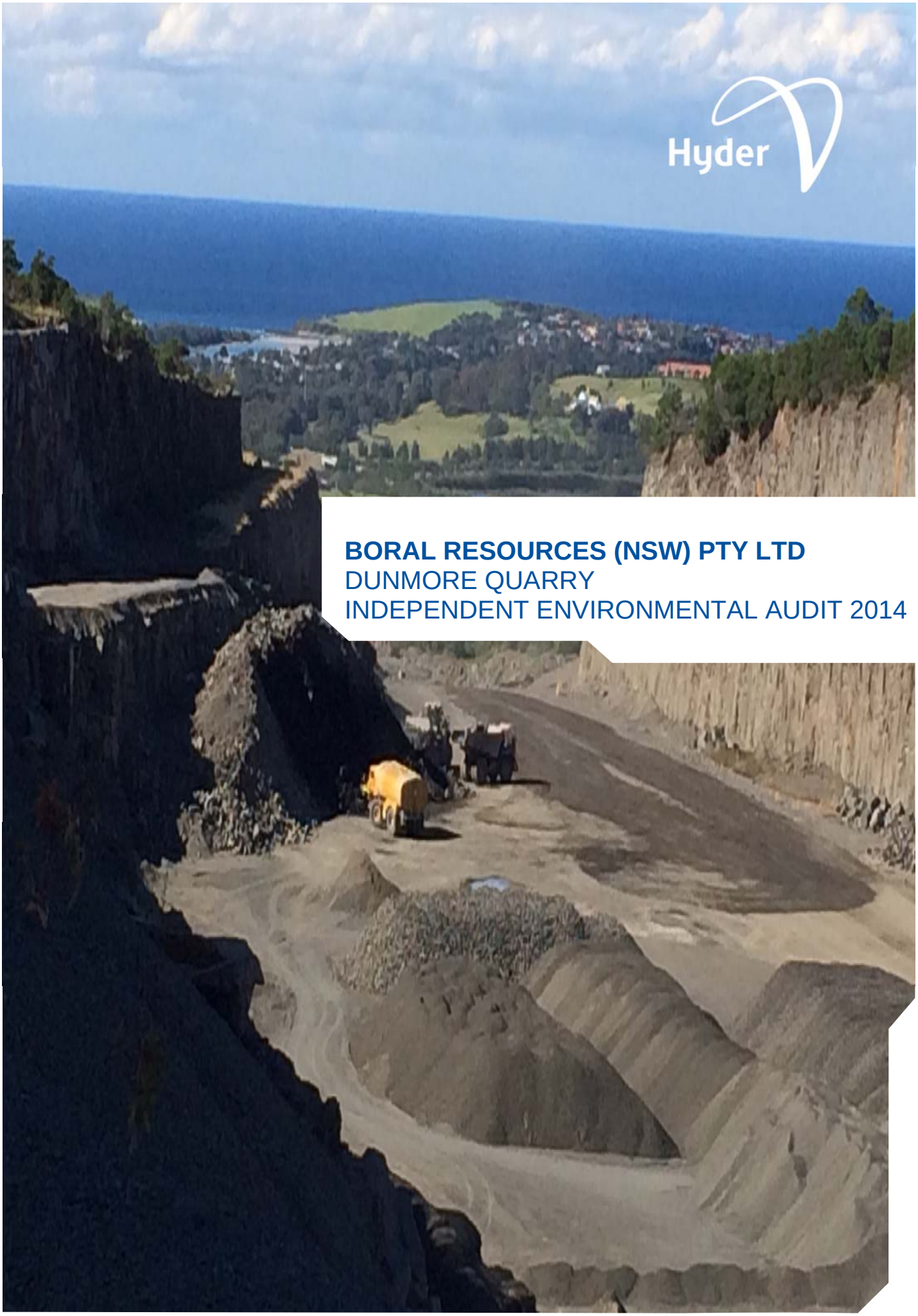


BORAL RESOURCES (NSW) PTY LTD

DUNMORE QUARRY

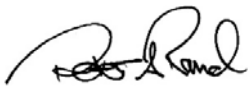
INDEPENDENT ENVIRONMENTAL AUDIT 2014

Hyder Consulting Pty Ltd
ABN 76 104 485 289
Level 5, 141 Walker Street
Locked Bag 6503
North Sydney NSW 2060
Australia
Tel: +61 2 8907 9000
Fax: +61 2 8907 9001
www.hyderconsulting.com

BORAL RESOURCES (NSW) PTY LTD

DUNMORE QUARRY ENVIRONMENTAL AUDIT 2014

Audit Report

Author	Denise Day and Kate Carroll	
Checker	Brad Searle	
Approver	Peter Rand	
Report No	2	
Date	09 June 2015	

CONTENTS

APPENDICES

EXECUTIVE SUMMARY

This audit report has been prepared in response to Schedule 5 Condition 6 of the Ministers Conditions of Approval (MCoA) for Dunmore Hard Rock Quarry owned by Boral Resources (NSW) Pty Ltd. Condition 6 – Independent Environmental Audit - sets out the requirements to assess compliance with the Development Consent and Environment Protection Licence (EPL), review the adequacy of strategies, plans and programs prepared under the consent and EPL, assess the environmental performance of development and recommend actions and measures to improve environmental performance.

This audit has been undertaken in line with the principles and process of *AS/NZS 19011:2003 Guidelines for quality and/or environmental management systems audit.*

Close-out of the 2006 Audit findings

The 2006 environmental audit findings were reviewed, and an assessment made regarding the sufficiency of actions implemented by Boral Resources (NSW) to manage the issue. Of the 23 recommendations identified in the 2006 Audit the current status is as follows:

- Complete and Satisfactory: 16 (DQ1 -14, DQ19 - 20)
- Incomplete/ Satisfactory[1]: 1 (DQ15)
- Incomplete/ Unsatisfactory: 5 (DQ16, 17, 18, 22, 23)
- Complete and Unsatisfactory: 1 (DQ21).

Six of the recommendations from the 2006 Audit have not been implemented, and as a consequence non-compliances in relation to the same conditions or issues were identified in this audit.

Assessment of compliance with the Development Consent conditions

The overall audit findings against the 106 conditions in each schedule of the consent are presented below. Of the 90 'applicable' conditions, 57 (63%) were found to be compliant, six (7%) non-compliant, 20 (22%) compliant in part and seven (8%) not able to be determined.

Audit finding across the consent schedules.

Schedule	Audit finding					Total
	Compliant	Non-compliant	N/A	Compliant in part	Not able to determine	
3	8	0	3	0	2	**13**
4	44	4	11	16	5	**80**
5	5	2	2	4	0	**13**
Total	**57**	**6**	**16**	**20**	**7**	**106**

[1] Note that this has been assessed as incomplete yet satisfactory as the lead auditor disagrees with the recommendation from the previous audit.

Compliance with the Environment Protection Licence

Since 31 August 2006/07 to 31 August 2012/13 a total of 42 non-compliances were recorded, primarily as a result of deficiencies in monitoring actions and reporting requirements. No penalty notices were issued during this period and no exceedences of limits were reported. However, it should be noted that in the absence of monitoring, potential exceedences may not be identified.

Adequacy of strategies, plans and programs

The majority of plans, strategies and programs developed in response to the conditions of consent were found to be lacking, either in terms of meeting the requirements of the relevant condition, being implemented appropriately and/or representing best practice. This is primarily due to a number of the plans and strategies being developed as consultancy reports, rather than as operational documents.

Furthermore, the overall structure of the environmental management documentation is in some cases not clear, and as a result the purpose of documentation is confusing and as such overall integration between plans is poor.

It is recommended that Boral Dunmore Quarry undertake a comprehensive review of all strategies, plans, and programs required under the consent, and a program of annual review be established (note: this is a requirements under Modification 6 to the consent).

Opportunities for improvement

A total of 22 opportunities to promote improvement in terms of regulatory compliance and environmental performance have been presented for Boral's consideration and action.

Overall assessment of environmental performance

Despite the deficiencies noted above, the overall environmental performance based on the observed condition of the site, the low number of incidences and exceedences, and limited number of community complaints, is considered to be **satisfactory**.

From interviews it is evident that staff commitment (particularly at a management level) to responsible environmental management is high, and a number of environmental initiatives, partnerships and actions have been implemented in recent years. However, many of these initiatives have not been strategically linked to management strategies/ plans, or included in reporting and communications. As a result Boral is missing a key opportunity to highlight and demonstrate its ongoing commitment to environmental management at the Dunmore Quarry to regulatory agencies and the broader community. The launch of the new Dunmore Quarry website presents the ideal forum to promote these efforts.

To promote ongoing improvements in environmental performance and compliance, and ensure that risks are managed effectively, it is important for Boral to commit to ensuring that a robust environmental management system is established for the quarry.

1 INTRODUCTION

1.1 BACKGROUND

The Dunmore Hard Rock Quarry owned and operated by Boral Resources (NSW) Pty Ltd is located at Tabbita Road, Dunmore, approximately 12 km northwest of Kiama in the Shellharbour local government area. The quarry produces hard rock which is crushed to produce coarse aggregates and road construction materials, and fines that are used as manufactured sand or bedding material, and to produce NusoilTM, a soil additive and conditioner to assist in increasing agricultural yields.

An Environmental Impact Statement (EIS) *Environmental Impact Statement for the proposed Dunmore Quarry Production Increase*, Volumes 1 and 2, dated November 2003, was prepared by RW Corkery & Company Pty Ltd. The quarry operates under a Ministerial consent granted on 19 November 2004 issued for the Development Application DA 470-11-2003. The consent allows Boral to produce up to 2.5 million tonnes of hard rock a year (Mtpa), and transport it offsite by road and rail to local and regional markets.

Since the consent was issued there have been six approved modifications (with conditions), as detailed below:

1. Modification 1 - December 2005
2. Modification 2 – June 2006
3. Modification 3 – May 2008
4. Modifications 4 and 5 – November 2008
5. Modification 6 – Increased extraction area and road haulage, February 2014.

The most recent version of the Development Consent, which includes the changes made by each modification, is presented in Appendix A.

Schedule 5 Condition 6 of the original consent included a requirement to commission an Independent Environmental Audit within 2 years of the consent being issued, then every 5 years thereafter. The draft conditions for Modification 6 include changes to this condition, so that the requirement for an Independent Environmental Audit is as follows:

> 6. *Prior to 1 April 2014, and every 3 years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:*
>
> **a** *be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;*
>
> **b** *include consultation with the relevant agencies;*
>
> **c** *assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent and any relevant EPL (including any assessment, plan or program required under these approvals);*
>
> **d** *review the adequacy of any approved strategy, plan or program required under these approvals; and*
>
> **e** *recommend measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under these approvals.*

The first Independent Environmental Audit covering the period 30 September 2004 to 31 December 2006 was undertaken by RW Corkery Pty Ltd and the audit report approved in February 2007.

1.2 AUDIT SCOPE & TIMEFRAME

1.2.1 AUDIT SCOPE

The audit fulfils the requirements for the Independent Environmental Audit, as outlined in the above Modification 6. To meet these requirements the audit:

1. Assessed compliance with the environmental conditions in the Development Consent (DA 470-11-203), and any modifications. This audit covers the environmental conditions included in Schedules 3, 4 and 5 only
2. Assessed compliance with the requirements of the consent and the Environment Protection Licence (EPL 77), and any relevant modifications
3. Reviewed the adequacy of any approved strategies, plans or programs required under the consent
4. Assessed the environmental performance of the development
5. Reviewed the actions implemented in response to the findings of the audit report submitted in 2006
6. Consulted with the relevant agencies
7. Recommend measure or actions to improve the environmental performance of the development and any assessment, plan or program associated with the consent.

1.2.2 AUDIT TIMEFRAME

The purpose of this section is to define the timeframe for this audit, based on the requirements of the consent and delivery of previous audits. Establishing the audit timeframe is important as it will clarify what needs to be considered during the audit in terms of the:

- DA modifications and subsequent changes to the consent
- EPL returns and compliance
- versions of strategies, plans and programs that require review.

Based on the audit conditions in the consent the required audit schedule for the Dunmore Quarry is presented in Table 1. As an audit was not conducted in 2011 it is proposed that the timeframe for this audit is the period December 2006 to March 2014.

Table 1: Audit schedule based on the conditions of consent

Audit number	Frequency	Date due	Date issued
Consent issued		November 2004	N/A
First audit	Within 2 years of date of consent	November 2006	February 2007
Second audit	Every 5 years	November 2011	Not conducted
Third audit	Prior to April 2014	April 2014	This report
Fourth audit	Every 3 years	April 2017	N/A

1.3 REPORT STRUCTURE

This Independent Environmental Audit report is presented as follows:

Executive Summary

Section 1: introduction, including the audit scope, timeframe and context.

Section 2: presents the audit methodology, the activities undertaken in the delivery of the audit and the assessment terminology used in this report.

Section 3: presents the non-compliant findings and recommendations from the previous Independent Environmental Audit report (Corkery & Co, 2007), the auditee response and an assessment of the adequacy of the response.

Section 4: covers compliance associated with meeting the requirements of the Development Consent, and any relevant modifications.

Section 5: covers compliance associated with meeting the requirements of the Environmental Protection Licence (EPL 77), and any modifications.

Section 6: presents the findings of the review of the adequacy of approved strategies, plans or programs required under the consent.

2 AUDIT METHODOLOGY

This audit has been undertaken in line with the principles and process of *AS/NZS 19011:2003 Guidelines for quality and/or environmental management systems audit.* An overview of the approach to be applied in undertaking this audit is presented below.

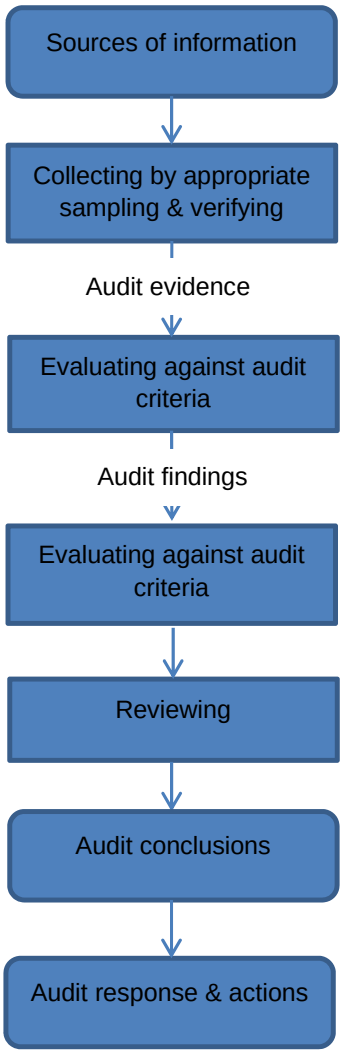


Figure 1: Overview of the audit process

The methods used to collect information and evidence included:

- Document review: this included the following documentation:
  - the project EIS
  - previous audit reports
  - strategies, plans and programs prepared for the management of Dunmore Quarry
  - annual environmental reports
  - monitoring outputs and reports
  - communications between Boral and government agencies

- recommended and relevant best practice Standards and guidelines.

- Interviews: these were conducted with relevant staff from Boral. Interviewees are listed below.
  - Todd Kalajzich (Dunmore Quarry Manager)
  - Rod Johnson (Environment Manager - NSW/ACT)
  - Kate Jackson (Planning and Development Manager BPG (NSW/Southern Region))
  - Maziar Shaban (HSE Advisor – Illawarra)
  - Mel Goodall (Dunmore Environment Officer)
  - Sharon Makin (Environment Advisor)
- Observation of activities and visual site verification: Two site visits were conducted to undertake interviews, verification processes and on-site inspection on the following dates:
  - 06/05/2014 (Brad Searle and Peter Rand)
  - 05/08/2014 (Denise Day and Kate Carroll).

2.1 ASSESSMENT TERMINOLOGY

The following terminology has been applied in assessing compliance with the requirements of the Development Consent and EPL, reviewing the actions implemented in response to the previous audit and assessing the effectiveness and adequacy of strategies, plans and programs.

Table 2: Audit assessment terminology

Assessment	Definition
Compliant	Effective processes have been established and implemented that are consistent with the requirement.
Non-compliant	Failure to develop and/or implement processes to meet the requirement to an effective standard.
Compliant in part	Processes have been developed and/or implemented that enable the requirement to be met in part.
Opportunity for improvement (recommendation)	Opportunity to implement changes that may add value and/or clarity to processes.
Not applicable	Requirement not applicable (e.g. if closed out in previous audit).
Not able to determine	Compliance could not be assessed due to insufficient information being available.
Complete	Non-compliances and recommendations from the previous audit have been addressed and finalised.
Incomplete	Non-compliances and recommendations from the previous audit have not been have been finalised.
Satisfactory	The actions implemented in response to non-compliances and recommendations from the second year audit are sufficient to manage risks.

Assessment	Definition
Unsatisfactory	The actions implemented in response to non-compliances and recommendations from the second year audit are insufficient to manage risks.

Opportunities for improvement (recommendations) have been numbered using the same system as the 2006 Audit, that is, **DQ**(recommendation number)**/14**.

2.1.1 AUDITOR QUALIFICATIONS

Schedule 5, Condition 6 of the Development Consent (February 2014) specifies that the Independent Environmental Audit must:

a) *be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;*

In a letter dated 05/03/2007 from the Department of Planning to Boral Resources it was requested that audits be undertaken by a person(s) who have had no involvement with the quarry in either preparation of documentation for post-approval management and/or monitoring of the construction and operation of the development.

This Independent Environmental Audit was conducted by:

- **Denise Day** – Lead Environmental Auditor (Certificate No: 14760); Principal Environmental Consultant.
- **Bradley Searle** – Principal Environmental Auditor (Certificate No: 113169), Principal Environmental Consultant.
- **Kate Carroll** - Environmental Auditor (Certificate No: 113258), Ecologist.
- **Peter Rand** - Technical Director (Environment).

A letter of endorsement of the audit team was provided by Planning and Infrastructure, dated 31 March 2014. None of the team engaged for this audit have had any previous involvement with the Dunmore Quarry.

2.2 AUDIT RESPONSE AND CLOSE-OUT

To promote a timely and appropriate response to the 'opportunities for improvement' (recommendations) identified through the audit, Boral was provided with the option of providing a response and evidence of implementation of actions prior to close-out. These audit responses are also presented in the compliance assessment tables, along with evidence or statements of commitment for implementing the response. Where the response is deemed sufficient to close-out the audit finding an assessment of satisfactory and complete has been provided in parentheses.

The aim of this process is to avoid weaknesses in the follow-up process associated with the 2006 Audit (refer to Section 3.1 for details).

3 2006 INDEPENDENT ENVIRONMENTAL AUDIT CLOSE-OUT

This section presents the historic non-compliances and recommendations identified previously in *Dunmore Hard Rock Quarry Environmental Audit 30 September 2004 to December 2006* (RW Corkery & Co, 2007) (the 2006 Audit) and the response implemented or actions taken by Boral Resources (NSW) to address the issue. An assessment of the appropriateness and adequacy of the response is also presented, along with recommendations for further improvement, where applicable.

3.1 AUDIT FINDINGS FROM 2006 AUDIT

The 23 recommendations arising from the 2006 Audit are presented in Table 3. The 2006 Audit identified that a substantial portion of the non-compliances related to the failure to submit documentation to government agencies within the required timeframes and/or inadequacies within the documentation. As a consequence a number of the 2006 Audit recommendations related to establishing systems, processes and organisational responsibilities in order to promote increased compliance with the conditions of consent in the future (e.g. DQ16, 17 and 18).

Following the audit Boral responded by identifying the actions to be undertaken to address the recommendations, along with a proposed timeframe to implement actions. This was provided to Department of Planning (DoP) in a letter dated 23/02/2007, with a follow-up letter dated the 31/05/2007 providing an update on the implementation of actions (marked in red in Table 3). No further updates were issued to the Department following this letter due to many of the issues listed being classified as ongoing (K Jackson 2014, pers. comm. email, 17 July).

The current status of the 23 recommendations associated with non-compliance issues identified in the 2006 Audit are as follows:

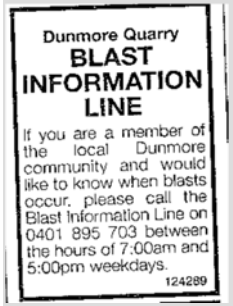
- Complete and Satisfactory: 16 (DQ1 -14, DQ19 - 20)
- Incomplete/ Satisfactory[2]: 1 (DQ15)
- Incomplete/ Unsatisfactory: 5 (DQ16, 17, 18, 22, 23)
- Complete and Unsatisfactory: 1 (DQ21).

Seventeen of the twenty three recommendations have been implemented to a satisfactory rating, while six of the recommendations from the 2006 Audit have not been implemented. Importantly, recommendations D16, 17 and 18 were designed to address the ‘root cause’ of many of the non-compliances. As such, similar non-compliance issues have been identified in this audit (see Section 4.1).

Although many of the non-compliances would not be considered high risk in terms of environmental harm, the result of ongoing non-compliance is that there is a breakdown in communication between the regulator and proponent.

[2] Note that this has been assessed as incomplete yet satisfactory as the lead auditor disagrees with the recommendation from the previous audit.

Table 3: 2006 Environmental Impact Audit close-out actions

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
Operations			
DQ1/07: The existing system of blast notification should be advertised within a local newspaper and the Director-General approached in relation to his/her satisfaction of the alternative blast notification system in accordance with *Condition 4(19)*. *It is in the Company's interests to ensure that the current blast notification system is satisfactory to the Director-General and advertised within the local newspaper on an annual basis.*	A blast notification system has been in place with the most affected residence (McParland). No other community members including CCC members have indicated an interest in being notified of when blasts occur. Given this, Boral would like to put forward the current system as an 'alternative' blast notification system for the Director-Generals approval instead of advertising a blasting hotline in the local paper. This will be initiated through a separate letter to DoP. Following phone discussions with Michael Young, Boral will advertise a blast information line in the local paper (the Lake Times) in addition to the procedure with the residents of the McPharland property rather than proposing an alternative system. Boral plans to place the article before 30 June 2007.	Copies of blast information notices prepared for the local paper. Copies of emails sent to residents of the McPharland property regarding blasting. This was to be completed within 1 month of the update being issued.	**Complete and Satisfactory** An advertisement regarding the blast information line (0401895703) was placed in the Lake Times on the 31/10/2007. When blasting is to occur the Quarry Manager also calls the  McParland property, and quarry staff check that no one is working on the property adjacent to the quarry. Dunmore Quarry BLAST INFORMATION LINE If you are a member of the local Dunmore community and would like to know when blasts occur, please call the Blast Information Line on 0401 895 703 between the hours of 7:00am and 5:00pm weekdays. 124289
DQ2/07: Additional enforcement actions should be implemented to ensure that all product trucks leaving the site utilise the wheel wash facilities. *It is understood that not all trucks leaving the site use the wheel wash.*	To ensure that all loaded trucks pass through the wheel wash when leaving the site, the following additional enforcement measures will be put in place: Re-education: • a memorandum will be sent out to all company trucks stipulating that using it is mandatory; • the same memo will be posted at the weighbridge for all company and non-company truck drivers to see. The weighbridge attendant will be briefed to not issue dockets to trucks that have not used the wheel wash; and • the memo will also be circulated to all site supervisors as a reminder to keep vigilant and re-educate those drivers who try to bypass the wheel wash. The memorandum was circulated to the recipients above on 23 March 2007.	Copy of the memorandum. Has it been recirculated and/or covered in subsequent toolbox talks? (need to ensure ongoing compliance). Site visit: observe trucks leaving the site, check if a copy of the memo is posted at the weighbridge. Interviews: truck drivers and supervisors.	**Complete & Satisfactory** A copy of the memo was sighted and all trucks observed leaving the site used the wheel wash.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ3/07: A Job Safety and Environmental Analysis ("JSEA") should be completed prior to undertaking any activity on site. The JSEA analysis should include provisions for supply of appropriate waste and recycling bins, soil management, erosion and sediment control etc. and reference relevant environmental management plans and procedures, e.g. hydrocarbon use and storage practices. *The use of a JSEA would benefit the Company through avoidance of environmental incidents, improved recycling and reduced wastage. It is important that the work culture is such that both safety AND the environment is considered before a job is commenced.*	Although this is a valid recommendation, Boral would prefer to initiate a 'step back' process to be used prior to undertaking certain activities that may pose a risk to the environment. The step back process works as follows: Prior to undertaking certain activities that are known to have potential environmental risks, and whilst completing a Job Safety Analysis (JSA), a 'step back' card will be completed. The 'step back' card will have a checklist with a list of standard tasks and corresponding environmental risks with relevant controls. If the task/job has a corresponding environmental risk, then the relevant controls will need to be put in place. The 'step back' card will need to be signed off by the site supervisor along with the JSA prior to completing the task, and after the job is completed satisfactorily. All site employees will be educated of this procedure during a site team brief, and follow-up reminders will be included in toolbox meetings at the commencement of the shift. Ongoing	Job Safety Analysis/ 'step back' card/ checklist. Evidence of completed and signed 'step back' card. Toolbox talks dates and topics.	**Complete and Satisfactory** A Safe Work Method Statement (SWMS) (form 012-F01) is part of the 'step back' process and is required to be completed for tasks where the risk has been assessed as medium or higher. The 'step back' process is also covered on a regular basis during toolbox meetings. Refer to Appendix B: (i) for a copy of the SWMS used onsite.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
Water Management			
DQ4/07: All sumps, basins and other catchments structures within the storm water management system should be regularly inspected, particularly following rainfall events, and any necessary desilting or other works required to maintain efficient functioning completed. A schedule should be prepared to record appropriate intervals for regular inspections. *It is understood that Condition 4(32) relates to basins within a storm water management system that was initially proposed but has now been superseded. Regardless, it is considered important that the entire surface water management system is regularly inspected to ensure efficient operation and proper function. The desilting required in accordance with Condition 4(38) was undertaken, however, the drains are now again choked and need to be desilted. Desilting needs to be undertaken regularly to re-instate the functions of the drains on site.*	A schedule has been developed with a checklist to inspect the drains and sumps within each of the catchments on site. This checklist will be completed every 3 months, and following rain events. Desilting the drain referred to in Condition 4(38) will be undertaken as a priority. This is being undertaken. The quarterly checklist has been entered into the maintenance management system for actioning every quarter. The drain mentioned in Condition 4(38) is shown cleaned out below. Photo taken 30 March 2007.	Copy of the schedule and checklist. Evidence of completed checklists (every 3 months).	**Complete and Satisfactory** A 3-monthly inspection checklist (3M-PO- Inspect-Sediment-Ponds-Drains-Checklist) has been set up on Borals' electronic asset management (EAM) system. This document (see Appendix B: (ii)) is automatically emailed to the site environment officer. Copies of completed checklists are filed on the local drive.
DQ5/07: The on-site drainage channels should be inspected and all waste removed and properly disposed of. *During the audit, a number of drainage channels were observed to contain numerous items of waste (e.g. Photo 16). The presence of this waste may reduce the effectiveness of the drainage channels and may wash into the water supply dam creating both operational and environmental problems.*	The drainage channels will be cleaned out immediately. The inspection checklist mentioned in DQ4/07 will also be used to ensure drains are free of debris/waste. Material that could be cleaned safely was undertaken immediately. Some debris which is caught in the steep section of the drain, and that has vegetation inhibiting access, will be cleaned out the next time a large crane and basket will be used on site.	Copy of the schedule and checklist. Evidence of completed checklists (every 3 months).	**Complete and Satisfactory** See above. A number of drains and channels were inspected during the site visit and all were found to be clear of waste and weeds.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ6/07: All hydrocarbon bunds around the site should be initially inspected /measured to ensure they have adequate capacity (i.e. 110% of the largest container) and be regularly inspected to ensure integrity of the bund is maintained, a full spill kit is nearby and that all hoses and connections are kept within the bund. The regular inspections of bund integrity should be included within the monthly checklist. *It is understood that the existing diesel tank is being replaced by a self bunded tank, however, it is important that all hydrocarbons elsewhere on site are stored in accordance with relevant Australian Standards and regular inspections undertaken. It is desirable that the results of all inspections are documented.*	An inspection of all bunds on site will be undertaken to ensure they are in accordance with Condition 4(39) and documented. If bunds are found to be inadequate, they will be upgraded. An inventory will also be undertaken of all the spill kits on site, to ensure that they are available in all areas where hydrocarbons are used and that they are fit for purpose. The existing diesel storage tanks and bund is being replaced by a 55,000 L self bunded tank. This will be installed during March 2007. The inspection of the bunds has yielded that there is enough capacity within the bunds to hold 110% of the largest container. It is acknowledged that the current fuel and oil containment facilities are not ideal. For this reason Boral is intending to establish a new workshop and updated facilities in a different location early in the 2007/2008 financial year. Details of this will be provided to the Department when the design is finalised. Given that the facilities are proposed to be relocated, a S96 1(a) modification will be needed.	Site visit: observation of chemical storage area(s) and spill kits. Design specifications for the bunded area. Size of largest container.	**Complete and Satisfactory** The diesel storage tank has been replaced with a 600,000 L self bunded container. A covered and bunded hydrocarbon storage area is located along the outside wall of the new workshop shed (see Appendix B: (iii)) which meets the requirements of this condition. A number of spill kits were observed in the workshop area (see Appendix B: (iv)).
DQ7/07: All hydrocarbons should be stored within adequately bunded areas and proper hydrocarbon use and management practices reinforced during toolbox meetings. *A number of unbunded 205L and 20L hydrocarbon drums were observed during the audit a short distance from bunded areas. Bunding of hydrocarbons is an essential environmental and safety precaution that should be strictly adhered to at all times.*	All site employees will be re-educated about proper storage of hydrocarbons during the next site team brief and re-enforced during toolbox meetings. Although this occurred, it was unable to be found on the toolbox records. It will be undertaken again and documented.		**Complete and Satisfactory** All hydrocarbons were stored in the bunded storage area, or were in self-bunded containers.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ8/07: The material contaminated with hydrocarbons within the remediation bunker should be spread out within an area consistent with standard remediation practices with appropriate additives to achieve more effective remediation. *The current remediation facility (Photo 19) is more appropriately a stockpile of hydrocarbon contaminated material. The need for such an on-site (and carefully managed) remediation facility is evident by the amount of material stockpiled and observed around the site.*	The remediation area will be separated into 3 bays; an on-line bay for newly contaminated material, a bay for material that is undergoing remediation and a bay with remediated material ready for use in site rehabilitation. The material in each bay will be spread out at a depth <700 mm to receive adequate aeration. A simple and clear procedure will be written to explain this to on-the-ground staff, and the area will be entrusted to a site supervisor to manage. Further investigation has revealed that much of the material identified during the audit to be contaminated, was dust collected from the plant dust collectors stockpiled ready to be blended with finer products. The material was wet at the time of the audit and looked to be contaminated with hydrocarbons – this is not the case. Accordingly, the volume of material that was thought to need remediation has significantly reduced. As such, the remediation area has remained as one bay and has been spread out in a layer less than 700 mm in height and treated with Enretech 1.	Site visit: observations of the remediation area Copy of the procedure.	**Complete and Satisfactory** The contaminated material bay was observed (see Appendix B: (v)). Hydrocarbon contaminated soil was spread out and turned daily.
DQ9/07: The source of the hydrocarbon staining on the roadside adjacent the workshop should be investigated and appropriate remedial action taken. *It appeared that the hydrocarbon staining was sourced from within the bank adjacent the road. It is important that all hydrocarbons are disposed of correctly and remedial actions taken for past activities which have resulted in hydrocarbon contamination.*	This is currently being followed-up. This has been cleaned. The cause of the spill is unknown.	Interview Site visit: observe the site adjacent to workshop.	**Complete and Satisfactory** The hydrocarbon staining on the roadside adjacent the workshop had been treated. The source of the staining was determined to be a burst hose and was not related to an ongoing leak.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ10/07: Greater emphasis (and regular education) should be placed upon the segregation and placement of waste and recyclables into the correct on-site waste disposal bins such as through the use of the following. a) Use of well labelled and/or distinctively coloured bins (of which a number are already placed around the site). b) Provision of additional disposal bins at appropriate locations. c) Discussion and education during toolbox meetings. d) Employees and contractors should be encouraged to provide suggestions on how to "make it easier" to segregate waste and recyclables. *It was evident during the audit that further separation of recyclables was possible and that in some cases, separation has not been achieved due to either lack of employee education or motivation (Photos 14 and 15). Further, in many cases, bins/ skips were overflowing and contributing to poor housekeeping (Photo 21).*	A site meeting has been scheduled with Boral's waste solutions contractor Veolia for 23 February 2007. The meeting will involve a waste audit and investigation into opportunities for recovery/recycling of further waste streams such as timber and rubber, not currently captured on site and whether more bins are needed. The possibility of colour coded bins will also be explored. Employees will be consulted on ways to "make it easier", and will also be toolboxed on the solutions/outcomes that come from the waste audit. The discussions and site meeting with Veolia resulted in further investigation to ascertain whether it is viable locally to recycle rubber and timber waste. Due to the low volumes of timber waste being generated on site, it was recommended to collect enough timber waste in a designated area and periodically engage subcontractor Cleanaway to empty the bin for recycling. This will be undertaken when needed. One rubber recycler was found locally in Unanderra. Again, the material would need to be stored in a designated area until enough was gathered, with Boral having to arrange transport to the Unanderra Depot. Again, this will be undertaken when needed. The issue of colour coded bins is problematic due to the bins being owned by the contractor and used at multiple sites. Versatile signage that can be temporarily appended to the bins will be explored as a possible solution to "make it easier". These measures will be included in toolbox meetings upon implementation.	Site visit: observe waste and recycling bins (timber and rubber). Toolbox topics and dates. Signage on bins.	**Complete and Satisfactory** Waste recycling bins were observed both at the site office and workshop area. All areas were tidy, and no rubbish was sighted anywhere around the site.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ11/07: Consideration should be given to undertaking blast monitoring at Residence A (McParland) for a period of time to establish the correlation between monitoring results at the residence and the intermediate monitoring point. *The existing intermediate blast monitoring point currently does not allow the determination of compliance with the nominated criteria at surrounding residences as specified in Conditions 4(16) and 4(17). It can be reasonably assumed when results are below nominated criteria at the intermediate monitoring point, compliance is being achieved, however, when levels exceed nominated criteria at the immediate monitoring point, it is in the Company's best interests to be able to determine levels experienced at surrounding residences, particularly the McParland residence.*	The current blast monitoring location was determined in consultation with the Department of Environment and Conservation (DEC) and was the location used to determine the predictions in the EIS. It is also the site nominated in Condition 4(21) which is reflected in the Environment Protection Licence (EPL). The advice in the recommendation will be considered at such time as Condition 4(20) becomes applicable i.e. when blasting is carried out within 250 metres of the McParland property. Ongoing	Interview.	**Complete and Satisfactory** A blast monitoring device has been established approximately 90 m from the McParland house. The intermediate monitoring point at the farm house, about 700 m to the north, has been maintained.
DQ12/07: Consideration should be given to installing an additional dust gauge at Residence A (McParland) for a period of 12 months to demonstrate compliance with nominated criteria. Reference in future AEMR's to deposited dust levels recorded as part of Dunmore Lakes Project – Stage 1 would be beneficial. The existing monitoring locations should be maintained to enable a relationship between the gauge at the residence and the intermediate gauge to be established. The existing deposited dust monitoring locations reported in the 2005/2006 AEMR currently do not allow the determination of compliance with the nominated criteria at surrounding residences. It can be reasonably assumed when results are below nominated criteria at the intermediate monitoring point, compliance is being achieved, however, when levels exceed nominated criteria, it is in the Company's best interests to be able to determine levels experienced at surrounding residences.	Again, these deposited dust monitoring locations have been in existence for approximately 10 years and were used to make predictions in the EIS. The DEC has subsequently approved the locations and these are the locations included in the EPL. Consideration will be given to this recommendation, if deposited dust results in the direction of the McParland property (Site 2) show elevated levels of ash in the future samples. Reference will be made to deposited dust levels recorded as part of the Dunmore Lakes Sand Project – Stage 1 monitoring in the 2006/2007 AEMR as a means of determining compliance. Ongoing		**Complete and Satisfactory** Current monitoring arrangements have been approved by the OEH and EPA, and are therefore deemed appropriate to meet the condition requirements.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ13/07: The electrical conductivity (i.e. reflecting salinity) together with other water quality parameters of the water within the water supply dam should be tested on a regular basis (say quarterly), particularly whilst water is being pumped from saline areas of Rocklow Creek. *It is understood that a range of water quality monitoring will be undertaken upon completion of the planned upgrade of the water supply dam and construction of the sediment dam, however, it is important that the Company understands the quality of water currently within the water supply dam. The presence of salt on site roads (Photos 22) is an indicator that care needs to be taken when using water for dust control, particularly around plant and equipment.*	This will be included in the surface water monitoring program on a monthly basis. This has been undertaken for monitoring from February 2007 onwards.	Water quality monitoring data. Is water still being pumped from saline areas of Rocklow Creek (or has the dam replaced this need)?	**Complete and Satisfactory** Electrical conductivity (EC) is one of the water quality parameters being monitored in the water supply dam. Water is no longer being pumped from Rocklow Creek.
Documentation			
DQ14/07: The necessary documentation and correspondence should be located to demonstrate compliance (or otherwise) for the following conditions within Schedule 4. • 1(b) – Submission of extraction limit survey plan. • 14 – Submission of Noise Monitoring Program. • 15 – Submission of noise monitoring results detecting exceedances to DEC and Director-General. *It is important that the Company can demonstrate compliance with all conditions of consent.* etc.	This will be undertaken. Some of these matters have been discussed with Michael Young during a recent phone conversation. The extraction limit plan has not been located in a search of internal records and has been re-surveyed recently from extraction markers. This plan will be submitted to the Department before 30 June 2007.	Copy of the extraction limit plan (2007). Noise monitoring data. Evidence of ongoing documentation.	**Complete and Satisfactory** Plan of Extraction Limit Survey Mark, prepared by Craven, Elliston and Heyes (Dapto) 09/02/2008. Evidence of noise monitoring programs and data being submitted to DEC is evidenced through the AEMRs, and is also summarised biannually for the CCC.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ15/07: All relevant authorities should be approached seeking confirmation that the versions of documents supplied are satisfactory. Upon receipt of such advice (or after the documents have been upgraded), all documents should be identified as the "Approved" version and incorporated into the overall Environmental Management System. All documents will require revision dates etc. *During the audit, it was established that a range of documents had been compiled and forwarded to, for example, the Department of Planning, Department of Environment and Conservation and Rural Fire Service. However, no formal response has been received indicating, as required by the Condition, that those authorities were "satisfied with" or had "approved" the use of the document. This needs to be re-addressed.*	This will be undertaken. Ongoing	Review document management system, version control and approvals	**Incomplete, yet Satisfactory** Generally, there has not been follow up with relevant authorities to confirm that documents and information submitted is 'approved' or 'to the satisfaction of the Director General'. In general, it is assumed that if no formal response is received, then the authorities were "satisfied with" or had "approved" the use of the document. The Lead Auditor (Denise Day) disagrees with this recommendation and believes that it is the relevant agencies' responsibility to provide a timely response and approval, as required.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ16/07: The existing collection of environmental management documentation should be compiled into a more formal Environmental Management System and include: • the Environmental Management Strategy; • the Environmental Monitoring Program; • the various management plans and procedures; • results of environmental monitoring; • copies of all approvals, licences and permits; • results of internal audits and inspections; • the complaints register; • the waste register; • minutes of environmental based meetings; • correspondence to government agencies; and • all documentation required to demonstrate compliance (see separate **Recommendation DQ16/07**). *A more structured document system (with appropriate document control) and identification of documents available electronically would assist all parties in the environmental management of the site.*	This is valuable feedback and will be undertaken. Ongoing	Review document management system, version control and approvals	**Incomplete/ Unsatisfactory** The management system for environmental documentation is still not well structured and transparent. Boral staff assisting the audit had difficulty in locating several documents, in particular correspondence relating to the submission of compliance requirements and discussions between Boral and relevant agencies. Although this was in part due to the site Environment Officer not being available for the majority of the audit, it does raise concerns regarding the management of environmental compliance should the position change. **Opportunity for improvement** A more structured document system (with appropriate document control) and identification of documents available electronically. All correspondence should be appropriately stored as documents, rather than in personal work email folders.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ17/07: A compliance folder or similar electronic system should be compiled that provides for the assembly of all relevant data, correspondence, example photographs etc. required to demonstrate compliance with all relevant conditional requirements. *The review of documentation for the audit took considerably longer than planned as all required documentation was not available in one location and some documentation was missing. In some cases, e.g. demonstrating compliance within approved hours of operation, suitable documentation could not be identified. The assembly of such information in an easily accessible form would be of value for all future internal and external audits.*	The formulation of a compliance folder will be undertaken. Consideration will be given to formulating a better means of demonstrating compliance with operating hours etc. (See response to DQ20/07) Ongoing	Review compliance/ document management system, version control and approvals	**Incomplete/ Unsatisfactory** See DQ 16/07 above.
DQ18/07: Environmental management responsibility and accountability for all environmental tasks should be clearly attached to each employment position. This would in effect result in the preparation of a site organisational structure that clearly records responsibility by position. These responsibilities should then be reinforced during toolbox meetings and included with individual job descriptions. *It would be preferable if all Company employees recognise that each employee has a number of environmental management responsibilities rather than all environmental responsibilities being assigned solely to the Environment and Community Advisor. Improved environmental management can be achieved simply through improved awareness of individual responsibilities. The outcomes from this process should then be summarised in Section 4.3 of the Environmental Management Strategy.*	This is valuable feedback. An environmental management accountability and responsibility structure will be created for the site, with the intention of capturing areas needing improvement as a result of the audit. The outcome of this will be summarised in Section 4.3 of the Environmental Management Strategy. Ongoing	Interviews: roles and responsibilities Organisational chart Position descriptions	**Incomplete/ Unsatisfactory** Section 4 of the Environmental Management Strategy (2014) states the following management responsibilities, personnel and roles. Quarry Manager - overall responsibility Environment Officer – analysis and reporting of environmental monitoring, incident reporting and implementing Development Consent and EPL requirements Site supervisors and operators – responsible for notifying management of environmental impacts and incidents. The information is scant and does not provide information regarding responsibilities by position. The position description for the Environment Officer could not be located.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ19/07: All future AEMR's should be prepared addressing all requirements nominated in *Condition 5(5)*. *The 2005/2006 AEMR does not adequately address the requirements listed in Condition 5(5). Whilst the document presents a satisfactory level of information about various environmental management activities on-site, it is lacking in detail on describing "the works carried out in the last 12 months" and "that will be carried out in the next 12 months". Some information is included in the document although it is scattered through various sub-sections. Further, there needs to be a greater level of analysis of monitoring results to meet the requirements of the condition and non-compliances from the previous year need to be identified. It is desirable that Boral recognises that AEMR's are an excellent means to record progress on site and to plan operations and associated environmental management issues. Comprehensive AEMR's are an excellent management tool for the Company as well as satisfying the conditional requirement imposed by the Minister.*	All future AEMR's will address these sections more adequately, with separate sections to cover the specific requirements. The revised AEMR has addressed these matters.	Review AEMRs	**Complete and Satisfactory** All subsequent AEMRs have met the requirements.
DQ20/07: A register or similar recording system should be adopted to record the hours during which extraction, processing and product transfer activities occur. In the event that product distribution occurs on Sundays, these hours should also be recorded. *In order to demonstrate compliance with conditions relating to operational hours (Conditions 4(9) and 4(10)), it is important to maintain a record of the operational hours for all activities which are governed by conditional operating hours.*	This will be undertaken and included as part of the end-of-shift reporting. An electronic database has been setup which records the various hours of operation, from daily pre-start checklists.	Review the database and sufficiency of information collected	**Complete and Satisfactory** A system has been established to document this information.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ21/07: The Site Water Management Plan should be updated to include an erosion and sediment control plan and to reflect the planned changes to the on-site water management structures. The Surface Water Monitoring Program would also need to be updated to include a program to monitor the effectiveness of the Erosion and Sediment Control Plan. *The existing Site Water Management Plan does not include an erosion and sediment control plan as required by Condition 4(41) and hence no program to monitor its effectiveness is included within the Surface Water Monitoring Program.*	This was an administrative oversight. The Site Water Management Plan (WMP) will be updated to include an Erosion and Sediment Control Plan and will be submitted to DoP, DEC and DNR as an addendum report. Water consultants Evans & Peck are currently preparing the erosion and sediment control plan, along with the flocculant management plan, annual site water balance which will be included in a revised site water management plan.	Review of the Evans & Peck Water Management Plan Managing Urban Stormwater: Soils and Construction Volume 1 and Volume 2E – Mines and Quarries	**Complete and Unsatisfactory** The 2008 WMP Section 1.1.6. states: *"This Plan is intended to provide all the details necessary to replace the need for the preparation of a separate Erosion and Sediment Control Plan".* The focus of the WMP is how the runoff from all areas of the quarry will be collected and directed to storage dams. Other than brief statements regarding rock-check dams, dust suppression and the wheel wash system, the WMP does not address the suggested content or measures (e.g. revegetation of non-operational disturbed areas, land-shaping of temporary and permanent earthworks, inspection regimes) identified in *Managing Urban Stormwater: Soils and Construction Volume 1 and Volume 2B – Mines and Quarries*. The integration between the 2005 and 2009 Plans is not clear. This is discussed further in Table 5.

2006 Audit Findings	Response/ Action	Evidence sources/ questions	Conclusion
DQ22/07: The Rehabilitation Management Plan should be updated and upgraded including greater detail, particularly in relation to the monitoring of rehabilitation performance. *The current Rehabilitation Management Plan is lacking in detail. Forward planning for progressive and final rehabilitation is important, even during the early stages of an operation.*	The plan will be updated and upgraded. In progress	Rehabilitation Management Plan (2005). Vegetation Offset Strategy, Flora and Fauna Management and Rehabilitation Plan 2009 Revision.	**Incomplete/ Unsatisfactory** The Rehabilitation Plan was revised in May 2009 and incorporated into a single document with the Vegetation Offset Strategy and Flora and Fauna Management. The Rehabilitation Plan still lacks detail and does not include the measures to be implemented over the next 5 years or how rehabilitation performance will be monitored. This is discussed further in Table 5.
Other			
DQ23/07: A weed management program should be implemented which includes: • a record of areas treated; • the types and volumes of chemicals used; and • the date of treatment. The use of an accompanying aerial photograph depicting each area treated would be useful. *It is important to understand the areas and dates for which weed spraying has been undertaken, the types and volumes of chemicals used and the potential effects these may have on the environment (in particular water quality and soil contamination).*	This will be given consideration. Locally noxious weeds have recently been sprayed by the Illawarra District Noxious Weeds Authority which will include a report on the areas treated and the types and volumes of chemicals used.	Weed management schedule and reporting. Site visit: evidence of weed control. Interviews: quarry manager and Boral Environment Manager.	**Incomplete/ Unsatisfactory** This response is not sufficient to ensure the ongoing management of weeds. A program should be developed, implemented and monitored to assess effectiveness. During the audit the Quarry Manager stated that a plan had been developed between Dunmore Quarry, Dunmore Sand and Solid and the (former) Southern Rivers Catchment Management Authority to address seed collection, weed management, offsets, etc. A copy of this plan was not provided. Lamond Contracting Pty Ltd has been engaged to undertake weed control. Evidence of invoicing for weed control is presented in Appendix B: (vi).

4 COMPLIANCE WITH THE DEVELOPMENT CONSENT

The environmental conditions for the Dunmore Quarry are described in Schedules 4 and 5 of the Development Consent, covering the specific environmental condition and the environmental management, monitoring auditing and reporting conditions, respectively. Table 5 lists these conditions, along with the evidence sources considered in conducting the audit and an assessment of compliance. Opportunities for improvement have also been presented, as necessary.

Modifications to the Development Consent since it was issued in 2004 have been included in Table 5. Changes are either identified as separate line items with the relevant modification identified, or the changes have been noted in coloured highlight as follows:

- Modification 1 - Blue
- Modification 2 - Red
- Modification 3 - Green
- Modification 4 and 5 - Pink
- Modification 6 – Purple.

4.1 SUMMARY OF FINDINGS

The overall audit findings against the 106 conditions in each schedule of the consent are presented in Table 4. Of the 90 'applicable' conditions, 57 (63%) were found to be complaint, six (7%) non-compliant, 20 (22%) compliant in part and seven (8%) not able to be determined.

Table 4: Audit finding across the consent schedules.

Schedule	Audit finding					Total
	Compliant	Non-compliant	N/A	Compliant in part	Not able to determine	
3	8	0	3	0	2	**13**
4	44	4	11	16	5	**80**
5	5	2	2	4	0	**13**
Total	**57**	**6**	**16**	**20**	**7**	**106**

The consent conditions assessed as being 'compliant in part' generally relate to:

- The adequacy of the plans, strategies and programs based on the requirements stated in the condition: e.g. Site Water Management Plan, Environmental Management Strategy, Surface Water Monitoring Program, Transport Management Plan and the Dam Upgrade Plan.
- The implementation of plans, strategies and programs, in particular monitoring programs: e.g. water quality and quantity monitoring, surface and groundwater monitoring and site rehabilitation.

- Review, auditing and reporting requirements: e.g. independent audit and reporting against the Flora and fauna Management Plan, Rehabilitation Management Plan review and progress reporting, uploading required information on the Dunmore Quarry website, annual review and calculation of site water balance, and independent environmental audit.

The non-compliances relate to the following issues:

- Erosion and Sediment Control Plan
- Ground Water Monitoring Program
- Rehabilitation Management Plan
- Lodgement of the Conservation Bond
- Submission of the Environmental Management Strategy to Council
- Provision of the required information on the website.

Table 5: Compliance with Development Consent conditions

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
SCHEDULE 3: ADMINISTRATIVE CONDITIONS				
Obligation to Minimise Harm to the Environment				
	1	The Applicant shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.	Environmental controls Environmental Management Plans	**Compliant**
Terms of Approval				
	2	The Applicant shall carry out the development generally in accordance with the: (a) DA 470-11-2003; (b) EIS titled *Environmental Impact Statement for the proposed Dunmore Quarry Production Increase*, Volumes 1 & 2, dated November 2003, and prepared by R. W. Corkery & Company Pty Limited (c) The letter from Boral Quarries to the Department dated 20 October 2005 about the application to modify Dunmore Quarry development consent DA 470-11-2003, and accompanying plans 4034032_01 issue E, and 4034032_EL issue B; (d) modification application MOD 59-4-2006 and letter from Boral Quarries to the Department dated 13 April 2006; (e) Modification Application 470-11-2003 Mod 3, letter to the Department dated 28 March 2008, and accompanying plans GE-DU-2961-02 Rev D; GE-DU-2962-01 Rev B; GE-DU- 2963-01 Rev 0; and GE-DU-2964-02 Rev 0; and (f) Modification Application 470-11-2003 Mod 4 and accompanying SEE titled *Statement of Environmental Effects for the proposed Dunmore Hard Rock Quarry Extension,* dated May 2008, and letter from Boral Quarries & Recycling to the Department dated 22 September 2008; (g) Modification Application 470-11-2003 Mod 5 and accompanying letter from Boral Quarries & Recycling to the Department dated 16 September 2008 (and accompanying plan GE-DU-2966-01 Rev E); (h) Modification Application 470-11-2003 Mod 6 and accompanying document titled *Environmental Assessment Dunmore Hard Rock Quarry– Modification 6,* prepared by EMGA Mitchell McLennan and dated 19 November 2012; and (i) conditions of this development consent.		**Compliant**
	3	If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.		**N/A**

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
	4	The Applicant shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of: (a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with this consent; and (b) the implementation of any actions or measures contained in these documents.	Review of communications with Planning and the Director-General	**Compliant** Boral has complied with requirement/s of the Director-General when they have been provided. However, it should be noted that most often acknowledgement of receipt, feedback and/or approval from the Director-General is not provided.
Quarrying Operations				
	5	5. The Applicant may carry out quarrying operations on the site until 30 September 2034. *Note: Under this consent, the Applicant is required to rehabilitate the site and carry out additional undertakings to the satisfaction of the Director-General. Consequently, this consent will continue to apply in all other respects other than the right to conduct quarrying operations until the rehabilitation of the site and those undertakings have been carried out to a satisfactory standard.*		**N/A**
	6	The Applicant shall not produce or transport more than 2.5 million tonnes of quarry products a calendar year from the development.	Production, sales and transport reporting	**Compliant** Production and transport tonnage has not exceeded this condition.
Transportation				
	7	The Applicant shall not transport, or permit to be transported, more than 1.5 million tonnes of quarry products from the site in a calendar year by road, except in an emergency with the written approval of the Director-General.	Production, sales and transport reporting	**Compliant** Road transport tonnage has not exceeded this condition.
	7a	The Applicant shall maximise transport of quarry products from the site by rail, so far as is reasonable and feasible, to the satisfaction of the Director-General.	Production, sales and transport reporting	**Compliant**
Surrender of Consents				
	8	Within 6 months of the date of this consent, the Applicant shall surrender all existing development consents and existing use rights associated with the site, in accordance with clause 97 of EP&A Regulation.		**Compliant**

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Structural Adequacy				
	9	The Applicant shall ensure that any new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA. *Notes:* • *Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for any building works.* • *Part 8 of the EP&A Regulation sets out the detailed requirements for the certification of development*		**Not able to determine** The new workshop was constructed following the 2006 Audit. Details regarding construction in accordance with the BCA were not provided.
Demolition				
	10	The Applicant shall ensure that all demolition work is carried out in accordance with *AS 2601-2001: The Demolition of Structures,* or its latest version.		**Not able to determine**
Protection of Public Infrastructure				
	11	The Applicant shall: (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and (b) relocate, or pay the full costs associated with relocating any public infrastructure that needs to be relocated as a result of the development.		**N/A** No public infrastructure has been damaged or relocated.
Operation of Plant and Equipment				
	12	The Applicant shall ensure that all plant and equipment at the site, or used in connection with the development, are: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.		**Compliant** All plant and equipment has been maintained and a number of upgrades have occurred.

<table>
<tr><th>Issue</th><th>Number</th><th>Condition details</th><th>Evidence sources/ questions</th><th>Audit finding</th></tr>
<tr><td colspan="5">SCHEDULE 4: SPECIFIC ENVIRONMENTAL CONDITIONS</td></tr>
<tr><td colspan="5">Identification of Boundaries</td></tr>
<tr><td></td><td>1</td><td>Within 6 months of the date of this consent and any subsequent modification involving a change to the approved limits of extraction, the Applicant shall:
(a) engage a registered surveyor to mark out the boundaries of the approved limits of extraction;
(b) submit a survey plan of these boundaries to the Director-General; and
(c) ensure that these boundaries are clearly marked at all times in a permanent manner that allows operating staff and inspecting officers to clearly identify those limits.</td><td>Applies to original consent and modifications 4 and 5 (Nov 2008), and 6 (Feb 2004).
Name and contact details of the surveyor(s) engaged.
Copies of the survey plans submitted to the Director-General.
Evidence of the boundaries being clearly marked (photographs, interviews, maps associated with plans, etc.).</td><td>Compliant
A plan of the extraction area was prepared by Craven, Elliston and Hayes (Dapto) Pty Ltd 09/02/2008 (Appendix C: (i)).
▪ Craven Elliston & Hayes (Dapto) are members and affiliates of the following organisations:
• Institution of Surveyors NSW
• Spatial Sciences Coalition Consulting Surveyors NSW.
▪ The extraction boundaries are clearly marked out using galvanised steel posts painted yellow (Appendix C: (ii)). Extraction was well within these approved boundary.</td></tr>
<tr><td colspan="5">Acquisition Upon Request</td></tr>
<tr><td></td><td>2</td><td>Upon receiving a written request for acquisition from the landowner of the land listed in Table 1, the Applicant shall acquire the land in accordance with conditions 3 and 4 below.
<table><tr><th>Land Owner(s)</th><th>Land Identification</th></tr><tr><td>Creagan</td><td>Lot 5 DP1001931</td></tr><tr><td>Stocker</td><td>Lot 1 DP745632</td></tr><tr><td>McParland/ Fogarty</td><td>Lot 10 DP977931</td></tr><tr><td>Fogarty/ McParland</td><td>Kimberly Property</td></tr></table>Table 1: Land Subject to Acquisition on Request</td><td></td><td>Compliant
No requests for land acquisition received by landholders.</td></tr>
<tr><td></td><td>3</td><td>Within 6 months of receiving a written request from the landowner, the Applicant shall pay the landowner:
(a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the development the subject of this DA, having regard to the:
• existing and permissible use of the land, in accordance with the applicable environmental planning instruments at the date of the written request; and
• presence of improvements on the land 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; and
(b) the reasonable costs associated with:</td><td></td><td>N/A
Refer to Schedule 4, Condition 2.</td></tr>
</table>

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
		• relocating within the Shellharbour or Kiama local government areas, or to any other local government area determined by the Director-General; and • obtaining legal and expert advice for determining the acquisition price of the land and the terms upon which it is to be acquired; and (c) reasonable compensation for any disturbance caused by the land acquisition process. However, if within 6 months of receiving this written request, 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 Director-General for resolution. Upon receiving such a request, the Director-General shall request the NSW President of the Australian Property Institute to appoint a qualified independent valuer to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or the terms upon which the land is to be acquired. If either party disputes the independent valuer's determination, the independent valuer must refer the matter back to the Director-General for resolution. 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 cease, unless otherwise agreed by the Director-General.		
	4	The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer or the Director-General, and the costs of determination referred to in Condition 3 above.		**N/A** Refer to Schedule 4, Condition 2.
	5	If the Applicant and landowner agree that only part of the land should 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.		**N/A** Refer to Schedule 4, Condition 2.
	6	While the land listed in Table 1 is privately-owned land, the Applicant shall comply with the requirements applying to this land in these conditions of consent.	Conditions that apply: 7, 16,17,19, 20, 22, 25	**Compliant** 7: Noise impacts: compliant (see S4, C7) 16: Airblast overpressure: compliant (see S4, C16) 17: Peak particle velocity: compliant (see S4, C17) 19: Public notice (blasting): compliant (by phone) 20: Blast Management Plan: N/A (see S4, C20) 22: Air quality: compliant (see S4, C22-25

<table>
<tr><th>Issue</th><th>Number</th><th>Condition details</th><th>Evidence sources/ questions</th><th>Audit finding</th></tr>
<tr><td colspan="5">Noise</td></tr>
<tr><td>Noise Limits</td><td>7</td><td>The Applicant shall ensure that the noise generated by the development does not exceed the criteria specified in Table 2.
<table>
<tr><th rowspan="3">Receiver Locations</th><th colspan="6">Noise Limits dB(A)</th></tr>
<tr><th colspan="4">$L_{Aeq\ (15minute)}$</th><th colspan="2">$L_{A1\ (1minute)}$</th></tr>
<tr><th>Day</th><th>Evening</th><th>Night</th><th>Shoulder</th><th>Night</th><th>Shoulder</th></tr>
<tr><td>Location A McParland Residence</td><td>35</td><td>35</td><td>35</td><td>35</td><td>45</td><td>45</td></tr>
<tr><td>Location K Stocker Residence</td><td>49</td><td>44</td><td>38</td><td>47</td><td>48</td><td>55</td></tr>
<tr><td>Location O Dunmore Lakes</td><td>49</td><td>44</td><td>38</td><td>47</td><td>48</td><td>55</td></tr>
<tr><td>Location J Creagan Residence</td><td colspan="6">Negotiated Agreement in Place</td></tr>
</table>
Table 2: Noise Impact Assessment Criteria for the Development
Notes:
1. Receiver locations nominated in Appendix A Figure A2 of the report prepared by Richard Heggie Associates Report No.605/03 Titled Part 1: Noise Assessment – Dunmore Quarry Production Increase.
2. The above table may be varied if the Applicant enters into a negotiated agreement with any of the affected residents, or if existing agreements become void.
3. Noise from the development is to be measured at the most affected point on or within the residential boundary or at the most affected point within 30m of the dwelling (rural situations) where the dwelling is more than 30m from the boundary, to determine compliance with the $L_{Aeq(15\ minute)}$ noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the development is impractical, the EPA may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors presented in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.
4. Noise from the development is to be measured at 1m from the dwelling façade to determine compliance with the $L_{A1(1minute)}$ noise limits in above table.
5. The noise emission limits identified in Table 1 apply under meteorological conditions of:
• Wind speed up to 3m/s at 10 metres above ground level; or
• Temperature inversion conditions of up to 3°C/100m and wind speed up to 2m/s at 10 metres above the ground.</td><td>Monitoring data/ reports
Community complaints database
BoM data – wind speed, temperature inversion.
Was noise monitoring conducted at appropriate receiver locations?
Was monitoring conducted under the appropriate meteorological conditions?
EPL returns (Limit Conditions L3: Noise Limits; Monitoring and Recording Conditions M8.1: Noise Monitoring).</td><td>Compliant
Noise exceedences are documented in the AEMRs, EPL returns and the Noise Compliance Assessment Reports (Heggies and SLR). There have been no exceedances for the audit period.
The last noise complaint was registered on the 12/06/2008.</td></tr>
</table>

<table>
<tr><th>Issue</th><th>Number</th><th>Condition details</th><th>Evidence sources/ questions</th><th>Audit finding</th></tr>
<tr><td>Noise Investigations</td><td>8</td><td>Within 6 months of the date of this consent, the Applicant shall undertake noise investigations, which may include sound power levels emitted from plant at the site, to determine near-field trigger levels that would assist in demonstrating compliance and verify the effectiveness of noise mitigation works to the satisfaction of the EPA.
Note: The purpose of this condition is to capture the proposed noise verification program where near field monitoring will be undertaken for groups of plant detailed in Richard Heggie and Associates letter dated 2 March 2004.</td><td></td><td>N/A
Completed as part of the 2006 audit.</td></tr>
<tr><td rowspan="2">Operating Hours</td><td>9</td><td>The Applicant shall comply with the operating hours in Table 3:
<table>
<tr><th>Activity</th><th>Days of the Week</th><th>Time</th></tr>
<tr><td>Extraction and Processing</td><td>Monday – Saturday</td><td>6-00am to 10-00pm</td></tr>
<tr><td>Product Transfer to Stockpiles</td><td>Monday - Saturday</td><td>6-00am – Midnight</td></tr>
<tr><td rowspan="2">Distribution</td><td>Monday – Saturday</td><td>24 hrs</td></tr>
<tr><td>Sunday</td><td>See Condition 10, Schedule 4</td></tr>
<tr><td>Maintenance</td><td>Monday – Sunday</td><td>24 hrs</td></tr>
</table>
Table 3: Operating Hours for the Development</td><td>Operating log/register
Complaints database</td><td>Not able to determine
The Quarry Operating System Daily Operating report for the period 01/05/2014 to 31/05/2014 was reviewed (refer to Appendix C (iii) for details). This info provided was not sufficient as it did not include operating times.</td></tr>
<tr><td>10</td><td>The Applicant may only distribute quarry products off-site by road on up to 15 Sundays a year, between 8am and 6pm, unless the EPA approves otherwise. This restriction does not apply to distribution by rail, which is allowed 24 hours a day, 7 days a week.</td><td>Inspection of road transport log books to identify:
Number of deliveries on Sundays.
Delivery times.</td><td>Compliant
Spreadsheet logging system in place. Sunday deliveries meet the requirement.</td></tr>
<tr><td>Oversized Material</td><td>11</td><td>The Applicant shall not process any oversized raw feed material at the development during the shoulder period.
Note: For the purpose of this condition “oversized raw feed material” is defined as where more than 50% of the shot is over 900mm in diameter.</td><td>Shoulder period: 6-7 am for noise.</td><td>Not able to determine
No evidence is available to assess compliance with this condition. The interview with the Quarry Manager identified that all oversized material is processed within quarry pit outside the shoulder period.</td></tr>
</table>

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Noise Monitoring	12	Within 3 months of the date of this consent, the Applicant shall: (a) conduct continuous real-time monitoring of the noise generated by the development at the location K; and (b) use this information in the day to day management of the development to ensure compliance with the noise impact assessment criteria.	Continuous real-time monitoring data records Who is responsible for day to day decisions regarding noise management? Evidence of data being used in noise management decisions (interview) Site visit: confirm location of continuous real-time monitoring equipment	**Compliant** An unattended continuous directional noise monitoring system ('BarnOwl') is installed at the Stocker Residence. The BarnOwl unit is connected real-time to the quarry control room where the operator can view a graph of noise in the direction of the quarry against limits in the consent and EPL. When noise in the direction of the quarry trends within 2dB of the noise limits a wireless link triggers an alarm at the site office and action is taken to avoid exceedance at receptor location K. The Noise and Blast Monitoring Program notes that a strict maintenance program is in place to ensure equipment is operating effectively. However, the 2011 and 2012 SLR noise compliance assessments (see Condition 13) noted that there were complications with this instrument during operator attended noise monitoring. Discussions with the Quarry Manager identified that this was due to issues with the power supply at the property where the monitor is located. The owner of the Stocker residence has requested that the monitoring be removed as noise has not been an issue.
	13	Within 3 months of the date of this consent, and annually thereafter, unless directed otherwise by the Director-General, the Applicant shall: (a) commission a suitably qualified person to assess whether the development is complying with the noise impact assessment criteria in Table 2, in general accordance with the NSW Industrial Noise Policy and Australian Standard (AS) 1055-1997: "Description and Measurement of Environmental Noise"; and (b) provide the results of this assessment to the EPA and Director-General within a month of commissioning the assessment.	Annual noise impact assessments Name and contact details of the noise assessor(s) engaged Dates of assessment submission to DG	**Compliant** Annual noise compliance assessments were undertaken by the following appropriately qualified consultants: • SLR: 2011 - 2013 • Heggies: 2007 – 2010. Assessments were conducted against the criteria in Table 2 and in accordance with AS 1055-1997.
	14	Within 3 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Noise Monitoring Program for the development, in consultation with the EPA, and to the satisfaction of the Director-General.	A copy of the Noise Monitoring Program Evidence of on-going implementation EPA interview Sign-off from DG	**Compliant** The Noise and Blast Monitoring Program is included in the Environmental Monitoring Program. This document was first prepared in August 2006, then revised in April 2009 and March 2014.
Reporting	15	Deleted		

<table>
<tr><th>Issue</th><th>Number</th><th>Condition details</th><th>Evidence sources/ questions</th><th>Audit finding</th></tr>
<tr><td colspan="5">Blasting and Vibration:</td></tr>
<tr><td>Airblast Overpressure Criteria</td><td>16</td><td>The Applicant shall ensure that the airblast overpressure level from blasting at the development does not exceed the criteria in Table 4 at any residence or sensitive receiver on privately-owned land.
<table><tr><th>Airblast overpressure level [dB(Lin Peak)]</th><th>Allowable exceedance</th></tr><tr><td>115</td><td>5% of the total number of blasts over a period of 12 months</td></tr><tr><td>120</td><td>0%</td></tr></table>Table 4: Airblast Overpressure Limits</td><td>Airblast monitoring results
Airblast overpressure level at sensitive receivers
Check implications for Condition 6</td><td>Compliant
Blast monitoring results from 27/08/2009 and 30/04/2014 for the McParland monitor were reviewed. During this period there were exceedences on the 26/08/2011 (16.1 dB) and 26/09/2012. Based on the EPL reporting timeframe (30/08 – 31/08) these equate to 4.0% and 3.7% of the total number of blasts over a 12 month period. This is below the 5% allowable exceedence.
Refer to Schedule 4 condition 21 regarding the monitoring location. (Croome Farm or alternate location approved by the EPA).</td></tr>
<tr><td>Ground Vibration Criteria</td><td>17</td><td>The Applicant shall ensure that the peak particle velocity from blasting at the development does not exceed the criteria in Table 5 at any residence or sensitive receiver on privately – owned land.
<table><tr><th>Peak particle velocity (mm/s)</th><th>Allowable exceedance</th></tr><tr><td>5</td><td>5% of the total number of blasts over a period of 12 months</td></tr><tr><td>10</td><td>0%</td></tr></table>Table 5: Ground Vibration Limits</td><td>Peak particle velocity at sensitive receivers
Check implications for Condition 6</td><td>Compliant
Blast monitoring results from 27/08/2009 and 30/04/2014 for the McParland monitor were reviewed. During this period there were no exceedences.
Refer to Schedule 4 condition 21 regarding the monitoring location.</td></tr>
<tr><td>Blasting Restrictions</td><td>18</td><td>Blasting operations at the site may only take place:
a) between 9am and 5pm Monday to Saturday inclusive;
b) are limited to 2 blasts each day; and
c) at such other times as may be approved by EPA.</td><td>Blasting register: reviewed monitoring results from 27/08/2009 and 30/04/2014 for the McParland monitor.
EPL and EPA interview.</td><td>Compliant
All blasting was within the required timeframe and never exceeded two operations per day. No exceedences were identified through the EPL</td></tr>
</table>

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Public Notice	19	During the life of the development, the Applicant shall: (a) operate a blasting hotline, or alternative system agreed to by the Director-General, to enable the public to get up-to-date information on blasting operations at the development; and (b) notify landowners and other interested persons about this hotline or system by placing annual notices in a local newspaper.	Hotline or web-based information? How were residents informed? Check implications for Condition 6	**Compliant in part** An advertisement regarding the blast information line (0401 895 703) was placed in the Lake Times on the 31/10/2007. This has not been repeated on an annual basis, as required. When blasting is to occur the Quarry Manager now calls the McParland property to notify the owner. **Opportunity for improvement: DQ1/14** Ensure that information regarding the blast hotline is advertised in a local newspaper annually. Alternately, blast information should be provided on the Dunmore Quarry website (discussions with Kate Jackson identified that the website is still being populated and would be functional by early October 2014). Notification that the site was live was received on the 03/11/2014, however a section on blast information could not be identified http://www.boral.com.au/Article/dunmore_quarry_mainpage.asp
Blast Management Plan	20	Before carrying out any development within 250 metres of Lot 10 DP977931 (see Figure 4.4 of the EIS), the Applicant shall prepare, and subsequently implement, a Blast Management Plan for the development in consultation with the landowner(s), and to the satisfaction of the Director-General. This plan must describe the measures that would be implemented to: (a) avoid and/or minimize any blasting impacts of the development on either the property, or use of the property; (b) monitor the blasting impacts of the development on the property; (c) mitigate, remediate or compensate for any blasting impacts of the development on either the property, or the use of the property.	Site visit: Lot 10 Review the Blast Management Plan	**Compliant** This Plan has been developed in compliance with the condition, despite no development as yet occurring within 250 metres of Lot 10 DP977931.

<table>
<tr><th>Issue</th><th>Number</th><th>Condition details</th><th>Evidence sources/ questions</th><th>Audit finding</th></tr>
<tr><td>Blast Monitoring</td><td>21</td><td>The Applicant shall monitor the airblast overpressure and peak particle velocity impacts of the development at the permanent monitoring station at Croome Farm, or any alternative location approved by the EPA, to the satisfaction of the EPA and Director-General, using the specified units of measure, frequency, sampling method, and location in Table 6.
<table>
<tr><th>Parameter</th><th>Units of Measure</th><th>Frequency</th><th>Sampling Method</th><th>Measurement Location</th></tr>
<tr><td>Airblast overpressure</td><td>dB(Lin Peak)</td><td>During every blast</td><td>AS2187.2-1993[1]</td><td>Not less than 3.5m from a building or structure (or as otherwise agreed by EPA)</td></tr>
<tr><td>Peak particle velocity</td><td>mm/s</td><td>During every blast</td><td>AS2187.2-1993</td><td>Not more than 30m from a building or structure (or as otherwise agreed by EPA)</td></tr>
</table>
Table 6: Airblast overpressure and peak particle velocity monitoring
Standards Australia, 1993, AS2187.2-1993: Explosives - Storage, Transport and Use of Explosives</td><td>Site visit: confirm location of the permanent monitoring station at Croome Farm
EPS interview
Monitoring data (viewed)
Compliance with Table 6</td><td>Compliant
The EPL 77 variation in 2009 changed condition M7.1 to undertake blast monitoring at the McParland property. The monitoring parameters meet the requirements set out in Table 6. Since 2009 there have been a number of non-compliances in relation to EPL blast monitoring and reporting (refer to Table 6 for details).
Monitoring information is provided to the EPA through EPL returns, and to the Director General via AEMRs.</td></tr>
</table>

<table>
<tr><th>Issue</th><th>Number</th><th>Condition details</th><th>Evidence sources/ questions</th><th>Audit finding</th></tr>
<tr><td colspan="5">Air Quality</td></tr>
<tr><td>Impact Assessment Criteria</td><td>22</td><td>The Applicant shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not exceed the criteria in Tables 7, 8 and 9 at any residence on privately-owned land.
<table>
<tr><th>Pollutant</th><th>Averaging period</th><th>[d] Criterion</th></tr>
<tr><td>Total suspended particulates (TSP)</td><td>Annual</td><td>[a] 90 µg/m^3</td></tr>
<tr><td>Particulate matter < 10 µm (PM_{10})</td><td>Annual</td><td>[a] 30 µg/m^3</td></tr>
</table>
Table 7: Long-Term Impact Assessment Criteria for Particulate Matter
<table>
<tr><th>Pollutant</th><th>Averaging period</th><th>[d] Criterion</th></tr>
<tr><td>Particulate matter < 10 µm (PM_{10})</td><td>24 hour</td><td>[a] 50 µg/m^3</td></tr>
</table>
Table 8: Short Term Impact Assessment Criteria for Particulate Matter
<table>
<tr><th>Pollutant</th><th>Averaging period</th><th>Maximum increase in deposited dust level</th><th>Maximum total deposited dust level</th></tr>
<tr><td>[c] Deposited dust</td><td>Annual</td><td>[b] 2 g/m^2/month</td><td>[a] 4 g/m^2/month</td></tr>
</table>
Table 9: Long-Term Impact Assessment Criteria for Deposited Dust
Notes to Tables 7-9:
a Total impact (ie incremental increase in concentrations due to the project plus background concentrations due to all other sources);
b Incremental impact (ie incremental increase in concentrations due to the project on its own);
c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter -Deposited Matter - Gravimetric Method.
d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the DG in consultation with EPA.</td><td>Particulate matter emissions monitoring data.
Compliance with thresholds-reported in AEMRs.
Mitigation/ avoidance measures in place.</td><td>Compliant
As evident for S4, C23 below, a number of measures have been implemented to minimise particulate matter from the operation. During the two site visits these were observed to be actively implemented.
A review of monitoring data identified a number of exceedences of the criteria in Tables 7, 8 and 9. However, in regards to deposited dust sources other than the quarry may contribute to the levels.
As the purpose of this condition appears to be to mitigated dust levels at residence on privately-owned land, complaints regarding dust were also reviewed as an indicator of compliance. The most recent complaint regarding dust was 06/10/2011, and prior to that in June 2010.</td></tr>
<tr><td>Management</td><td>23</td><td>The Applicant shall minimise and/or prevent the emission of dust from the site.</td><td>Site visit: inspect dust mitigation measures.</td><td>Compliant
A number of dust minimisation measures were observed at the site, including the use of water carts/ cannons on roads and stockpiles, (see Appendix C (iv)), an enclosed crusher, use of the wheel wash and vehicles being covered.
There was little evidence of dust observed during the loading of trucks or from heavy vehicle movements on the unsurfaced roads. Limited dust was noted on surfaces in the site office and workshop.
The most recent complaint regarding dust was 06/10/2011, and prior to that in June 2010.</td></tr>
</table>

<table>
<tr><th>Issue</th><th>Number</th><th>Condition details</th><th>Evidence sources/ questions</th><th>Audit finding</th></tr>
<tr><td></td><td>24</td><td>Within 3 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Fines Management Plan to the satisfaction of the EPA. This plan must include the measures that would be implemented to stabilise the surface of stockpiles of fines to minimise wind-blown dust emissions and the erosion/product loss due to stormwater run-off.
Note: Fines are < 4mm in diameter.</td><td>Review of the Fines Management Plan
Site visit: mitigation measures being implemented
EPA interview</td><td>Compliant in part
The Fines Management Plan was prepared for the project in 2005 in consultation with the OEH.
The AEMRs identify that the Fines Management Plan has not been implemented since the 2008/2009 reporting period due to the use of fines as a blending component in manufactured sands, and hence the elimination of stockpiling of large volumes of quarry fines. Fines transferred to Dunmore Sand & Soil for blending are included in the transfers tonnes recorded for the quarry each month.
Opportunity for improvement DQ2/14
It is suggested that Boral enter into discussions with DPE regarding revising the details of this condition. It may be more appropriate that implementation of the Fines management Plan is triggered once stockpiles of fines reach a certain volume.</td></tr>
<tr><td>Monitoring</td><td>25</td><td>The Applicant shall monitor (by sampling and obtaining results by analysis) the concentration of each pollutant in Table 10 to the satisfaction of the EPA and the Director-General, using the specified unit of measure, averaging period, frequency, sampling method and minimum number of locations.
<table>
<tr><th>Pollutant</th><th>Unit of Measure</th><th>Averaging Period</th><th>Frequency</th><th>Sampling Method</th><th>Locations</th></tr>
<tr><td>Dust deposition</td><td>g/m2/month</td><td>Month, annual</td><td>Continuous</td><td>AM-15</td><td>4</td></tr>
<tr><td>PM_{10}</td><td>$\mu g/m^3$</td><td>24 hour, annual</td><td>Continuous</td><td>AM-18 (or equivalent)[1]</td><td>1</td></tr>
</table>
Table 10: Sampling of Air Pollutants
The Applicant may use an equivalent sampling method to AM-18, with the approval of EPA.</td><td>Pollutant monitoring data
Compliance with monitoring requirements
Site visit: monitoring locations
EPA interview</td><td>Compliant
Gravimetric dust and PM_{10} monitoring data monitoring data was reviewed from June 2009 to March 2014. Both monitoring programs meet the requirements of Table 10.
One EPL non-compliance was recorded in relation to PM_{10} sampling during the 2010/11 reporting period due to malfunction of the high volume sampler.
One EPL non-compliance was recorded in relation to deposited dust sampling during the 2009/10 reporting period due to a sample bottle being broken in the field.
Each of the above non-compliances were mitigated in collaboration with EPA input.
Monitoring information is provided to the EPA through EPL returns and to the DG via AEMRs.</td></tr>
</table>

<table>
<tr><th>Issue</th><th>Number</th><th>Condition details</th><th>Evidence sources/ questions</th><th>Audit finding</th></tr>
<tr><td></td><td>26</td><td>Within 3 months of the date of this consent, the Applicant shall prepare, and subsequently implement, an Air Quality Monitoring Program for the development, in consultation with the EPA, and to the satisfaction of the Director-General.</td><td>Review of the Air Quality Monitoring Program (implementation only)
Compliance with monitoring program requirements (ongoing implementation)
Site visit: monitoring locations
EPA interview</td><td>Compliant
The initial Air Quality Monitoring Program was submitted on the 18/02/05. The Air Quality Monitoring Program is now documented in the Environmental Monitoring Program for the site which was revised in August 2006, April 2009 and March 2014. The Program monitors dust deposition and PM_{10} only.
Outputs from the Air Quality Monitoring Program are provided to the EPA through EPL returns and to the DG via AEMRs.</td></tr>
<tr><td colspan="5">Meteorological Monitoring</td></tr>
<tr><td></td><td>27</td><td>The Applicant shall establish a permanent meteorological station at a location approved by the EPA, and to the satisfaction of the Director-General, to monitor the parameters specified in Table 11, using the specified units of measure, averaging period, frequency and sampling method.
<table>
<tr><th>Parameter</th><th>Units of measure</th><th>Averaging period</th><th>Frequency</th><th>Sampling method</th></tr>
<tr><td>Rainfall</td><td>mm/hr</td><td>1 hr</td><td>Continuous</td><td>AM-4</td></tr>
<tr><td>Temperature @ 2 m</td><td>K</td><td>1 hr</td><td>Continuous</td><td>AM-4</td></tr>
<tr><td>Temperature @ 10 m</td><td>K</td><td>1 hr</td><td>Continuous</td><td>AM-4</td></tr>
<tr><td>Wind direction @ 10 m</td><td>Compass points</td><td>1 hr</td><td>Continuous</td><td>AM-2</td></tr>
<tr><td>Wind speed @ 10 m</td><td>m/s</td><td>1 hr</td><td>Continuous</td><td>AM-2</td></tr>
<tr><td>Siting</td><td>-</td><td>-</td><td>-</td><td>AM-1</td></tr>
</table>
Table 11: Meteorological Monitoring
NSW EPA, 2001, Approved Methods for the Sampling and Analysis of Air Pollutants in NSW.</td><td>Site visit: permanent meteorological station
EPA interview
Review of meteorological data
EPL annual returns, compliance with condition M4.1</td><td>Compliant
A permanent meteorological station has been on the site since the 1990s, however it was moved in 2006 to its current location so that temperature inversions could be better monitored. The only non-compliance relating to EPL condition M4.1 relates to a failure to provide continuous meteorological monitoring due to the mast on the weather station collapsing in early September 2013 due to high winds. As a result weather data not collected for 5.5 days. The mast was resecured and broken sensors replaced to the satisfaction of the EPA.
A sample of the meteorological data collected is presented in Appendix B: (v).</td></tr>
<tr><td colspan="5">Surface and Groundwater</td></tr>
<tr><td>Pollution of Waters</td><td>28</td><td>Except as may be expressly provided by an Environment Protection Licence, the Applicant shall comply with section 120 of the Protection of the Environment Operations Act 1997 during the carrying out of the development.</td><td>Section 120 of the Protection of the Environment Operations Act 1997
EPL annual returns.</td><td>Compliant
This condition is also provided for in the EPL (3 Limit Conditions: L1). No breaches of compliance have been reported.</td></tr>
<tr><td>Water Discharge Limit</td><td>29</td><td>Except as may be expressly provided by an Environmental Protection Licence, the Applicant shall ensure that the discharges from any licenced discharge point/s comply with the limit in Table 12:
<table>
<tr><th>Pollutant</th><th>Units of Measure</th><th>100 Percentile Concentration Limit</th></tr>
<tr><td>TSS</td><td>mg/L</td><td>50</td></tr>
<tr><td>pH</td><td>pH</td><td>6.5 – 8.5</td></tr>
</table>
Table 12: Water Discharge Pollution Limits</td><td>Site visit: discharge monitoring points
Discharge monitoring data
Compliance with Table 12</td><td>N/A
Licensed discharge points have not been required to date.</td></tr>
</table>

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Site Water Balance	30	Each year, the Applicant shall: (a) review the site water balance for the development against the predictions in the EIS; (b) re-calculate the site water balance for the development; and (c) report the results of this review in the Annual Review.	Review of annual water balances (Annual Review)	**Compliant in part** The site water balance is discussed in section 2.4.1 of the AEMRs. The primary information provided is the water demand and the sources. The water balance is not specifically reviewed against the EIS predictions, or recalculated annually. **Opportunity for improvement DQ3/14** It is suggested that Boral enter into discussions with DPE regarding revising the details of this condition. The water balance was revised as part of the amended Water Management Plan (Evans and Peck, April 2008) in light of the new dam configuration and water transfer systems onsite. Therefore, the water balance presented in the EIS is no longer valid. It would be more appropriate to provide information regarding: • Water demand for the previous year • Rainfall and inflows for the previous year, as compared to the average presented in the water balance • Evaporative losses and water use for activities such as dust suppression • Dam storage levels and the possible implications on sourcing required demand from onsite dams and/or mains.
Storm Water Management System	31	The Applicant shall ensure that the storm water management system for the development is designed, constructed and operated to capture and treat polluted waters from storm event(s) of up to and including the 5-day, 95th percentile rainfall event.	Site visit: stormwater management system Water Management Plan (Evans and Peck, April 2008) Operational procedures (section 6.7) • Inspect 3-monthly and following heavy rains	**Compliant** This condition was changed following discussions between Boral, Evan & Peck and DECC in May 2007. The subsequent design of stormwater management system meets this condition.
	32	The Applicant shall ensure that the basins in the storm water management system are managed in accordance with the operating principles within the revised Water Management Plan prepared by Evans and Peck, dated April 2008, or any subsequent Water Management Plan approved by the Director-General, to maintain the required storm water storage volume.	Basin inspection program Basin inspection logs Water Management Plan prepared (Evans and Peck, April 2008) Interview: inspection staff Operational procedures	**Compliant** A 3-monthly inspection checklist (3M-PO- Inspect-Sediment-Ponds-Drains-Checklist) has been set up on Borals' electronic asset management (EAM) system. This document (see Appendix B: (ii)) is automatically emailed to the site environment officer.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Offline Dam	33	33. By 18 May 2008, or as otherwise agreed to by the Director-General, the Applicant shall: (a) modify the existing dam at the site to create a dam with a capacity of at least 61.4ML offline from Rocklow Creek; (b) ensure the discharge and overflow points of the dam do not cause erosion at the point of discharge/overflow; (c) rehabilitate and stabilize the banks of the dam; (d) construct a baffle and macrophyte zone downstream of the dam; and (e) ensure the integrity of the dam would not be compromised by any flooding in Rocklow Creek; to the satisfaction of the EPA and the Director-General.	Engineering reports Site visit: dam, discharge points, dam bank rehabilitation/ stabilization, baffle and macrophyte zone EPA interview DG sign-off	**Compliant** (a) dam capacity is split across 2 dams, with the total water storage volume for both dams being 140 ML. (b) Compliant: there have been no discharges from this dam. (c) Compliant: observed during site visit (see Appendix C: (vi)). (e) Compliant: there have been no instances where flood water from Rocklow Creek has flowed into the dam, however this has not compromised the integrity.
	34	Prior to carrying out any of these works, the Applicant shall prepare, and subsequently implement, a Dam Upgrade Plan in consultation with the EPA, and to the satisfaction of the Director-General. This plan must include: (a) the detailed design and specifications of the proposed works, which have been certified by a practicing registered engineer; (b) an erosion and sediment control plan for the proposed works, that is consistent with the requirements in the Department of Housing's *Managing Urban Stormwater: Soils and Construction* manual; (c) a vegetation and rehabilitation plan, setting out how the banks of the dam would be rehabilitated and stabilized, and the baffle and macrophyte zone would be constructed; (d) an acid sulphate soil management plan that is consistent with the *NSW Acid Sulfate Soil* manual; (e) a construction program for the proposed works; and (f) a program setting out how the modified dam and associated revegetation works would be maintained during the life of the development.	Review of the Dam Upgrade Plan EPA interview	**Compliant in part** (a) The Dam Upgrade Plan was prepared by Coffey Engineering in May 2008. This Plan details the design and specifications for the works and was certified by a practicing registered engineer. (b) The ESCP is discussed in section 3.2 and is consistent with the requirements of the Blue Book Department of Housing's *Managing Urban Stormwater: Soils and Construction* manual. (c) The Vegetation Management Plan (VMP) was prepared by Jamberoo Native Nursery, dated 27 May 2008. (d) an ASS plan was not prepared (e) The construction program is detailed in section 3.3. (f) Covered in the VMP.
	35	Within 1 month of completing the construction works in the Dam Upgrade Plan, the Applicant shall submit an as-executed report, certified by a practicing registered engineer, to the satisfaction of the EPA and Director-General.	Copy of the report submitted to the EPA/ DG Name and contact details of the engineer engaged.	**Not able to determine** Documentation was not provided on request.
Flocculent Management	36	The Applicant shall not use a flocculent, other than alum or ferric chloride, without the written approval of the EPA.	Evidence of flocculent used	**N/A** EPL 77 Licence Variation dated 12/08/2009 removed PRP 14 from the licence as the site no longer requires the use of flocculants.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
	37	Prior to carrying out any of the construction works required in condition 33 above, the Applicant shall prepare, and subsequently implement, a Flocculant Management Plan for the development to the satisfaction of the EPA. This plan must: (a) describe the proposed dosing system, including procedures for dosing in different operating conditions procedures, and procedures to ensure excess flocculant dosing is prevented; and (b) describe how the performance of this system would be monitored over time.	Review of the Flocculant Management Plan	**N/A** Letter from Evans and Peck dated 16/11/2007 provides the rationale as to why a Flocculant Management Plan is not required and outcomes from discussions with DEC/EPA. EPL 77 Licence Variation dated 12/08/2009 removed PRP 14 from the licence as the site no longer requires the use of flocculants. **Opportunity for improvement DQ4/14** It is suggested that Boral enter into discussions with DPE regarding deleting this condition.
Other Water Management Works	38	Within 18 months of the date of this consent, the Applicant shall carry out the following works: *(a) Workshop and Fuel Storage Area* • desilt drains and culverts upstream of the workshop to limit flooding; • construct a first flush collection basin to capture and store the first 13mm of run-off from the external service bays before it is treated by the oil/water separator; and • bund and roof the drum storage area; *(b) Magazine Area* • reinstate drain through access road to magazines to direct stormwater flows to the main drain; *(c) deleted* to the satisfaction of EPA and the Director-General.	Site visit: condition of drains and basins. Photographs. Drain/ basin management procedures and checklists. Inspection schedule.	**Compliant** (a) *Workshop and Fuel Storage Area* • During the audit drains and culverts upstream of the workshop were observed to be clean and free of silt and vegetation. A process is in place to ensure these are maintained every 3 months or after significant rainfall events. • A first-flush collection basin has been installed (see Appendix C: (vii)). • A new bunded drum storage area with roof has been installed (Appendix B: (iii)). *(b) Magazine Area* • The drain adjacent to the magazine area has been reinstated, as shown in Appendix C: (viii). **Opportunity for improvement DQ5/14** It is suggested that Boral enter into discussions with DPE regarding deleting this condition if the above actions are to the satisfaction of the Director-General.
Bunding	39	Impervious bunds must be constructed around all fuel, oil and chemical storage areas and the bund volume must be large enough to contain 110 per cent of the volume held in the largest container. The bund must be designed and installed in accordance with the requirements of the EPA Environment Protection Manual Technical Bulletin *Bunding and Spill Management*.	Site visit: fuel, oil and chemical storage areas Bund volumes Compliance with *Bunding and Spill Management* requirements	**Compliant** The fuel storage is a Transtank T Series (T55SS 60,000 L) is a self-bunded double wall design similar to a shipping container. Other oil and chemical storage comprises a large bunded and covered area beside the processing shed (refer Appendix B: (iii)). Some of the containers stored in this area are self-bunded.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Monitoring	40	The Applicant shall: (a) measure: • the volume of water discharged from the site via licenced discharge points; • water use on the site; • water transfers across the site; • dam and water structure storage levels; (b) monitor the quality of the surface water: • discharged from the licence discharge point/s of the development; • upstream and downstream of the development; (c) monitor flows in Rocklow Creek; and (d) monitor regional groundwater levels and quality; to the satisfaction of the EPA and the Director-General.	Water volume monitoring data Water quality monitoring data Water flow monitoring data Groundwater monitoring data EPA interview EPA/ DG requirements?	**Compliant in part** (a) measure: • the volume of water discharged from the site via licenced discharge points: N/A. • water use on the site: compliant (presented in AEMRs). • water transfers across the site: non-compliant. • dam and water structure storage levels: non-compliant; this information is not available. (b) monitor the quality of the surface water: • discharged from the licence discharge point/s of the development: N/A. • upstream and downstream of the development: compliant, only monitored during rainfall events (c) monitor flows in Rocklow Creek: non-compliant; flows monitored visually/qualitatively only. (d) monitor regional groundwater levels and quality: non-compliant. Groundwater monitoring bores are installed west of Croome. **Opportunity for improvement DQ6/14** It is suggested that Boral initiate discussions with DPE regarding the purpose of regional groundwater monitoring. If this information is not being used for decision-making, then the cost associated with monitoring may not be justified.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Management	41	Within 12 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Site Water Management Plan for the development, in consultation with the NOW, and to the satisfaction of the Director-General. This plan must include: (a) the predicted site water balance; (b) an Erosion and Sediment Control Plan; (c) a Surface Water Monitoring Program (d) a Ground Water Monitoring Program; and (e) an Integrated Water Management Strategy.	Review of the Site Water Management Plan. NOW interview.	**Compliant in part** The initial Site Water Management Plan was prepared in 2005 by Matrix Consulting. The SWMP includes elements of the integrated water management strategy and water balance modelling. In 2007 Boral commissioned Evans & Peck to prepare an amended a Water Management Plan (draft 24 April 2008). There is confusion regarding the name of the 2005 document, with the title page stating the *Site Water Management Plan* (WMP), while the document name states *Dunmore Quarry – Integrated Water Cycle Management strategy* (IWMS). As identified in the conditions, the intent is for the IWMP to sit under the WMP. (a) The WMP provides a revised water balance for the site (Section 5.4). (b) See condition 42 below. (c) & (d) Details of the Surface Water Monitoring Program and Ground Water Monitoring Program are included in the Environmental Monitoring Program report in Sections 5 and 6, respectively. (e) It is not clear how the 2005 and 2008 water management documents interact, and what aspects of the initial plan are still valid. **Opportunity for improvement DQ7/14** Currently the WMP and associated plans and strategies are not cohesive and are presented more as technical consultancy reports, rather than operational plans that define the issue, present the management objectives and actions and identify monitoring and review to promote ongoing improvement. It is recommended that all water management plans and strategies be reviewed, updated (based on the relevant guidelines) and integrated into a single operational document.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
	42	The Erosion and Sediment Control Plan shall: (a) be consistent with the requirements of the Department of Housing's *Managing Urban Stormwater: Soils and Construction* manual; (b) identify activities that could cause soil erosion and generate sediment; (c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters; (d) describe the location, function, and capacity of erosion and sediment control structures; and (e) describe what measures would be implemented to maintain the structures over time.	Review of the Erosion and Sediment Control Plan (ESCP). Consistency with *Managing Urban Stormwater: Soils and Construction* manual (Blue Book).	**Non-compliant** (a) Section 1.1.6 of the Water Management Plan (Evans & Peck, 2008) states that the WMP "provides all the details necessary to replace the need for the preparation of a separate ESCP". However, the 2008 WMP does not address the following requirements identified in the Blue Book: • A site layout map detailing the location of the best management practices (BMPs) for erosion and sediment control, as well as other aspects of the site including boundaries, drainage patterns, vegetation, etc. • Information on how the various soil conservation measures will be carried out, including timing, maintenance programs, etc. (b) Not clearly identified. (c) Not clearly identified. (d) Not covered. (e) Brief references to maintenance of dams only. Overall, the information covered in the 2008 WMP is not sufficient to address this requirement. **Opportunity for improvement DQ8/14** The ESCP should be prepared as a separate plan (within the WMP) that address the requirements of the Blue Book and this condition.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
	43	The Surface Water Monitoring Program shall include: (a) detailed baseline data on surface water flows and quality in Rocklow Creek; (b) surface water impact assessment criteria; (c) a program to monitor surface water flows and quality in Rocklow Creek; (d) a program to monitor bank and bed stability in Rocklow Creek; and (e) a program to monitor the effectiveness of the Erosion and Sediment Control Plan.	Review of the Surface Water Monitoring Program. Evidence of implementation of the monitoring program (monitoring equipment and data).	**Compliant in part** Details of the current Surface Water Monitoring Program are included in Section 5 of the Environmental Monitoring Program. The Program includes the required content, except for (d) a program to monitor bank and bed stability in Rocklow Creek. The initial Site Water Management Plan was prepared in 2005 by Matrix Consulting included details for bed and bank monitoring in Section 6.1.3 Creek Stability. **Opportunity for improvement DQ9/14** The detail provided for all environmental monitoring is limited, and in some instances does not fully cover the requirements of the Development Consent. It is suggested that Environmental Monitoring Program be reviewed to ensure the necessary detail is included.
	44	The Ground Water Monitoring Program shall include: (a) detailed baseline data on ground water levels and quality, based on statistical analysis; (b) ground water impact assessment criteria; and (c) a program to monitor regional ground water levels and quality.	Review of the Ground Water Monitoring Program Evidence of implementation of the monitoring program (monitoring equipment and data)	**Non-compliant** Details of the Ground Water Monitoring Program are included in Sections 6 of the Environmental Monitoring Program (EMP) report. The Program does not cover any of the required details as there is not an existing groundwater monitoring program on the site. **Opportunity for improvement DQ10/14** A groundwater monitoring program should be established to meet elements (a) and (b) of this condition, and as detailed in the EMP. The rationale for including regional groundwater monitoring in this condition, and how the subsequent information will be used, is not clear. It is suggested that Boral initiate discussions with DPE to clarify this condition, and delete if appropriate.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
	45	The Integrated Water Management Strategy shall: (a) explore a range of options for a sustainable resource alternative for water supply to the site; (b) identification of all possible and available sources of water; (c) consistency with Government Water Reform initiatives and policies; (d) quality of water to meet usage requirements including any possible effects on product; (e) costs of supply; (f) health and environmental impacts; (g) legislative requirements; (h) assessment of the feasibility, benefits and costs of options; (i) a process to identify and evaluate preferred options for implementation; and (j) the identification of a timetable for implementation of the selected options.	Review of the Integrated Water Management Strategy (IWMS) Implementation of options against timetable	**Compliant** The Site Water Management Plan (Matrix Consulting, 2005) includes many of the requirements of the IWMS. (a) Section 2 (b) Section 2.3 (c) Section 4.2 (d) Section 2.4 (e) Section 4.4 (f) Section 4.6 and 4.5, respectively (g) Section 4.7 (h) Section 4.8 (i) Section 5.1 (j) Section 5.2 There is confusion regarding the name of the 2005 document, with the title page stating *Site Water Management Plan*, while the document name states *Dunmore Quarry – Integrated Water Cycle Management strategy*. As identified in the conditions, the intent is for the IWMP to sit under the WMP. **Opportunity for improvement DQ10/14** Refer to the recommendation for condition 41 above.
Flora and Fauna				
Vegetation Offset Strategy	46	The Applicant shall: (a) establish, conserve, and maintain at least: • 4.6 hectares of *Melaleuca armillaris* Tall Shrubland; and • 8.2 hectares of Blue Gum-White Box Woodland/Forest, on Boral-owned land adjacent to the development; and (b) conserve, maintain, and enhance the vegetation in the area to the south of the development marked on the map in Appendix 2. (c) conserve, maintain, enhance and establish the vegetation in the area to the south of the development marked on the map in Appendix 3, in accordance with the letter from Boral to the Department dated 22 September 2008 titled *Dunmore Quarry – Revised Offset for Quarry Extension.*	Site visit: assess vegetation species, extent and condition Review of site maps/ aerial photographs Copy of letter	**Not able to determine** Unable to inspect these sites during the site visit. Interview noted that a plan had been developed with DSS and CMA, however this could not be provided. (a) Unable to inspect these sites during the site visit. (b) vegetation present from 2005 to 2014 (Google Earth) but unable to verify extent and condition. (c) Unable to inspect the area to the south of the quarry during the site visit.
	46A	Within 12 months of the date of Modification Application 470-11-2003 Mod 4, the Applicant shall make suitable arrangements in consultation with the OEH to provide appropriate long term security for the biodiversity offset referred to in condition 46 (c), to the satisfaction of the Director-General.	Date of biodiversity offset arrangements OEH interview Due November 2009 (Mod 4 dated November 2008)	**Compliant** Dunmore Quarry Conservation Agreement was signed by the Minister for the Environment in June 2011 (see Appendix C: (ix)). The Agreement protects 14.75 ha of native vegetation. Although formally signed after the required date negotiations with OEH were initiated within the required timeframe.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Flora and Fauna Management Plan	47	Within 12 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Flora and Fauna Management Plan for the development to the satisfaction of the Director-General. This plan must include: (a) a Vegetation Clearing Protocol; (b) a Compensatory Habitat Management Plan; and (c) a Remnant Vegetation Conservation Plan.	Review of the Flora and Fauna Management Plan (FFMP) Due November 2005 Evidence of implementation	**Compliant** *Vegetation Offset Strategy (Development Consent Conditions 46-58) Flora and Fauna Management and Rehabilitation Plan* (Cumberland Ecology, May 2009) was submitted 6 months late. Section 4: Vegetation Clearing Protocol; Section 5: Compensatory Habitat Management Plan; Section 6: Remnant Vegetation Conservation Plan. **Opportunity for improvement DQ11/14** Currently the FFMP and associated plans and protocols are not cohesive and it is difficult to identify the key issues to be managed, the management objectives and actions to be implemented, the proposed schedule for implementation or the monitoring and review commitments. It is recommended that all flora and fauna management plans and strategies be reviewed, updated (based on the relevant guidelines and best practice) and integrated into a single operational document.
	48	The Vegetation Clearing Protocol shall: (a) delineate the areas of remnant vegetation to be cleared; and (b) describe the procedures that would be implemented for: • pre-clearance surveys; • progressive clearing; • fauna management; • conserving and reusing topsoil; • collecting seed from the site; • salvaging and reusing material from the site; and • controlling weeds.	Review of the Vegetation Clearing Protocol	**Compliant** The Vegetation Clearing Protocol is included in the FFMP (section 4). The Protocol addresses all requirements of this condition.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
	49	The Compensatory Habit Management Plan shall: (a) describe the compensatory habitat proposal for the: • *Melaleuca armillaris* Tall Shrubland; and • Blue Gum-White Box Woodland/Forest; (b) justify why this area(s) is suitable for the compensatory habitat proposal; (c) establish baseline data for the existing habitat in the proposed compensatory habitat area(s); (d) describe how the compensatory habitat proposal would be implemented; (e) set completion criteria for the compensatory habitat proposal; and (f) describe how the performance of the compensatory habitat management proposal would be monitored over time.	Review of the Compensatory Habit Management Plan Implementation and results of performance monitoring over time	**Compliant** The Compensatory Habit Management Plan is included in the 2009 FFMP (section 5). The Plan addresses all requirements of this condition.
	50	The Remnant Vegetation Conservation Plan shall: (a) describe what measures would be implemented to conserve, maintain and enhance the vegetation in the area to the south of the development marked in the map in Appendix 2; (b) establish baseline data for the existing vegetation in the area; and (c) describe how the performance of the measures described in (a) above would be monitored over time.	Review of the Remnant Vegetation Conservation Plan Review of baseline data Implementation and results of performance monitoring over time Site visit: habitat condition	**Compliant** The Remnant Vegetation Conservation Plan is included in the FFMP (section 6). The Plan addresses all requirements of this condition.
Reporting	51	The Applicant shall include a progress report on the implementation of the Flora and Fauna Management Plan in the Annual Review.	Review FFMP progress reporting in the Annual Reviews	**Compliant in part** 2005/06: section 2.7 2006/07 to 2012/13: section 2.5. Brief information is provided on the actions undertaken during the reporting period, however, it is not always clear how the actions relate to the implementation of the FFMP. **Opportunity for improvement DQ11/14** Refer to the recommendation for condition 47 above.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Independent Audit	52	Within 3 years of the date of this consent, and every 5 years thereafter unless the Director-General directs otherwise, the Applicant shall commission, and pay the full cost of an Independent Audit of the Flora and Fauna Management Plan. This audit must: (a) be conducted by a suitably qualified, experienced, and independent person whose appointment has been endorsed by the Director-General; (b) assess the performance of the Flora and Fauna Management Plan; (c) review the adequacy of the Flora and Fauna Management Plan; and, if necessary, (d) recommend actions or measures to improve the performance and/ or adequacy of the Flora and Fauna Management Plan.	Audits due: • Nov 2007 • Nov 2012 • Nov 2015 Review of audit reports and implementation of recommendations/ actions	**Compliant in part** International Environmental Consultants Pty Ltd were engaged by Boral on the 19/10/2007 to undertake an independent audit of the (draft) Flora and Fauna Management Plan. The content of this audit complies with this Condition. The audit due in November 2012 has not been delivered. **Opportunity for Improvement DQ12/14** It is recommended that Boral initiates an independent audit of the Flora and Fauna Management Plan as soon as possible. A request to prepare a proposal for the audit was sighed on the 04/11/2014.
Rehabilitation				
Rehabilitation	53	The Applicant shall progressively rehabilitate the site to the satisfaction of the Director-General.	Site visit: assess rehabilitations progress Review against performance criteria in FFMP Interviews	**Compliant in part** The Rehabilitation Management Plan outlines the requirements for rehabilitation following quarry operations. No broad scale rehabilitation has undertaken yet. The plan states that smaller isolated areas subject to rehabilitation, however the location, area and details regarding these areas meeting the objectives and procedures is not provided.
Rehabilitation Management Plan	54	Within 6 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Rehabilitation Management Plan for the site to the satisfaction of the Director-General. This plan must: (a) identify the disturbed area at the site; (b) describe in general the short, medium, and long-term measures that would be implemented to rehabilitate the site; (c) describe in detail the measures that would be implemented over the next 5 years to rehabilitate the site; and (d) describe how the performance of these measures would be monitored over time.	Review of the Rehabilitation Management Plan (RMP). Due April 2005. Implementation and results of performance monitoring over time. Site visit: rehabilitation actions and outcomes.	**Non-compliant** The initial version of the RMP was dated 2005. The first audit that the plan was lacking, particularly in relation to monitoring of rehabilitation performance. However, no reference to performance monitoring could be identified in the 2005 report. The second version of the RMP is included in section 8 of the FFMP, dated May 2009. The RMP has been modified slightly, however it does not address the issues raised in the previous audit and does not address requirement (b), (c) or (d) of this condition. **Opportunity for improvement DQ13/14** Undertake a complete review of the RMP to ensure it meets the requirements of this condition, represents BMP and integrates effectively with other elements of the FFMP.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
	55	Within 5 years of providing the Rehabilitation Management Plan to the Director-General, and every 5 years thereafter, the Applicant shall review and update the plan to the satisfaction of the Director-General.	Plan reviews and updates due: June 2005 June 2010	**Compliant in part** The initial version of the RMP was dated April 2005, with the revised version dated May 2009. As noted above, the RMP does not address requirements (b), (c) or (d) of condition 54, and deficiencies identified in the previous audit have not been addressed. This suggests that a complete review of the RMP has not been undertaken. **Opportunity for improvement DQ13/14** Refer to the recommendation for condition 54 above.
Rehabilitation and Conservation Bond	56	Within 6 months of the date of this consent, the Applicant shall lodge a suitable rehabilitation and conservation bond for the development with the Director-General. The sum of the bond shall be calculated at: (a) \$2.50/ m^2 for the area of disturbance at the development; and (b) \$3.00 /m^2 of the area of the compensatory habitat proposal (see Condition 49 above) to the satisfaction of the Director-General. *Notes:* • *If the rehabilitation and compensatory habitat proposal is completed to the satisfaction of the Director-General, the Director-General will release the rehabilitation and conservation bond.* • *If the rehabilitation and compensatory habitat proposal is not completed to the satisfaction of the Director-General, the Director-General will call in all or part of the rehabilitation and compensation bond, and arrange for the satisfactory completion of these works.*	Bond lodged on 27 April 2006 (was due May 2005; 12 months late)	**N/A** Closed in 2007 audit (not compliant).
	57	Within 3 years of lodging the rehabilitation and conservation bond with the Director-General, and every 5 years thereafter, unless the Director-General directs otherwise, the Applicant shall review, and if necessary revise, the sum of the rehabilitation bond to the satisfaction of the Director-General. This review must consider: (a) the effects of inflation; (b) any changes to the area of disturbance; and (c) the performance of the compensatory habitat proposal.	Bond lodged on 27 April 2006. Reviews due: April 2009 April 2014 Copies of the submitted reviews (AMER)	**Non-compliant** The original bond was set at \$2,066,343 revised in 2009 to \$2,559,812. The latest bond review was not undertaken in April 2014 as required. **Opportunity for improvement DQ14/14** Ensure that the Rehabilitation and Conservation Bond is lodged as soon as possible. This requirement should be included on a regulatory compliance schedule and responsibility allocated to appropriate personnel.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Reporting	58	The Applicant shall include a progress report on the Rehabilitation Management Plan in the Annual Review.	Review of progress reporting on the Rehabilitation Management Plan (RMP) in Annual Reviews	**Compliant in part** Progress reporting on the RMP is provided in the following sections of the AMERs: 2005/06: Section 2.8.1 2006/07 to 2012/13: Section 2.6.1 Since the 2007/2008 AEMR (6 years) this section has stated the following: *As outlined in the Rehabilitation Management Plan, the only quarry faces to become terminal (final) and ready for rehabilitation are along the southern wall in RIC and the northern edge of Croome Farm. The southern wall in RIC is now complete, and will be prepared for rehabilitation in the coming reporting period. Additionally, the benches completed to the west of the middle dam will also be scheduled for vegetating in the coming year.* This suggests that either reporting in the AEMRs is not correct and/or that implementation of the RMP is not progressing as required. **Opportunity for improvement DQ15/14** The actions reported in the AEMR should be linked to the actions identified in the RMP. As identified above, undertake a complete review of the RMP to ensure it meets the requirements of S4, C 54, represents BMP and integrates effectively with other elements of the FFMP.
Traffic and Transport				
North Kiama Bypass	59	The Applicant shall facilitate access to the North Kiama Bypass along Tabbita Road in accordance with the terms set out in the Deed of Agreement between the Applicant and Dunmore Sand and Soil Pty Ltd, dated 29 July 2004.	Interviews	**N/A** Boral now owns Dunmore Sand and Soil.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Transport Management Plan	60	The Applicant shall prepare and implement a Transport Management Plan for the development to the satisfaction of the Director-General. This plan must: (a) be prepared by a suitably qualified traffic consultant, in consultation with RMS and Council, and submitted to the Director-General for approval by 31 May 2014; (b) include a drivers' code of conduct for the development; (c) describe the measures that would be implemented to ensure: • all drivers of development-related vehicles comply with the drivers' code of conduct; and • compliance with the relevant conditions of this consent; and (d) include a program to monitor the effectiveness of the implementation of these measures.	Review of the Transport Management Plan (TMP)(due 31 May 2014) Monitoring of effectiveness	**Compliant in part** A Transport Management Plan has not been prepared, however elements of this condition have been met, including the Code of Conduct for drivers and a truck driver induction. **Opportunity for improvement DQ16/14** Prepare the TMP as soon as possible, and integrate the components already developed to date.
Cumulative Traffic Impact Study	60A	The Applicant shall, in conjunction with the operators of the Bass Point Quarry and the Albion Park Quarry, cause to be prepared an independent Cumulative Traffic Impact Study. The study must: (a) be undertaken by a suitably qualified traffic consultant, whose appointment has been approved by the Director-General; (b) be commissioned by 30 June 2014, and completed by 31 October 2014, or as otherwise agreed in writing by the Director-General; (c) be co-funded by the operators of the Dunmore, Bass Point and Albion Park quarries, proportionate to the quarries' respective quarry product road transport limits, as approved at 30 June 2014; (d) include a comprehensive assessment of current and future projected cumulative traffic impacts of the three quarries on the classified road network, undertaken in consultation with the RMS; and (e) identify any reasonable and feasible measures that can be implemented to minimise the traffic and road safety impacts of quarry trucks on Mount Ousley Road, and the likely cost of implementing these measures.	Date commissioned? Progress? Interviews Review the consultancy scope of works	**Compliant in part** Letter dated 27/06/2014 from Boral to Planning & Environment requesting a 3 month extension (to 30/09/2014) to prepare the Cumulative Traffic Impact Study as the modification to increase transport to the Albion Park Quarry has not yet been approved. A response form the Department dated 03/07/2014 advised that the request for the extensions of time was granted, and the independent Cumulative Traffic Study must now be commissioned by 30 September 2014 and completed by 31 January 2015. As at the 23/09/2014 the Albion Park Quarry modification was still not approved, and Boral again contacted Planning & Infrastructure to jointly request with Cleary Bros and Hanson that the deadline to commission the study be further extended by 3 months to 30 December 2014. Additionally, the deadline for completion of the study would be extended by 3 months to 30 March 2015. As of the 04/11/2014 a response had not been received from P&I.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
	60B	The Applicant shall, in conjunction with the operators of the Bass Point Quarry and the Albion Park Quarry, prepare and implement a program to implement any reasonable and feasible measures identified in the Cumulative Traffic Impact Study not already undertaken by the Applicant, in an equitable manner with the two other quarry operators, to the satisfaction of the Director-General. The program must be submitted to the Director-General for approval by 28 February 2015, or as otherwise agreed in writing by the Director-General.		**N/A** Not due as yet.
Parking	61	The Applicant shall provide sufficient parking on-site for all quarry-related traffic to the satisfaction of the Director-General.	Site visit: parking location and number of spaces DG sign-off	**Compliant** Parking at front of site - workers shuttled to locations beyond.
Road Haulage	62	The Applicant shall ensure that all loaded vehicles entering or leaving the site are covered.	Site visit: observations Interviews (drivers/ entrance security): process	**Compliant** All trucks observed entering and leaving the site were covered. This requirement is enforced at the gate/ weighbridge.
	63	The Applicant shall ensure all loaded vehicles leaving the site are cleaned of materials that may fall on the road before they are allowed to leave the site.	Site visit: observations Interviews (drivers): process Wheel wash memo and signage	**Compliant** All vehicles leaving the site were cleaned and had been through the wheel wash.
Aboriginal Heritage	64	The Applicant shall not destroy Aboriginal site DQ2 before it has obtained approval from the OEH under section 90 of the *National Parks & Wildlife Act 1974*. *Notes:* • *The OEH has indicated that it will issue this approval subject to conditions.* • *If a salvage component (including "community collection") is to accompany the application under section 90, the application should include a methodology/research design for the salvage activity, and an application for care and control of any recovered and collected Aboriginal objects by the Aboriginal community involved.*	Approval notice from OEH (dated 07/03/05) Review approval conditions and evidence of implementation of the conditions	**N/A** Closed in 2007 audit (compliant).
	65	Within 6 months of the date of this consent, the Applicant shall conserve Aboriginal site DQ2004/1 in consultation with the Aboriginal community, and to the satisfaction of the OEH.	OEH interview Evidence of consultation (meeting minutes, letters, etc.) Site visit: photographs	**Compliant** DQ2004/1 consists of two stone artefacts. The site is located outside of quarry operations and is not exposed to risk of disturbance. Boral regard active conservation not necessary.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Visual Impact				
Visual Amenity	66	The Applicant shall minimise the visual impacts of the development to the satisfaction of the Director-General.	Site visit: screening Photographs DG sign-off	**Complaint** Various visual and/or noise screening measures have been established around the site, including tree planting along the Princes Highway. Visibility of the quarry from the highway heading both north and south was very limited.
	67	Prior to carrying out any development that would be visible from the areas to the south west of the quarry, the Applicant shall construct, and subsequently maintain, the proposed visual/ noise bund between the Croome Farm extraction area and the Jamberoo Valley to the satisfaction of the Director-General.	Site visit: assess effectiveness and maintenance of the visual/ noise bund between the Croome Farm extraction area and the Jamberoo Valley	**Compliant** The visual and noise bund was constructed and vegetated prior to the issuing of the consent and was reported as complete in the 2005/ 2006 AEMR. Vegetation on the bund is well established and is in reasonable condition.
Lighting Emissions	68	The Applicant shall take all practicable measures to prevent and/or minimise any off-site lighting impacts from the development.	Site visit Complaints log	**Compliant** Directional lighting is used. Adjustments were made after single previous complaint made in October 2006, and there have been no subsequent complaints.
	69	All external lighting associated with the development shall comply with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*.	Maps of lighting layout Review of lighting technical parameters against the Standard	**Not able to determine** The likely impacts are effects on residents and transport system users. AS4282 identifies recommended maximum values for light technical parameters for control of obtrusive light, however, compliance with these could not be determined as light technical data has not been collected.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Waste Management:				
Waste Minimisation	70	The Applicant shall minimise the amount of waste generated by the development to the satisfaction of the Director-General.	Waste monitoring data (classification, volumes, frequency, management) DG sign-off	**Compliant in part** Due to the nature of the operation the waste streams and volumes generated are limited. Boral has installed bins for the separation of waste in the office and workshop and tyres have been reused for battering walls (e.g. near the crushing plant). exemption DG approval for tyre reuse could not be provided, as required under Appendix C of the NSW Fire Brigades *Guidelines for Bulk Storage of Rubber Tyres* has minimum requirements for the storage of rubber tyres, including those in open yard or within buildings and structures. See www.fire.nsw.gov.au/gallery/files/pdf/guidelines/rubber_tyres.pdf **Opportunity for improvement DQ17/14** Seek appropriate approval for tyre reuse on the site as soon as possible.
Waste Classification	71	All liquid and non-liquid wastes resulting from activities and processes at the site must be assessed, classified and managed in accordance with the EPA's Environmental Guidelines*: Assessment, Classification and Management of Liquid and Non-liquid Wastes (1999),* or any other EPA document superceding this guideline.	Waste management documentation Waste monitoring data (classification, volumes, frequency, management) Waste reduction actions against those identified in the Guideline	**Compliant** Waste management is discussed in the AEMRs. Liquid and non-liquid wastes have been classified in accordance with the Guidelines.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Reporting	72	The Applicant shall describe what measures have been implemented to minimise the amount of waste generated by the development in the Annual Review.	Review of waste management in the Annual Review	**Compliant in part** Reporting on waste minimisation measures is provided in the following sections of the AMERs: 2005/06: Section 2.5.2 2006/07 to 2012/13: Section 2.3.2 The information provided includes a statement of Boral's commitment to reducing waste and the waste streams. Based on the reporting no new measures have been implemented since the 2007/07 reporting period. **Opportunity for Improvement DQ18/14** Waste reporting could include types and weights/ volumes of waste generated and recycled. This would allow for comparisons between years and to identify the effectiveness of waste reduction measures/ initiatives.
Emergency and Hazards Management				
Dangerous Goods	73	The Applicant shall ensure that the storage, handling, and transport of dangerous goods is done in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the Dangerous Goods Code.	Review of dangerous goods documentation Transport of dangerous goods	**Compliant** Dangerous goods are managed under Boral's' corporate OH&S system and corporate audits are conducted annually at site. Diesel is stored in a self-bunded, double skin storage tank, while other hydrcarbons are kept in a bunded storage area outside the workshop. Other chemicals and dangerous goods are stored appropriately (see Appendix C: (xi)).
Safety	74	The Applicant shall secure the development to ensure public safety to the satisfaction of the Director-General.	Public safety assessment/ documentation Measures implemented to protect public safety Road safety adjacent to the site	**Compliant** The fence and gates around the site appear to be secure. There have been no security breaches or public safety issues associated with the development.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Emergency Management	75	Within 6 months of the date of this consent, the Applicant shall document, and subsequently implement measures to minimise the environmental impacts of any emergency situations that could arise as a result of the operation of the Dunmore Quarry to the satisfaction of the EPA. This documentation must: (a) identify any significant threats to the environment and/ or public health that could arise from activities associated with the operation of the quarry or construction works associated with the production increase. These threats may include excessive rainfall, problems during construction and operation, pump failures, excess flocculation, power or other utility failure, natural disaster, landslip, accidental spills and discharges, train derailment, spillage from trucks, fire etc; (b) identify any subsequent direct or indirect environmental effects as a result of the threats; (c) identify the pollution that would result due to these threats and impacts on operations and what impact the pollution would have on the health of the community and the environment; (d) develop actions to effectively respond to the disruption of operations so the risk of pollution is minimised; (e) develop a communications strategy for alerting relevant agencies and the potentially affected community in the event of the disruption to operations leading to significant pollution; (f) ensure that all relevant employees are familiar with the documentation; and (g) when developing this documentation identify any opportunities to integrate with Boral Emergency plans.	Emergency management documentation Evidence of measures being implemented/ maintained Interviews: awareness by a range of employees (actions in response to different scenarios)	**Compliant** An initial Emergency Contingency Management Plan was prepared (dated 12/05/2005) that met the requirements of this condition and was to the satisfaction of the EPA. This was superseded by a Pollution Incident Response Management Plan (PIRMP) (prepared in August 2012, with revisions in November 2012, April 2013 and August 2013) that outlines potential and threats and responses to such threats that should occur in the case of an environmental emergency. The plan also outlines the protocol for reporting of incidents that satisfy the immediate reporting criteria outlined by the EPA. Emergency response procedures are tested on a 6-monthly basis with emergency response drills performed as part of the sites overall emergency response incorporating both safety and environment.
Bushfire Management	76	The Applicant shall: (a) ensure that the development is suitably equipped to respond to any fires on-site; and (b) assist the Rural Fire Service and Emergency Services as much as possible if there is a fire on-site.	Site visit: fire fighting equipment (compare to requirements identified in the Bushfire Management Plan)	**Compliant** Dunmore Quarry uses existing fire control infrastructure, with fire fighting equipment at key points (that is serviced regularly), and an emergency response team to help reduce the impact of potential fires onsite. Boral has a contract with Wormald for fire extinguishers on site. See Appendix C: (xii) for examples.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
	77	Within 6 months of the date of this consent, the Applicant shall prepare a Bushfire Management Plan for the development, to the satisfaction of Council and the Rural Fire Service.	Review of the Bushfire Management Plan	**Compliant** The initial Bushfire Management Plan was prepared in May 2005, and was since been revised in October 2007, May 2010 and May 2013. The Plan states that "any amendments to the plan will be undertaken in consultation with the NSW Rural Fire Service". Copies of the plan have been lodged with the RFS and Shellharbour Shire Council with amendments undertaken during the review process being lodged with Department of Planning, Shellharbour City Council, NSW Rural Fire Service and the Dunmore Quarry CCC. Evidence of previous on-site discussion held with RFS was not provided.
Production Data	78	The Applicant shall: (a) provide annual production data to the DRE using the standard form for that purpose; and (b) include a copy of this data in the Annual Review.	Annual production data reports to the DRE	**Compliant** (a) standard form. (b) Production, sales and transport data is provided in the AEMRs (section 2.2).

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
SCHEDULE 5: ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING				
Environmental Management Strategy				
	1	Within 6 months of the date of this consent, the Applicant shall prepare, and subsequently implement, an Environmental Management Strategy for the development to the satisfaction of the Director-General. This strategy must: a) provide the strategic context for environmental management of the development; b) identify the statutory requirements that apply to the development; c) describe in general how the environmental performance of the development would be monitored and managed during the development; d) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the development; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the development; • respond to any non-compliance; • manage cumulative impacts; and • respond to emergencies; and e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development.	Review of the Environmental Management Strategy Review of implementation actions Interviews: knowledge of responsibilities, emergency response, complaints, etc.	**Compliant in part** An initial Environmental Management Strategy was prepared in August 2006. This document was updated in May 2014. These documents meet the requirements of this condition. No evidence of Director-General approval could be identified.
	1A	Within 6 months of the date of Modification Application 470-11-2003 Mod 4, the Applicant shall review and update as necessary the environmental management strategies and plans in consultation with the relevant government agencies and to the satisfaction of the Director-General.	(Mod 4 Nov 2008) Reviews due May 2009 Evidence of consultation Interview with EOH	**Compliant in part** The only document revised in the required timeframe was the Vegetation Offset Strategy/ Flora and Fauna Management and Rehabilitation Plan (May 2009).
	2	Within 14 days of receiving the Director-General's approval for the strategy, the Applicant shall: a) send copies of the approved strategy to the relevant agencies and Council; and b) ensure the approved strategy is made publicly available during the development.	Contact Council to determine if they have a copy Interview with Council and Agencies	**Non-compliant** (a) evidence that the strategy was submitted to Council could not be provided. (b) the strategy has not been made publically available (other than through the CCC). **Opportunity for improvement DQ19/14** Provide a copy of the Environmental Management Strategy to Council and maintain records of communication. Upload a copy of the strategy to the Boral Dunmore Quarry website.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Environmental Monitoring Program				
	3	Within 6 months of the date of this consent, the Applicant shall prepare an Environmental Monitoring Program for the development, in consultation with the relevant agencies, and to the satisfaction of the Director-General. This program must consolidate the various monitoring requirements in Schedule 4 of this consent into a single document.	Review of the Environmental Monitoring Program	**Compliant** The initial Environmental Monitoring Program was prepared in August 2006, with revisions in April 2009 and March 2014. This document consolidates the monitoring requirements and processes for noise, air quality, surface water and groundwater monitoring.
	4	The Applicant shall regularly review, and if necessary update, this program in consultation with the Director-General.	Evidence of review and update	**Compliant** See above condition.
Annual Review				
	5	The Applicant shall prepare and submit an Annual Review to the Director-General and the relevant agencies. This report must: a) identify the standards and performance measures that apply to the development; b) describe the works carried out in the last 12 months; c) describe the works that will be carried out in the next 12 months; d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years; e) include a summary of the monitoring results for the development during the past year; f) include an analysis of these monitoring results against the relevant: • impact assessment criteria; • monitoring results from previous years; and • predictions in the EIS; g) identify any trends in the monitoring results over the life of the development; h) identify any non-compliance during the previous year; and i) describe what actions were, or are being taken to ensure compliance.	Review of the Annual Environmental Management Reports (AEMRs) Complaints register	**Compliant** a) Section 3 b) Section 2 c) Section 5 d) Section 2.11.2. Graphs of annual complaints are provided. e) Section 3 f) Section 3 g) Section 3 h) Section 4 i) Section 4 and 5 Although the required issues have been covered in the AEMRs, the actual content is often limited in detail, does not link to the information provided in the relevant plan/ strategy, is not assessed against the previous years' commitments and a number of sections are copied and pasted from previous years. **Opportunity for improvement D20/14** Review the format and content of the AEMR and ensure that current and accurate information is provided.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Independent Environmental Audit				
	6 (DC issued February 2014)	Prior to 1 April 2014, and every 3 years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent and any relevant EPL (including any assessment, plan or program required under these approvals); (d) review the adequacy of any approved strategy, plan or program required under these approvals; and (e) recommend measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under these approvals. *Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Director-General.*	This condition was revised following Modification 6, with the details of the previous audit condition being presented below. Based on the changes the due dates for Independent Environmental Audits are as follows: • November 2006 (2 years of DA) • November 2011 (5 years thereafter) • Prior to April 2014 (Mod 6) • April 2017 (3 years thereafter) Copies of audit reports Interviews	**Compliant in part** The first Independent Environmental Audit covering the period 30 September 2004 to 31 December 2006 is dated 18 February 2007. This audit was approved by the Director-General (letter dated 05/06/2007), on the provision that the actions identified in the response letter from Boral (dated 23/02/2007) would be closed out. The audit due by November 2011 was not undertaken. Hyder Consulting was engaged by Boral to undertake this audit in March 2014. The audit team has the required qualifications and experience and DG endorsement. As requested by the DPE (letter dated 05/03/2007) none of the team engaged for this audit have had any previous involvement with the Dunmore Quarry. The next audit will be due in April 2017.
	7	Within 3 months of commissioning this audit, or as otherwise agreed by the Director-General, the Applicant shall submit a copy of the audit report to the Director-General, with a response to the recommendations contained in the audit report.	Status of implementation of recommendations Correspondence with DoP	**Compliant** The first audit covering the period 30 September 2004 to 31 December 2006 was submitted to the DoP on the 23 February 2007. A letter from Boral detailing the actions to undertaken in response to the audit findings was submitted at the same time. A second letter from Boral updating the implementation of actions was send to the DoP on the 31/05/2007. Compliant notwithstanding the omission of the 2011 audit.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Community Consultative Committee				
	8	The Applicant shall maintain the Community Consultative Committee (CCC) for the development to the satisfaction of the Director-General. This CCC must be operated in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version). *Notes:* • *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.* • *In accordance with the guideline, the Committee should comprise an independent chair and appropriate representation from the Applicant, Council, recognised environmental groups and the local community.*	Function, memberships, meeting frequency of the Community Consultative Committee Copy of minutes Compliance with the Guidelines	**Compliant** The CCC meetings are held at least twice a year and chaired by an independent chairperson. The meetings are run in accordance with the Department of Planning and Infrastructure Guidelines for Community Consultative Committees. Minutes of the CCC meetings are sent to members of the committee and the Department of Planning within one month of the meeting. Minutes sited.
Reporting				
Incident Reporting	10	The Applicant shall immediately notify the Director-General and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the development, the Applicant shall notify the Director-General and any other relevant agencies as soon as practicable after the Applicant becomes aware of the incident. Within 7 days of the date of the incident, the Applicant shall provide the Director-General any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	Incident reporting procedure (PIRMP). DG notifications.	**N/A** No incidents have occurred.
Regular Reporting	11	The Applicant shall provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.	Progress towards establishing a website and information to be provided.	**Compliant in part** No information regarding the environmental performance of the Dunmore Quarry was available on Boral's website (http://www.boral.com.au/article/dunmore_quarry_mainpage.asp searched 01/07/2014). Discussions during the audit on the 05/08/2014 identified that the website would be complete within 1-2 months. The auditee was notified on the 03/11/2014 that the Dunmore website is now operational, however the required information has not been uploaded. **Opportunity for improvement DQ21/14** Ensure the website is populated with the required information by the end of November 2014.

Issue	Number	Condition details	Evidence sources/ questions	Audit finding
Access to Information				
	12	By 1 May 2014, the Applicant shall: (a) make the following information publicly available on its website: • current statutory approvals for the development; • approved strategies, plans or programs; • a summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; • a complaints register, updated on a quarterly basis; • minutes of CCC meetings; • copies of any Annual Reviews or Annual Environmental Management Reports (over the last 5 years); • any independent environmental audit, and the Applicant's response to the recommendations in any audit; and • any other matter required by the Director-General; and (b) keep this information up to date, to the satisfaction of the Director-General.	Progress towards establishing a website and information to be provided	**Non-compliant** None of the required information for Dunmore Quarry was available on Boral's website (http://www.boral.com.au/article/dunmore_quarry_mainpage.asp searched 01/07/2014). Discussions during the audit on the 05/08/2014 identified that the website would be complete within 1-2 months. **Opportunity for improvement** Ensure the website is populated with the required information by the end of November 2014.
Revision of Strategies, Plans and Programs				
	13	Within 3 months of: (a) the submission of an Annual Review under condition 5 of Schedule 5; (b) the submission of an incident report under condition 10 of Schedule 5; or (c) a modification to the conditions of this consent (unless the conditions require otherwise), the Applicant shall review the strategies, plans, and programs required under this consent, to the satisfaction of the Director-General. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Director-General. *Note: The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the development.*	Plan review schedule and responsibilities System in place to ensure reviews are delivered on time	**N/A** As this condition was included in Modification 6 of the Development Consent dated February 2014 compliance could not be assessed. In accordance with S3, C3 this condition prevails where there is inconsistency with other conditions. **Opportunity for improvement DQ22/14** Boral Dunmore Quarry should note that all strategies, plans, and programs required under this consent should be reviewed on an annual basis 3 months following the submission of the Annual Review. It is recommended that all relevant plans/ strategies undergo a comprehensive review to ensure they comply with the requirements of the consent and meet best practice guidelines As identified previously, there have been a number of non-compliances regarding the meeting the timeframes for the preparation strategies, plans, and programs and document reviews have been sporadic. As such a review schedule should be established and maintained to ensure future compliance with this requirement.

5 COMPLIANCE WITH THE ENVIRONMENT PROTECTION LICENCE

The purpose of this section is to assess compliance with the relevant requirements of the Environment Protection Licence. Environment Protection Licence information was sourced from the NSW Environment Protection Authority (EPA) website (http://www.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=77&id=77&option=licence&searchrange=licence&range=POEO accessed 28 June 2014). Dunmore Hard Rock Quarry operates under Environment Protection Licence (EPL) 77, which was created following a POEO Licence Transfer application received on the 25/09/2000. Since its issue the EPL has been subject to a number of variations, with the current licence presented in Appendix D. For the purpose of this audit EPL compliance was assessed for the period 31 August 2006/07 to 31 August 2012/13 (seven annual return periods).

5.1 ENVIRONMENT PROTECTION LICENCE COMPLIANCE

Non-compliances associated with EPL annual returns for the Dunmore Quarry are presented in Table 6. Since 2006/07 42 non-compliances have been recorded across a range of licence conditions. None resulted in the issue of a penalty notice. As evident, most of the non-compliances relate to deficiencies in monitoring and reporting, rather than exceedences of limits. However, it should be noted that in the absence of monitoring, potential exceedences may not be detected.

In all instances Boral has taken appropriate action to mitigate non-compliance issues, as requested by the EPA.

Table 6: Non compliances associated with EPL annual returns

Annual return start and end dates	Date received	Licence Condition number	Type of non-compliance	EPA actions	No. of times
31 Aug 2012 – 30 Aug 2013	28 Oct 2013	M2.2	Ambient air monitoring not carried out due to equipment broken by livestock, and power failure/operator error. Licensee has implemented corrective actions, new fence and improved power supply and training.	Appropriate Action taken by licensee	13
		M4.1	Mast on weather station collapsed due to high winds, resulting in weather data not being collected for 5.5 days during reporting period. Mast was resecured and broken sensors replaced.	Appropriate Action taken by licensee	1

Annual return start and end dates	Date received	Licence Condition number	Type of non-compliance	EPA actions	No. of times
31 Aug 2011 – 30 Aug 2012	31 Oct 2012	M2.2	Air monitoring equipment reliability problems experienced. EPA directed Boral to implement corrective actions, to ensure environmental monitoring carried out as per licence requirements.	EPA has written to licensee regarding non-compliance and relevant action	7
		M2.3	Monthly water sample not collected due to flooding at the scheduled sampling time. Boral/EPA will review sampling schedule to enable compliance. EPA wrote to Boral 7 May 2013	EPA has written to licensee regarding non-compliance and relevant action	1
31 Aug 2010 – 30 Aug 2011	21 Oct 2011	M7.1(b)	Blast monitor used 3 days outside of annual calibration requirements. Blast compliant with monitoring criteria. No adverse impacts. No complaints. Calibration included in maintenance program & reminders issued.	Appropriate Action taken by licensee	1
		R4.1	Blast report submitted outside required 7 day reporting period due to blast occurring prior to Christmas public holiday period. Staff briefed to supply data in timely manner & download asap to avoid recurrence.	Appropriate Action taken by licensee	1
		M2.1	Not all PM10 samples taken during reporting period due to high volume air sampler malfunction. Upgraded to a newer software to prevent recurrence.	Appropriate Action taken by licensee	1
31 Aug 2009 – 30 Aug 2010	29 Oct 2010	M2.1	LDP3: One deposited dust sample not collected and analysed due to sample bottle being broken in field.	Appropriate Action taken by licensee	1
31 Aug 2008 – 30 Aug 2009	30 Oct 2009	M2.1	Two PM10 samples not taken and analysed due to equipment malfunction on 23 February and 1 March 2009 at EPL Point 5.	Appropriate Action taken by licensee	2

Annual return start and end dates	Date received	Licence Condition number	Type of non-compliance	EPA actions	No. of times
		M7.1	Blast monitor set-up incorrectly leading to false results being recorded for ground vibration (26.6 mmls) on 10.11.08.	EPA has written to licensee regarding non-compliance and relevant action	1
		M7.1	Blast airblast overpressure and ground vibration not measured at fixed point blast monitoring location on 15 May 2009.	EPA has written to licensee regarding non-compliance and relevant action	1
		R4.1	Blast monitoring results not submitted to EPA within 7 days of blast, submitted on 27 Feb 2009	Appropriate Action taken by licensee	1
31 Aug 2007 – 30 Aug 2008	31 Oct 2008	M2.1	PM10 samples not collected and analysed on 10 occasions during the reporting period at Monitoring Point 5 due to equipment malfunction and samples lost in transit between Quarry and Lab.	Appropriate Action taken by licensee	10
31 Aug 2006 – 30 Aug 2007	26 Oct 2007	M2.1	PM10 Samples not collected on 9 occasions at the beginning of the reporting period at monitoring point 5.	Appropriate Action taken by licensee	1

6 ADEQUACY OF STRATEGIES, PLANS AND PROGRAMS

The purpose of this section is to review the adequacy of strategies, plans and programs prepared under the development consent and approvals, and recommend measures or actions to improve the quality of these operational documents, with the overall aim of improving environmental performance and outcomes.

6.1 CRITERIA FOR ASSESSING ADEQUACY

The criteria below were considered in assessing the adequacy of strategies, plans and programs.

- Compliance with review and revision requirements: as the purpose of undertaking reviews of operational documents is to assess the current effectiveness, ensure ongoing compliance and promote continuous improvement.
- Compliance with consent requirements: how the document has met the requirements specified in the consent condition.
- Clear objectives, defined actions and performance criteria: it is necessary to have a clear picture of what a plan aims to achieve (outcomes), the actions required to achieve the outcome and how progress towards objectives is measured.
- Alignment with best practice and/or relevant guidelines.
- Implementation and monitoring: this considers the delivery of stated actions, monitoring of effectiveness and review/ revision commitments.
- Allocation of responsibilities and accountabilities: the effectiveness of plans and strategies often hinges on defining clear responsibilities and accountabilities for their implementation.
- Alignment and integration between plans: as the management of many environmental parameters are linked it is essential that these be referenced between plans to enable to identification of the broader strategic environmental management processes on-site.

6.2 STRATEGY, PLAN AND PROGRAM REVIEW AND REVISION

Schedule 5, condition 1A states:
Within 6 months of the date of Modification Application 470-11-2003 Mod 4, the Applicant shall review and update as necessary the environmental management strategies and plans in consultation with the relevant government agencies and to the satisfaction of the Director-General.

Modification 6 of the Development Consent (dated February 2014) includes a new condition in Schedule 5, condition 13(c) stating:
Within 3 months of:
(a) the submission of an Annual Review under condition 5 of Schedule 5;
(b) the submission of an incident report under condition 10 of Schedule 5; or
(c) a modification to the conditions of this consent (unless the conditions require otherwise), the Applicant shall review the strategies, plans, and programs required under this consent, to the satisfaction of the Director-General. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Director-General.

Overall, the level of compliance with the required review schedule of plans and strategies is low. Refer to **DQ22/14**.

6.3 ADEQUACY REVIEW

6.3.1 ENVIRONMENTAL MANAGEMENT STRATEGY

The Environmental Management Strategy (EMS) was initially prepared in 2006 and reviewed and revised in March 2014. The EMS has been prepared to address Schedule 5, Condition 1.

Assessment against consent requirements

Condition requirements	Assessment
Sch 5, 1. Within 6 months of the date of this consent, the Applicant shall prepare, and subsequently implement, an Environmental Management Strategy for the development to the satisfaction of the Director-General. This strategy must:	**Compliant in part**
a) provide the strategic context for environmental management of the development	**Satisfactory**
b) identify the statutory requirements that apply to the development;	**Satisfactory**
c) describe in general how the environmental performance of the development would be monitored and managed during the development;	**Unsatisfactory**: the performance objectives for the various management issues onsite (e.g. water, vegetation, heritage) have not been identified; there heavy focus on monitoring with no mention of how management actions are linked to monitoring outcomes.
d) describe the procedures that would be implemented to:	
keep the local community and relevant agencies informed about the operation and environmental performance of the development	**Unsatisfactory**: only the CCC is discussed, with no mention of the website or blast notifications. Interactions with agencies and council is not discussed.
receive, handle, respond to, and record complaints	**Satisfactory**
resolve any disputes that may arise during the course of the development	**Satisfactory**
respond to any non-compliance	**Unsatisfactory**: focusses on exceedences of DC and EPL criteria only. No discussion of other DC conditions or audit findings.
manage cumulative impacts	**Unsatisfactory**: no covered in the document.
respond to emergencies	**Satisfactory**

Condition requirements	Assessment
e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development.	**Unsatisfactory**: the information provided is very brief and lacks detail regarding responsibilities.

Assessment against other criteria

The findings for the assessment against the other adequacy review criteria are discussed below:

- Clear objectives, defined actions and performance criteria: overarching environmental objectives are not identified for the site, or for specific environmental issues, such as water management or air quality (environmental performance). Furthermore, there is limited review of the actions being implemented (or planned) to achieve objectives.
- Implementation and monitoring: as an overarching strategy most of the actions identified relate to the plans and programs that sit underneath it. The Strategy does refer to annual internal audits for the site. Evidence for these. In general, monitoring arrangements in the context of the DA conditions are discussed.
- Alignment and integration between plans: the EMS does not present an overview of the structure of environmental management documentation on the site, and how these interact and integrate. Furthermore, the individual sections do not refer to all the documentation requirements relevant to them. For example, section 5.2 *Flora and Fauna* does not mention the FFMP or the Remnant Vegetation MP.
- Allocation of responsibilities and accountabilities: there also appears to be confusion regarding the interaction between plans. For example, discussion of the Vegetation Offset Strategy refers to it being underpinned by pre-clearance surveys and the vegetation clearance protocol, however the relevance of these to the management offset areas seems inappropriate.

  The Strategy does not include information on the frequency of review and revision, or responsibilities for this.

Assessment of adequacy

Although the Plan generally meets the most of the requirements, it is recommended that the above shortfalls identified above be addressed during the next review (due 3 months following the submission of the 2013/14 AEMR).

6.3.2 WATER MANAGEMENT

This section includes a review of the following plans, strategies and programs relating to water management:

- Site Water Management Plan (SWMP) (Matrix Consulting, 2005)
- Draft Water Management Plan (WMP) (Evans & Peck, 2008)
- Erosion and Sediment Control Plan (ESCP)
- Integrated Water Management Strategy (IWMS).

The Environmental Monitoring Program contains the Groundwater Monitoring Program and Surface Water Monitoring Program which outline the monitoring requirements of the SWMP and WMP. These programs is discussed in Section 6.3.4.

SWMP/ WMP: Assessment against consent requirements

Condition requirements	Assessment
41. Within 12 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Site Water Management Plan for the development, in consultation with the NOW, and to the satisfaction of the Director-General. This plan must include:	**Compliant in part**:
(a) the predicted site water balance	**Satisfactory**: SWMP section 3.2, updated in the WMP section 5.4.
(b) an Erosion and Sediment Control Plan	**Unsatisfactory**: WMP section 1.1.6 (see below for details)
(c) a Surface Water Monitoring Program	Refer to section 6.3.4 of this report.
(d) a Ground Water Monitoring Program	Refer to section 6.3.4 of this report.
(e) an Integrated Water Management Strategy	**Satisfactory**: SWMP

SWMP/ WMP: Assessment against other criteria

The findings for the assessment against the other adequacy review criteria are discussed below:

- Clear objectives, defined actions and performance criteria: the SWMP does not state any overarching water management objectives for the quarry site. The WMP lists objectives in Section 1.1.5, however, these relate to the objectives of the document, rather than water management initiatives for the site. Objectives such as meeting consent conditions, minimising on/ offsite impacts, and mains water consumption would be considered appropriate for inclusion.
- Implementation and monitoring: off the stated water monitoring commitments in the WMP the following are not being met:
    - Water levels in all dams were not monitored in accordance with the plan. A visual record is undertaken which notes whether dam levels are high, medium or low. The requirement within the plan is to monitor weekly using depth gauges.
    - Monthly volumes of water transferred between storages are not recorded, though this occurs regularly on site.
    - Monthly water use for dust suppression and plant use does not occur.

    Of the stated water monitoring commitments in the SWMP the following are not being met:

    - Creek stability monitoring program which requires annual visual assessments of three sites and photographic records. Creek stability is checked when water quality monitoring is undertaken and a photo is taken if the bed is unstable. However, there is no annual inspection undertaken as the SWMP requires. This is a requirement of Consent Condition 43 (Schedule 4) and should be undertaken.
    - Assessment of the correlation between Meter 8 water volumes and rainfall as an indicator of changes to groundwater inflow. Groundwater monitoring is a requirement of Consent Condition 40 of Schedule 4 and should be undertaken.
    - Annual review of the groundwater monitoring results from Dunmore Sand and Soil, as an indicator of potential groundwater impacts as a result of quarry operations. This information is not included in the AEMRs or Annual Returns as required. Groundwater

monitoring is a requirement of Consent Condition 40 of Schedule 4 and should be undertaken.

From the interview with site staff it was revealed that neither plan is used in an operational context.

- Allocation of responsibilities and accountabilities: neither the SWMP nor the WMP state who is responsible for review and revision, implementation of monitoring or actions, reporting or plan approval. The plans do not include information on the frequency of review and revision, or allocate responsibilities for this.
- Alignment and integration between plans: consent condition 41 of Schedule 4 requires the preparation of a Site Water Management Plan. A SWMP was prepared by Matrix Consulting in November 2005 to meet this condition, with an updated WMP (draft) being prepared by Evans & Peck in 2008 to reflect changes to water management arrangements and infrastructure on site.

  There is a lack of clarity regarding the interaction between these two plans. The draft WMP includes an updated water balance, however not all the water management requirements or issues for the quarry are addressed in the document. As such, the SWMP is still relevant and applicable for several issues (e.g. the IWMP) and the WMP supersedes the requirements of the SWMP where there is overlap.

  There is confusion regarding the name of the 2005 document, with the title page stating *Site Water Management Plan*, while the document name states *Dunmore Quarry – Integrated Water Cycle Management strategy*. As identified in the conditions, the intent is for the IWMP to sit under the WMP.

SWMP/ WMP: Assessment of adequacy

Currently the WMP and associated plans and strategies are not cohesive and are presented more as technical consultancy reports, rather than operational plans that define the issue, present the management objectives and actions, identify monitoring and review to promote ongoing improvement and allocate clear responsibilities. This lack of clarity is likely to be a key factor in the inadequate implementation of the plans.

It is recommended that the water management plans be reviewed, updated (based on the relevant guidelines) and integrated into a single operational document, and that that the shortfalls identified above be addressed during the next review (due 3 months following the submission of the 2013/14 AEMR).

Erosion and Sediment Control Plan: Assessment against consent requirements

Condition requirements	Assessment
42. The Erosion and Sediment Control Plan shall:	**Non-compliant**: overall, the information covered in the 2008 WMP is not sufficient to address this requirement.
(a) be consistent with the requirements of the Department of Housing's *Managing Urban Stormwater: Soils and Construction* manual;	**Unsatisfactory:** the WMP does not address the following requirements identified in the Blue Book: • A site layout map detailing the location of the best management practices (BMPs) for erosion and sediment control, as well as other aspects of the site including boundaries, drainage patterns, vegetation, etc. • Information on how the various soil conservation measures will carries out, including timing, maintenance programs, etc.
(b) identify activities that could cause soil erosion and generate sediment;	**Unsatisfactory**: Not clearly identified.
(c) describe measures to minimize soil erosion and the potential for the transport of sediment to downstream waters;	**Unsatisfactory**: Not clearly identified.
(d) describe the location, function, and capacity of erosion and sediment control structures;	**Unsatisfactory**: Not covered.
(e) describe what measures would be implemented to maintain the structures over time.	**Unsatisfactory**: Brief references to maintenance of dams only.

Erosion and Sediment Control Plan: Assessment against other criteria

The findings for the assessment against the other adequacy review criteria are discussed below:

- Alignment with best practice and/or relevant guidelines: the DA identifies *Managing Urban Stormwater: Soils and Construction* manual (the Blue Book) (Landcom, 2014) as the relevant guideline for the preparation of the ESCP[3]. Section 1.1.6 - *Erosion and Sediment Control Plan* of the WMP states that the document "provides all the details necessary to replace the need for the preparation of a separate ESCP". However, as identified in the table above the ESCP is not consistent with the requirements of the manual. Other than brief statements regarding rock-check dams, dust suppression and the wheel wash system, the WMP does not address the suggested content or measures (e.g. revegetation of non-operational disturbed areas, land-shaping of temporary and permanent earthworks, inspection regimes) identified in Volume 2B.
- Implementation and monitoring: due to the nature of quarry operations, the management of erosion and sediment control should be an ongoing consideration, particularly when undertaking works on the site. Although it is not deemed necessary to draft an ESCP for undertaking particular works, it would be pertinent to include consideration of erosion and sediment control measures through the Safe Work Method Statement (SWMS). As evident from Appendix B (i) this is not highlighted as an issue to consider.

[3] It should be noted that *Managing Urban Stormwater: Soils and Construction Volume 1 and Volume 2B – Mines and Quarries* is a more appropriate document to reference.

Erosion and sediment control and stormwater devices are maintained and monitored effectively through 3-monthly inspections of sediment ponds, etc (refer to the review of condition 33 in Table 5).

- Alignment and integration between plans: the ESCP does not reference to the Storm Water Management System requirements (schedule 4, conditions 31 and 32), or other documents that address onsite issues that will have an impact on erosion, such as the Vegetation Clearing Protocol.

Erosion and Sediment Control Plan: Assessment of adequacy

The plan is considered inadequate for its intended purposes. It is recommended that the ESCP should be prepared as a separate plan (within the WMP) that address the requirements of the Blue Book and the consent condition, and that that the shortfalls identified above be addressed during the next review (due 3 months following the submission of the 2013/14 AEMR).

Integrated Water Management Strategy: Assessment against consent requirements

Condition requirements	Assessment
45. The Integrated Water Management Strategy shall:	**Compliant**: details are provided in the SWMP
(a) explore a range of options for a sustainable resource alternative for water supply to the site;	**Satisfactory**: Section 2
(b) identification of all possible and available sources of water;	**Satisfactory**: Section 2.3
(c) consistency with Government Water Reform initiatives and policies;	**Satisfactory**: Section 4.2
(d) quality of water to meet usage requirements including any possible effects on product;	**Satisfactory**: Section 2.4
(e) costs of supply;	**Satisfactory**: Section 4.4
(f) health and environmental impacts;	**Satisfactory**: Sections 4.6 and 4.5, respectively
(g) legislative requirements;	**Satisfactory**: Section 4.7
(h) assessment of the feasibility, benefits and costs of options;	**Satisfactory**: Section 4.8
(i) a process to identify and evaluate preferred options for implementation; and	**Satisfactory**: Section 5.1
(j) the identification of a timetable for implementation of the selected options.	**Satisfactory**: Section 5.2

Integrated Water Management Strategy: Assessment against other criteria

The findings for the assessment against the other adequacy review criteria are discussed below:

- Implementation and monitoring: the implementation schedule for selected options is presented in section 5.2 of the SWMP, however, this does not appear to be reported and/or updated in subsequent documentation.
- Alignment and integration between plans: although all the elements of the IWMP are included in the 2005 SWMP, it is not presented as an integrated strategy within the WMP. As identified above, there is confusion regarding the name of the 2005 document, with the title page stating *Site Water Management Plan*, while the document name states *Dunmore Quarry – Integrated Water Cycle Management strategy*.

Integrated Water Management Strategy: Assessment of adequacy

Overall, the IWMS is deemed adequate to meet the consent requirements. However, the overarching purpose and temporal relevance of the Strategy is not clear. This is likely to be a reflection of the adequacy of the consent condition, rather than Strategy itself.

It is recommended that Boral initiate discussions with DPE regarding the redrafting/ updating this condition.

6.3.3 FLORA AND FAUNA MANAGEMENT

This section includes a review of the following plans, strategies and programs relating to flora and fauna management:

- Flora and Fauna Management Plan
- Vegetation Clearing Protocol
- Compensatory Habitat Management Plan
- Remnant Vegetation Conservation Plan
- Rehabilitation Management Plan (Boral, 2005).

Cumberland Ecology prepared a plan in 2009 entitled “Vegetation Offset Strategy (Development Consent Conditions 46-58) Flora and Fauna Management Plan and Rehabilitation Plan 2009 Revision”.

Flora and Fauna Management Plan: Assessment against consent requirements

Condition requirements	Assessment
47. Within 12 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Flora and Fauna Management Plan for the development to the satisfaction of the Director-General. This plan must include:	**Compliant in part**
(a) a Vegetation Clearing Protocol;	**Satisfactory**: Section 4.0
(b) a Compensatory Habitat Management Plan;	**Satisfactory**: Section 5.0
(c) a Remnant Vegetation Conservation Plan.	**Satisfactory**: Section 6.0

Flora and Fauna Management Plan: Assessment against other criteria

The findings for the assessment against the other adequacy review criteria are discussed below:

- Clear objectives, defined actions and performance criteria: objectives presented in the Executive Summary of the FFMP are merely a reiteration of the requirements set out in the conditions of consent, rather than an overview of objectives for flora and fauna management associated with the development.
- Implementation and monitoring: sections 7.1 – 7.3 of the FFMP refer to the performance criteria, monitoring and review and adaptive management of the Plan, however the details are described throughout other parts of the document (in the embedded Plans). Whilst the AEMRs report on the latest developments with regards to flora and fauna management on the site, no evidence of annual monitoring in accordance with the Plan was available. There is a statement that the Plan *can* be reviewed should areas fail or if major weed

infestations occur. It should be noted that the aim of effective ongoing monitoring and adaptive management is to promote early identification of issues and implement mitigation actions accordingly.

An audit of the Flora and Fauna Management Plan commissioned in 2007 identified five recommendations to update the plan to enable a more practical approach. These recommendations have generally been incorporated into the Plan. The second independent external audit of the FFMP is now 2 years overdue, being due in 2012.

- Allocation of responsibilities and accountabilities: the FFMP does not state who is responsible for review and revision, implementation of monitoring or actions, reporting or plan approval.
- Alignment and integration between plans: the alignment between all the documents pertaining to flora and fauna management lacks clarity and integration. The confusion regarding integration between Plan elements is evident in the Flora and Fauna section of the EMS.

  The difference, if any, between the management objectives and management processes for the compensatory habitat, remnant vegetation and offset areas is not clear, and the current format of the document is overly complex by addressing these separately. It should be noted that this problem is primarily driven by the structure/ requirements of the consent conditions.

Flora and Fauna Management Plan: Assessment of adequacy

Although the FFMP generally meets the requirements of the consent, there is opportunity for improvements that will provide greater clarity and integration regarding the management of the various vegetation areas (offsets, remnants, compensatory habitat), and enhance the efficiency of the implementation of management and monitoring actions. In its current format the FFMP is not an effective operational document.

As stated above, the lack of integration is mostly due to the format of the consent conditions. It is recommended that the FFMP be reviewed and a structure identified that provides greater integration, has a more operational focus and addresses the shortfalls identified above. Boral can then engage in discussions with DPE and OEH regarding aligning the consent conditions to the proposed structure and/or seeking formal approval.

Vegetation Clearing Protocol: Assessment against consent requirements

The Vegetation Clearing Protocol is included in Section 4 of the FFMP.

Condition requirements	Assessment
48. The Vegetation Clearing Protocol shall:	**Compliant**
(i) delineate the areas of remnant vegetation to be cleared; and	**Satisfactory**
(j) describe the procedures that would be implemented for:	**Satisfactory**
• pre-clearance surveys;	**Satisfactory**
• progressive clearing;	**Satisfactory**
• fauna management;	**Satisfactory**
• conserving and reusing topsoil;	**Satisfactory**
• collecting seed from the site;	**Satisfactory**
• salvaging and reusing material from the site; and	**Satisfactory**

Condition requirements	Assessment
• controlling weeds.	**Satisfactory**

Vegetation Clearing Protocol: Assessment against other criteria

- Clear objectives, defined actions and performance criteria: no objectives have been identified for the VCP or performance criteria (measures of success) have been identified, however the actions are reasonable well defined. The purpose or desired outcome associated with of some actions is not specified (e.g. reusing topsoil and reusing material from the site), making it difficult to assess if the purpose has been met.
- Implementation and monitoring: a pre-clearance fauna survey is to be undertaken prior to any vegetation clearing for the approved quarry extension. If seed collection has occurred, evidence would need to be collected to ensure this has been undertaken suitably. Evidence of these requirements being met was not provided.

  There is limited monitoring specified to ensure actions identified in the Protocol are being successful. For example, without monitoring species recruitment, diversity and weed infestation associated with the reuse of topsoil, it cannot be determined if this action is appropriate, and/or if the technique being used is the most effective. The same applies to the reuse of 'material' from the site.
- Alignment and integration between plans: there is reasonable connection between the identified actions and the success of the CHMP/ CHMZs. This alignment would be strengthened through improved consideration of monitoring to ensure that the VCP is contributing effectively. If the monitoring actions identified in the CHMP apply, then this should be specified.

Vegetation Clearing Protocol: Assessment of adequacy

Generally the VCP is adequate, however the issues identified above should be addressed during the next review (due 3 months following the submission of the 2013/14 AEMR).

Compensatory Habitat Management Plan: Assessment against consent requirements

The Compensatory Habitat Management Plan is included in Section 5 of the FFMP.

Condition requirements	Assessment
49. The Compensatory Habit Management Plan shall:	**Compliant**
(a) describe the compensatory habitat proposal for the: • *Melaleuca armillaris* Tall Shrubland; and • Blue Gum-White Box Woodland/Forest;	**Satisfactory**
(B) justify why this area(s) is suitable for the compensatory habitat proposal;	**Satisfactory**
(c) establish baseline data for the existing habitat in the proposed compensatory habitat area(s);	**Satisfactory**
(d) describe how the compensatory habitat proposal would be implemented;	**Satisfactory**
(e) set completion criteria for the compensatory habitat proposal; and	**Satisfactory**

Condition requirements	Assessment
(f) describe how the performance of the compensatory habitat management proposal would be monitored over time.	**Satisfactory**

Compensatory Habitat Management Plan: Assessment against other criteria

- Clear objectives, defined actions and performance criteria: the stated objective of the CHMP is to "offset the ecological impacts of the approved quarry extension".

  The statement *"Successful reconstruction/fabrication of Melaleuca* armillaris *Tall Shrubland and Illawarra Lowlands Grassy Woodland in the Compensatory Habitat Management Zone will help to minimse the sterilisation of future extraction resources underlying these endangered ecological communities elsewhere on Boral owned land in the study area*" is of is not appropriate and should be removed from the Plan.

- Implementation and monitoring: monitoring of tubestock, remediation and weeding should be undertaken following establishment of native plants in CHMZs and the Central Vegetation Offset (CVO). Table 5.1 in the FFMP outlines an Action Plan for each compensatory habitat site, including timing/frequency of each action and Table 5.5 outlines the monitoring program for each compensatory habitat site (MATS, ILGW, CVO).

  Evidence was sighted that weed management is undertaken on offset sites and within the quarry by Lamond Contractors. Evidence was also sighted that tubestock was planted on these sites. However, monitoring records could not be provided. Monitoring is required immediately prior to treatment and annually up to 5 years and should include photopoints (CVO, ILGW, MATS) and quadrats (ILGW, MATS). Compensatory habitat and remnant vegetation conservation monitoring results should be submitted annually to DoP. Some reporting occurs in the AEMRs, however, only the 2008-2009 AEMR reported monitoring results adequately.

  Furthermore, conservation values on the site and flora and fauna requirements need to be conveyed to site contractors through the induction in accordance with the plan, however the induction does not provide this.

- Alignment and integration between plans: there is reasonable connection between the CHMP/ CHMZs and the VCP, however the relationship with the management of other vegetation (on and offsite) is not specified.

Compensatory Habitat Management Plan: Assessment of adequacy

The content of the Plan is adequate, however it is not considered to be adequately implemented, particularly in relation to the monitoring actions. Ensure greater integration of management between vegetation areas.

Remnant Vegetation Conservation Plan

The Remnant Vegetation Conservation Plan is included in Section 6 of the FFMP. It relates to remnant subtropical rainforest vegetation immediately south of the quarry and the CVO.

Condition requirements	Assessment
50. The Remnant Vegetation Conservation Plan shall:	**Compliant**
(a) describe what measures would be implemented to conserve, maintain and enhance the vegetation in the area to the south of the development marked in the map in Appendix 2;	**Satisfactory**
(b) establish baseline data for the existing vegetation in the area; and	**Satisfactory**
(c) describe how the performance of the measures described in (a) above would be monitored over time.	**Satisfactory**

Remnant Vegetation Conservation Plan: Assessment against other criteria

- Clear objectives, defined actions and performance criteria: the objective identified in section 6.3 are not actually objectives, but rather actions and issues to manage.
- Implementation and monitoring: a number of actions are required in the RVCP for the two areas, including weed control and assisted regeneration. Annual monitoring within replicated quadrats and photopoints is required to determine the success of treatments (as per the CHMP). No evidence could be provided that monitoring is occurring.
- Alignment and integration between plans: again, the alignment between vegetation area, and the desired management outcomes is not clear.

Remnant Vegetation Conservation Plan: Assessment of adequacy

The content of the Plan is adequate, however it is not considered to be adequately implemented, particularly in relation to the monitoring actions. Ensure greater integration of management between vegetation areas.

Rehabilitation Management Plan

The Rehabilitation Management Plan is included in Section 8 of the FFMP.

Condition requirements	Assessment
54. Within 6 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Rehabilitation Management Plan for the site to the satisfaction of the Director-General. This plan must:	**Non-compliant**: the initial version of the RMP was dated 2005. The first audit that the plan was lacking, particularly in relation to monitoring of rehabilitation performance. The second version of the RMP is included in section 8 of the FFMP, dated May 2009. The RMP has been modified slightly, however it does not address the issues raised in the previous audit.
(a) identify the disturbed area at the site;	**Satisfactory**
(b) describe in general the short, medium, and long-term measures that would be implemented to rehabilitate the site;	**Unsatisfactory**
(c) describe in detail the measures that would be implemented over the next 5 years to rehabilitate the site; and	**Unsatisfactory**
(d) describe how the performance of these measures would be monitored over time.	**Unsatisfactory**

Undertake a complete review of the RMP to ensure it meets the requirements of this condition, represents BMP and integrates effectively with other elements of the FFMP.

Rehabilitation Management Plan: Assessment against other criteria

- Clear objectives, defined actions and performance criteria: the objectives described in section 8.3 of the RMP are not actually objectives, but rather are a reiteration of the consent conditions and/or describe the scope of the Plan.
- Implementation and monitoring: rehabilitation proposed for the first five years focuses on two areas where overburden would be placed on benches and benches would be revegetated. So far, rehabilitation has not occurred in accordance with the Plan. Site staff have suggested that rehabilitation is not required in these areas as there is still work occurring. As such, the Plan should be updated to reflect what is occurring on site.

  Since 2007/2008 (6 years) rehabilitation reporting in the AEMRs has stated the following:

  As outlined in the Rehabilitation Management Plan, the only quarry faces to become terminal (final) and ready for rehabilitation are along the southern wall in RIC and the northern edge of Croome Farm. The southern wall in RIC is now complete, and will be prepared for rehabilitation in the coming reporting period. Additionally, the benches completed to the west of the middle dam will also be scheduled for vegetating in the coming year.

  This suggests that either reporting in the AEMRs is not correct and/or that implementation of the RMP is not progressing as required.

Rehabilitation Management Plan: Assessment of adequacy

The RMP is not considered adequate either in the content to address the conditions, or the implementation and monitoring of rehabilitation actions. It is recommended that the RMP be revised during the next review (due 3 months following the submission of the 2013/14 AEMR) to address the shortfalls identified above.

6.3.4 ENVIRONMENTAL MONITORING PROGRAM

Assessment against consent requirements

Schedule 5, Condition specifies that an Environmental Monitoring Program is to be prepared in consultation with the relevant agencies, and must consolidate the various monitoring requirements in Schedule 4. Table 7 identifies the monitoring requirements in Schedule 4 and where they are addressed in the Environmental Monitoring Program. As evident, all monitoring requirements are addressed, except for meteorological monitoring.

Table 7: Monitoring requirements identified in Schedule 4

Aspect	Condition(s)	Section(s) of the EMP
Noise (Noise Monitoring Program)	12, 13 14	3.0
Overblast pressure	16	3.2, 3.3, 3.6
Ground vibration	17	3.2, 3.3, 3.6
Blast monitoring	20	3.0, 3.6
Air quality (Air Quality Monitoring Program)	22 26	4.0
Meteorological	27	Not included
Water (Surface Water Monitoring Program) (Ground Water Monitoring Program)	40 42 43	 5.0 6.0

Of the actual aspects to be monitored, (i.e. the parameters, locations, frequency, etc.) the Program covers all requirements except the following:

- Surface Water Monitoring Program: water levels in all dams, water usage and water transfer volumes
- Groundwater Monitoring Program: groundwater impact assessment criteria, a program to monitor regional groundwater levels and quality.

Assessment against other criteria

One observation is that the main content of the Program is 'cut and pasted' from the management plans for the various aspects, and as such the information provide is generally at a strategic/ high level and tends to read as a 'report' on monitoring arrangements. The detail to undertake monitoring activities is provided in the appendices as 'standard procedures', along with maps of the specific monitoring locations.

Assessment of adequacy

Overall the Environmental Monitoring Program is adequate. The key opportunities for improvement include:

- inclusion of meteorological monitoring requirements and processes
- inclusion of the surface and ground water monitoring requirements identified above
- adapt the 'standard procedures' into concise site-specific procedures.

6.3.5 BLAST MANAGEMENT PLAN

A Blast Management Plan, as required by Schedule 4 Condition 20, was prepared by Boral in May 2013 (despite development not as yet being within 250 m of Lot 10 DP977931). The Blast Management Plan outlines the monitoring and notification requirements during blasting events.

Blast monitoring records are generally kept in accordance with the plan, with the exception of Maximum Instantaneous Charge (MIC) which has not been recorded for each blast. This is not a requirement of the consent conditions. There have been several incidences of non-compliance with regard to blasting. These are highlighted in the EPL compliance table (Table 6).

BMP: Assessment of adequacy

The plan was found to be generally adequate for its purpose.

6.3.6 FINES MANAGEMENT PLAN

The Fines Management Plan (FMP), as required under Schedule 4 Condition, was prepared in 2005. As discussed in the Environmental Management Strategy and AEMRs, the FMP has not been used since for the site 2008/09 as fines have been transferred as a product, rather than being stockpiled on the site. Although DPE should be aware of this through the AEMRs, there has not been a formal agreement from the Department agreeing that that the plan is no longer required.

FMP: Assessment of adequacy

It is recommended that Boral engage in discussions with DPE regarding the revision of the condition pertaining to the Fines Management Plan. An appropriate revision may include the implementation of the Plan being triggered when the storage of fines on the site reaches a particular volume.

6.3.7 FLOCCULENT MANAGEMENT PLAN

The EPA and DPE (formerly DECC) have agreed that this plan is not required, as such this condition should be removed from the consent approval.

6.3.8 TRANSPORT MANAGEMENT PLAN

The Transport Management Plan, required under Schedule 4 condition 60 (Modification 6) was not prepared, however components, such as the drivers' code of conduct, have been developed and implemented.

6.3.9 BUSHFIRE MANAGEMENT PLAN

A Bushfire Management Plan was prepared by Boral in 2005 in consultation with the RFS and has most recently been updated in 2013, as required by Consent Condition 77 in Schedule 4. The plan is required to be updated every three years. To date, updates have occurred within this frequency.

In accordance with the plan, inductions should include bushfire hazards. Whilst emergency response and hazards are discussed in the induction, it does not specifically address bushfire risk. The AEMRs provide a summary of bushfire management issues undertaken within the previous year in accordance with the requirements of the plan. Regular contact with the RFS occurs also in accordance with the plan.

BMP: Assessment of adequacy

The BMP has been prepared in accordance with the consent conditions and in line with best practice. The BMP has also been adequately implemented.

7 AUDIT CONCLUSIONS

7.1 COMPLIANCE ASSESSMENT

7.1.1 CONDITIONS OF CONSENT

A total of 26 of the 90 applicable conditions of the consent were found to be non-compliant (6) or compliant in part (20). The root cause of a number of deficiencies relate to inadequacies in record keeping and management of correspondence, document control and compliance tracking. A number of the non-compliant/ partial compliant conditions were also found to be non-compliant in the 2006 Audit, and would have been mitigated if the recommendations from the previous audit had been implemented in full.

In general, the non-compliances posing the greatest risk are those relating to monitoring, as the key purpose of monitoring is to promote early detection of problems and subsequently implement mitigation and management strategies.

7.1.2 ENVIRONMENT PROTECTION LICENCE

Since 2006/07 there has been 42 non-compliances recorded across a range of EPL conditions. Most of the non-compliances relate to deficiencies in monitoring and reporting, rather than exceedences of limits. However, it should be noted that in the absence of monitoring, potential exceedences may not be identified.

7.2 ADEQUACY OF STRATEGIES, PLANS, AND PROGRAMS

The majority of plans, strategies and programs developed in response to the conditions of consent were found to be lacking, either in terms of meeting the requirements of the relevant condition, being implementation appropriately and/or representing best practice. This is primarily due to a number of the plans and strategies being developed as consultancy reports, rather than as operational documents. In general, operational strategies, plans and programs should apply the following format:

- Document control – amendments and authorisation
- Introduction - background, purpose and objectives, relationship to other documents
- Environmental and legal requirements – CoA, legislation and standards
- Roles and responsibilities – induction and training
- Implementation – environmental aspects and impacts, controls, targets, actions
- Monitoring – inspection and surveillance, non-conformance and corrective action, review and improvement, record keeping
- Reporting – internal and external.

The overall structure of the environmental management documentation is not logical, and as a result the purpose of documentation is confusing and integration between plans is poor. For example, the relationship between the Vegetation Offset Strategy, Compensatory Habitat Management Plan and Remnant Vegetation Conservation Plan is unclear, and the objectives of each in relation to overall vegetation management objectives is not specified. To an extent this is due to the wording and/or structure of the consent conditions.

All strategies, plans and programs required under the consent should be identified in the Environmental Management Strategy, and the interactions between each specified.

7.3 ENVIRONMENTAL PERFORMANCE

Despite the deficiencies noted above, the overall environmental performance based on the observed condition of the site, the low number of incidences and exceedences, and limited number of community complaints, is considered to be **satisfactory**.

From interviews it is evident that staff commitment (particularly at a management level) to responsible environmental management is high, and a number of environmental initiatives, partnerships and actions have been implemented in recent years. However, many of these initiatives have not been strategically linked to management strategies/ plans, or included in reporting and communications. As a result Boral is missing a key opportunity to highlight and demonstrate its ongoing commitment to environmental management at the Dunmore Quarry to regulatory agencies and the broader community. The launch of the new Dunmore Quarry website presents the ideal forum to promote these efforts.

Although the level of environmental awareness among staff and contractors has increased through internal communications and the development of codes of practice, there needs to be further training of relevant employees to implement the commitments and procedures identified in environmental documentation. This will be particularly important once documents have been revised.

7.4 OPPORTUNITIES FOR IMPROVEMENT

The following table summarises the opportunities for improvement (recommendations), in terms of performance and compliance, arising from this audit.

Table 8: Summary of opportunities for improvement.

No.	Consent condition/ issue	Recommendation
DQ1/14	Sched 4, C 19 Public notice of blasting	Ensure that information regarding the blast hotline is advertised in a local newspaper annually. Alternately, blast information should be provided on the Dunmore Quarry website (discussions with Kate Jackson identified that the website is still being populated and would be functional by early October 2014). Notification that he site was functional was received on the 03/11/2014, however a section on blast information could not be identified at http://www.boral.com.au/Article/dunmore_quarry_mainpage.asp
DQ2/14	Sched 4, C 24 Fines Management Plan	It is suggested that Boral enter into discussions with DPE regarding revising the details of this condition. It may be more appropriate that implementation of the Fines management Plan is triggered once stockpiles of fines reach a certain value.

No.	Consent condition/ issue	Recommendation
DQ3/14	Sched 4, C 30 Site Water Balance	It is suggested that Boral enter into discussions with DPE regarding revising the details of this condition. The water balance was revised as part of the amended Water Management Plan (Evans and Peck, April 2008) in light of the new dam configuration and water transfer systems onsite. Therefore, the water balance presented in the EIS is no longer valid. It would be more appropriate to provide information regarding: ▪ Water demand for the previous year ▪ Rainfall and inflows for the previous year, as compared to the average presented in the water balance ▪ Dam storage levels and the possible implications on sourcing required demand from onsite dams and/or mains.
DQ4/14	Sched 4, C 37 Flocculant Management Plan	It is suggested that Boral enter into discussions with DPE regarding deleting this condition.
DQ5/14	Sched 4 C 38 Other Water Management Works	It is suggested that Boral enter into discussions with DPE regarding deleting this condition if the above actions are to the satisfaction of the Director-General.
DQ6/14	Sched 4, C 40 Monitoring (groundwater)	It is suggested that Boral initiate discussions with DPE regarding the purpose of regional groundwater monitoring. If this information is not being used for decision-making, then the cost associated with monitoring may not be justified.
DQ7/14	Sched 4, C 41 Site Water Management Plan	Currently the WMP and associated plans and strategies are not cohesive and are presented more as technical consultancy reports, rather than operational plans that define the issue, present the management objectives and actions and identify monitoring and review to promote ongoing improvement. It is recommended that all water management plans and strategies be reviewed, updated (based on the relevant guidelines) and integrated into a single operational document.
DQ8/14	Sched 4, C 42 Erosion & Sediment Control Plan	The ESCP should be prepared as a separate plan (within the WMP) that address the requirements of the Blue Book and this condition.
DQ9/14	Sched 4, C 43 Surface Water Monitoring Program	The detail provided for all environmental monitoring is limited, and in some instances does not fully cover the requirements of the Development Consent. It is suggested that Environmental Monitoring Program be reviewed to ensure the necessary detail is included.
DQ10/14	Sched 4, C44 Ground Water Monitoring Program	A groundwater monitoring program should be established to meet elements (a) and (b) of this condition, and as detailed in the EMP. The rationale for including regional groundwater monitoring in this condition, and how the subsequent information will be used, is not clear. It is suggested that Boral initiate discussions with DPE to clarify this condition, and delete if appropriate.

No.	Consent condition/ issue	Recommendation
DQ11/14	Sched 4, 47 Flora and Fauna Management Plan	Currently the FFMP and associated plans and protocols are not cohesive and it is difficult to identify the key issues to be managed, the management objectives and actions to be implemented, the proposed schedule for implementation or the monitoring and review commitments. It is recommended that all flora and fauna management plans and strategies be reviewed, updated (based on the relevant guidelines and best practice) and integrated into a single operational document.
DQ12/14	Sched 4, C 52 Independent Audit of the Flora & Fauna Management Plan	It is recommended that Boral initiates an independent audit of the Flora and Fauna Management Plan as soon as possible. A request to prepare a proposal for the audit was sighed on the 04/11/2014.
DQ13/14	Sched 4, C 54 Rehabilitation Management Plan	Undertake a complete review of the RMP to ensure it meets the requirements of this condition, represents BMP and integrates effectively with other elements of the FFMP.
DQ14/14	Sched 4, C 57 Rehabilitation and Conservation Bond	Ensure that the Rehabilitation and Conservation Bond is lodged as soon as possible. This requirements should be included on a regulatory compliance schedule and responsibility allocated.
DQ15/14	Sched 4, C 58 Reporting – Rehabilitation Management Plan	The actions reported in the AEMR should be linked to the actions identified in the RMP. As identified above, undertake a complete review of the RMP to ensure it meets the requirements of S4, C 54, represents BMP and integrates effectively with other elements of the FFMP.
DQ16/14	Sched 4, C 60 Transport Management Plan	Prepare the TMP as soon as possible, and integrate the components already developed to date.
DQ17/14	Sched 4, C 70 Waste Minimisation	Seek appropriate approval for tyre reuse on the site as soon as possible.
DQ18/14	Sched 4, C 72 Waste reporting	Waste reporting could include types and weights/ volumes of waste generated and recycled. This would allow for comparisons between years and to identify the effectiveness of waste reduction measures/ initiatives.
DQ19/14	Sched 5, C 2	Provide a copy of the Environmental Management Strategy to Council and maintain records of communication. Upload a copy of the strategy to the Boral Dunmore Quarry website.
DQ20/14	Sched 5, C 5	Review the format and content of the AEMR and ensure that current and accurate information is provided.
DQ21/14	Sched 5, C 11	Ensure the website is populated with the required information by the end of November 2014.

No.	Consent condition/ issue	Recommendation
DQ22/14	Sched 5 ,C 13 Revision of Strategies, Plans and Programs	Boral Dunmore Quarry should note that all strategies, plans, and programs required under this consent should be reviewed on an annual basis 3 months following the submission of the Annual Review. As identified previously, there have been a number of non-compliances regarding the meeting the timeframes for the preparation strategies, plans, and programs and document reviews have been sporadic. As such a review schedule should be established and maintained to ensure future compliance with this requirement.

APPENDIX A

DEVELOPMENT CONSENT (MODIFICATION 6)

Development Consent

Section 80 of the *Environmental Planning & Assessment Act 1979*

I, the Minister Assisting the Minister for Infrastructure and Planning (Planning Administration), approve the Development Application referred to in Schedule 1, subject to the conditions in Schedules 3 to 5.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the on-going environmental management of the development.

This instrument includes changes made by Modification 1 in December 2005 (marked in blue)
This instrument includes changes made by Modification 2 in June 2006 (marked in red)
This instrument includes changes made by Modification 3 in May 2008 (marked in green)
This instrument includes changes made by Modifications 4 and 5 in November 2008 (marked in pink)
Modification 6 (February 2014) marked in purple

Diane Beamer, MP
Minister Assisting the Minister for Infrastructure and Planning (Planning Administration)

Sydney 2004 File No. S03/01960

SCHEDULE 1

Development Application:	DA 470-11-2003.
Applicant:	Boral Resources (NSW) Pty Limited (ABN: 51 000 756 507).
Consent Authority:	Minister Assisting the Minister for Infrastructure and Planning (Planning Administration).
Land:	See Appendix 1.
Proposed Development:	Increase production at the Dunmore Quarry from 1.2 million tonnes per annum (Mtpa) to 2.5 Mtpa, by: • increasing operating hours; • making minor changes to equipment types and configuration, mainly within the crushing and conveying circuit; and • increasing rail and road transportation of product.
State Significant Development:	The proposal is classified as State significant development, under section 76A(7) of the *Environmental Planning and Assessment Act 1979*, because it is an extractive industry where the proposed rate of production exceeds the threshold limits specified in the Ministerial declaration, dated 3 August 1999.
Integrated Development:	The proposal is classified as integrated development, under section 91 of the *Environmental Planning and*

	Assessment Act 1979, because it requires additional approvals under the: • *Protection of the Environment Operations Act 1997;* • *National Parks & Wildlife Act 1974;* • *Rivers and Foreshores Improvement Act 1948.*
Designated Development:	The proposal is classified as designated development, under section 77A of the *Environmental Planning & Assessment Act 1979*, because it is for an extractive industry that would "obtain or process for sale, or reuse, more than 30,000 cubic metres of extractive material per year…". Consequently, it meets the criteria for designated development in schedule 3 of the *Environmental Planning & Assessment Regulation 2000*.

Note:

- *To find out when this development consent becomes effective, see Section 83 of the Environmental Planning and Assessment Act 1979* (EP&A Act);
- *To find out when this development consent is liable to lapse, see Section 95 of the EP&A Act; and*
- *To find out about appeal rights, see Section 97 of the EP&A Act.*

SCHEDULE 2
DEFINITIONS

Annual review	Annual Review, as required under condition 5 of schedule 5
Applicant	Boral Resources (NSW) Pty Limited
BCA	Building Code of Australia
CCC	Community Consultative Committee
Council	Shellharbour City Council
DA	Development Application
Day	Day is defined as the period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning and Infrastructure
Director-General	Director-General of the Department, or nominee
DRE	Division of Resources and Energy
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPA	Environment Protection Authority
EPL	An Environment Protection Licence applying to the development, issued by the EPA
Evening	Evening is defined as the period from 6pm to 10pm
Feasible	Feasible relates to engineering considerations and what is practical to build or carry out
GTA	General Term of Approval
Incident	A set of circumstances that: • causes or threatens to cause material harm to the environment; and/or • breaches or exceeds the limits or performance measures/criteria in this consent
Land	Land means the whole of a lot in a current plan registered at the Land Titles Office at the date of this development consent
Material harm to the environment	Actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Minister	Minister for Planning and Infrastructure, or delegate
Night	Night is defined as the period from 10pm to 6am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
NOW	NSW Office of Water
OEH	Office of Environment and Heritage
Privately-owned land	Land not owned by the Applicant or its related companies or where a private agreement does not exist between the Applicant and the land owner
Quarrying operations	Includes the removal of overburden and extraction, processing, handling, storage and transportation of extractive material on the site
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
RMS	Roads and Maritime Services
SEE	Statement of Environmental Effects
Shoulder	Time interval from 6am to 7am, Monday to Saturday
Site	Land to which the DA applies

TABLE OF CONTENTS

SCHEDULE 3
ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Applicant shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the development.

Terms of Approval

2. The Applicant shall carry out the development generally in accordance with the:
   (a) DA 470-11-2003;
   (b) EIS titled *Environmental Impact Statement for the proposed Dunmore Quarry Production Increase*, Volumes 1 & 2, dated November 2003, and prepared by R. W. Corkery & Company Pty Limited
   (c) The letter from Boral Quarries to the Department dated 20 October 2005 about the application to modify Dunmore Quarry development consent DA 470-11-2003, and accompanying plans 4034032_01 issue E, and 4034032_EL issue B;
   (d) modification application MOD 59-4-2006 and letter from Boral Quarries to the Department dated 13 April 2006;
   (e) Modification Application 470-11-2003 Mod 3, letter to the Department dated 28 March 2008, and accompanying plans GE-DU-2961-02 Rev D; GE-DU-2962-01 Rev B; GE-DU-2963-01 Rev 0; and GE-DU-2964-02 Rev 0; and
   (f) Modification Application 470-11-2003 Mod 4 and accompanying SEE titled *Statement of Environmental Effects for the proposed Dunmore Hard Rock Quarry Extension,* dated May 2008, and letter from Boral Quarries & Recycling to the Department dated 22 September 2008;
   (g) Modification Application 470-11-2003 Mod 5 and accompanying letter from Boral Quarries & Recycling to the Department dated 16 September 2008 (and accompanying plan GE-DU-2966-01 Rev E);
   (h) Modification Application 470-11-2003 Mod 6 and accompanying document titled *Environmental Assessment Dunmore Hard Rock Quarry– Modification 6,* prepared by EMGA Mitchell McLennan and dated 19 November 2012; and
   (i) conditions of this development consent.

3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.

4. The Applicant shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
   (a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with this consent; and
   (b) the implementation of any actions or measures contained in these documents.

Quarrying Operations

5. The Applicant may carry out quarrying operations on the site until 30 September 2034.

   Note: Under this consent, the Applicant is required to rehabilitate the site and carry out additional undertakings to the satisfaction of the Director-General. Consequently, this consent will continue to apply in all other respects other than the right to conduct quarrying operations until the rehabilitation of the site and those undertakings have been carried out to a satisfactory standard.

6. The Applicant shall not produce or transport more than 2.5 million tonnes of quarry products a calendar year from the development.

Transportation

7. The Applicant shall not transport, or permit to be transported, more than 1.5 million tonnes of quarry products from the site in a calendar year by road, except in an emergency with the written approval of the Director-General.

7a. The Applicant shall maximise transport of quarry products from the site by rail, so far as is reasonable and feasible, to the satisfaction of the Director-General.

Surrender of Consents

8. Within 6 months of the date of this consent, the Applicant shall surrender all existing development consents and existing use rights associated with the site, in accordance with clause 97 of EP&A Regulation.

Structural Adequacy

9. The Applicant shall ensure that any new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:

- *Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for any building works.*
- *Part 8 of the EP&A Regulation sets out the detailed requirements for the certification of development*

Demolition

10. The Applicant shall ensure that all demolition work is carried out in accordance with *AS 2601-2001: The Demolition of Structures,* or its latest version.

Protection of Public Infrastructure

11. The Applicant shall:
    (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and
    (b) relocate, or pay the full costs associated with relocating any public infrastructure that needs to be relocated as a result of the development.

Operation of Plant and Equipment

12. The Applicant shall ensure that all plant and equipment at the site, or used in connection with the development, are:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

SCHEDULE 4
SPECIFIC ENVIRONMENTAL CONDITIONS

IDENTIFICATION OF BOUNDARIES

1. Within 6 months of the date of this consent and any subsequent modification involving a change to the approved limits of extraction, the Applicant shall:
   (a) engage a registered surveyor to mark out the boundaries of the approved limits of extraction;
   (b) submit a survey plan of these boundaries to the Director-General; and
   (c) ensure that these boundaries are clearly marked at all times in a permanent manner that allows operating staff and inspecting officers to clearly identify those limits.

ACQUISITION UPON REQUEST

2. Upon receiving a written request for acquisition from the landowner of the land listed in Table 1, the Applicant shall acquire the land in accordance with conditions 3 and 4 below.

Land Owner(s)	Land Identification
Creagan	Lot 5 DP1001931
Stocker	Lot 1 DP745632
McParland/ Fogarty	Lot 10 DP977931
Fogarty/ McParland	Kimberly Property

Table 1: Land Subject to Acquisition on Request

3. Within 6 months of receiving a written request from the landowner, the Applicant shall pay the landowner:
   (a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the development the subject of this DA, having regard to the:
      - existing and permissible use of the land, in accordance with the applicable environmental planning instruments at the date of the written request; and
      - presence of improvements on the land 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; and
   (b) the reasonable costs associated with:
      - relocating within the Shellharbour or Kiama local government areas, or to any other local government area determined by the Director-General; and
      - obtaining legal and expert advice for determining the acquisition price of the land and the terms upon which it is to be acquired; and
   (c) reasonable compensation for any disturbance caused by the land acquisition process.

   However, if within 6 months of receiving this written request, 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 Director-General for resolution.

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

   If either party disputes the independent valuer's determination, the independent valuer must refer the matter back to the Director-General for resolution.

   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 cease, unless otherwise agreed by the Director-General.

4. The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer or the Director-General, and the costs of determination referred to in Condition 3 above.

5. If the Applicant and landowner agree that only part of the land should 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.

6. While the land listed in Table 1 is privately-owned land, the Applicant shall comply with the requirements applying to this land in these conditions of consent.

NOISE

Noise Limits

7. [1]The Applicant shall ensure that the noise generated by the development does not exceed the criteria specified in Table 2.

Receiver Locations	Noise Limits dB(A)					
	$L_{Aeq\ (15minute)}$				$L_{A1\ (1minute)}$	
	Day	Evening	Night	Shoulder	Night	Shoulder
Location A McParland Residence	35	35	35	35	45	45
Location K Stocker Residence	49	44	38	47	48	55
Location O Dunmore Lakes	49	44	38	47	48	55
Location J Creagan Residence	Negotiated Agreement in Place					

Table 2: Noise Impact Assessment Criteria for the Development

Notes:

1. *Receiver locations nominated in Appendix A Figure A2 of the report prepared by Richard Heggie Associates Report No.605/03 Titled Part 1: Noise Assessment – Dunmore Quarry Production Increase.*
2. *The above table may be varied if the Applicant enters into a negotiated agreement with any of the affected residents, or if existing agreements become void.*
3. *Noise from the development is to be measured at the most affected point on or within the residential boundary or at the most affected point within 30m of the dwelling (rural situations) where the dwelling is more than 30m from the boundary, to determine compliance with the $L_{Aeq(15\ minute)}$ noise limits in the above table. Where it can be demonstrated that direct measurement of noise from the development is impractical, the EPA may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors presented in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
4. *Noise from the development is to be measured at 1m from the dwelling façade to determine compliance with the $L_{A1(1minute)}$ noise limits in above table.*
5. *The noise emission limits identified in Table 1 apply under meteorological conditions of:*
   - *Wind speed up to 3m/s at 10 metres above ground level; or*
   - *Temperature inversion conditions of up to 3^{o}C/100m and wind speed up to 2m/s at 10 metres above the ground.*

Noise Investigations

8. [2]Within 6 months of the date of this consent, the Applicant shall undertake noise investigations, which may include sound power levels emitted from plant at the site, to determine near-field trigger levels that would assist in demonstrating compliance and verify the effectiveness of noise mitigation works to the satisfaction of the EPA.

Note: The purpose of this condition is to capture the proposed noise verification program where near field monitoring will be undertaken for groups of plant detailed in Richard Heggie and Associates letter dated 2 March 2004.

[1] Incorporates EPA GTA
[2] Incorporates EPA GTA

Operating Hours

9. The Applicant shall comply with the operating hours in Table 3:

Activity	Days of the Week	Time
Extraction and Processing	Monday – Saturday	6-00am to 10-00pm
Product Transfer to Stockpiles	Monday - Saturday	6-00am – Midnight
Distribution	Monday – Saturday	24 hrs
	Sunday	See Condition 10, Schedule 4
Maintenance	Monday – Sunday	24 hrs

Table 3: Operating Hours for the Development

10. [3]The Applicant may only distribute quarry products off-site by road on up to 15 Sundays a year, between 8am and 6pm, unless the EPA approves otherwise. This restriction does not apply to distribution by rail, which is allowed 24 hours a day, 7 days a week.

Oversized Material

11. [4]The Applicant shall not process any oversized raw feed material at the development during the shoulder period.

Note: For the purpose of this condition "oversized raw feed material" is defined as where more than 50% of the shot is over 900mm in diameter.

Noise Monitoring

12. [5]Within 3 months of the date of this consent, the Applicant shall:
(a) conduct continuous real-time monitoring of the noise generated by the development at the location K; and
(b) use this information in the day to day management of the development to ensure compliance with the noise impact assessment criteria.

13. [6]Within 3 months of the date of this consent, and annually thereafter, unless directed otherwise by the Director-General, the Applicant shall:
(a) commission a suitably qualified person to assess whether the development is complying with the noise impact assessment criteria in Table 2, in general accordance with the NSW Industrial Noise Policy and Australian Standard (AS) 1055-1997: "Description and Measurement of Environmental Noise"; and
(b) provide the results of this assessment to the EPA and Director-General within a month of commissioning the assessment.

14. Within 3 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Noise Monitoring Program for the development, in consultation with the EPA, and to the satisfaction of the Director-General.

Reporting

15. Deleted

BLASTING AND VIBRATION

Airblast Overpressure Criteria

16. The Applicant shall ensure that the airblast overpressure level from blasting at the development does not exceed the criteria in Table 4 at any residence or sensitive receiver on privately-owned land.

[3] Incorporates EPA GTA
[4] Incorporates EPA GTA
[5] Incorporates EPA GTA
[6] Incorporates EPA GTA

Airblast overpressure level [dB(Lin Peak)]	Allowable exceedance
115	5% of the total number of blasts over a period of 12 months
120	0%

Table 4: Airblast Overpressure Limits

Ground Vibration Criteria

17. The Applicant shall ensure that the peak particle velocity from blasting at the development does not exceed the criteria in Table 5 at any residence or sensitive receiver on privately - owned land.

Peak particle velocity (mm/s)	Allowable exceedance
5	5% of the total number of blasts over a period of 12 months
10	0%

Table 5: Ground Vibration Limits

Blasting Restrictions

18. [7]Blasting operations at the site may only take place:
    a) between 9am and 5pm Monday to Saturday inclusive;
    b) are limited to 2 blasts each day; and
    c) at such other times as may be approved by EPA.

Public Notice

19. During the life of the development, the Applicant shall:
    (a) operate a blasting hotline, or alternative system agreed to by the Director-General, to enable the public to get up-to-date information on blasting operations at the development; and
    (b) notify landowners and other interested persons about this hotline or system by placing annual notices in a local newspaper.

Blast Management Plan

20. Before carrying out any development within 250 metres of Lot 10 DP977931 (see Figure 4.4 of the EIS), the Applicant shall prepare, and subsequently implement, a Blast Management Plan for the development in consultation with the landowner(s), and to the satisfaction of the Director-General. This plan must describe the measures that would be implemented to:
    (a) avoid and/or minimize any blasting impacts of the development on either the property, or use of the property;
    (b) monitor the blasting impacts of the development on the property;
    (c) mitigate, remediate or compensate for any blasting impacts of the development on either the property, or the use of the property.

Blast Monitoring

21. [8]The Applicant shall monitor the airblast overpressure and peak particle velocity impacts of the development at the permanent monitoring station at Croome Farm, or any alternative location approved by the EPA, to the satisfaction of the EPA and Director-General, using the specified units of measure, frequency, sampling method, and location in Table 6.

[7] Incorporates EPA GTA
[8] Incorporates EPA GTA

Parameter	Units of Measure	Frequency	Sampling Method	Measurement Location
Airblast overpressure	dB(Lin Peak)	During every blast	AS2187.2-1993[1]	Not less than 3.5m from a building or structure *(or as otherwise agreed by EPA)*
Peak particle velocity	mm/s	During every blast	AS2187.2-1993	Not more than 30m from a building or structure *(or as otherwise agreed by EPA)*

Table 6: Airblast overpressure and peak particle velocity monitoring

[1] *Standards Australia, 1993, AS2187.2-1993: Explosives - Storage, Transport and Use of Explosives*

AIR QUALITY

Impact Assessment Criteria

22. The Applicant shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the development do not exceed the criteria in Tables 7, 8 and 9 at any residence on privately-owned land.

Pollutant	*Averaging period*	*[d] Criterion*
Total suspended particulates (TSP)	Annual	[a] 90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	[a] 30 µg/m^3

Table 7: Long-Term Impact Assessment Criteria for Particulate Matter

Pollutant	*Averaging period*	*[d] Criterion*
Particulate matter < 10 µm (PM_{10})	24 hour	[a] 50 µg/m^3

Table 8: Short Term Impact Assessment Criteria for Particulate Matter

Pollutant	*Averaging period*	*Maximum increase in deposited dust level*	*Maximum total deposited dust level*
[c] Deposited dust	Annual	[b] 2 g/m^2/month	[a] 4 g/m^2/month

Table 9: Long-Term Impact Assessment Criteria for Deposited Dust

Notes to Tables 7-9:

- [a] *Total impact (ie incremental increase in concentrations due to the project plus background concentrations due to all other sources);*
- [b] *Incremental impact (ie incremental increase in concentrations due to the project on its own);*
- [c] *Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003:Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.*
- [d] *Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Director-General in consultation with EPA.*

Management

23. [9]The Applicant shall minimise and/or prevent the emission of dust from the site.

24. Within 3 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Fines Management Plan to the satisfaction of the EPA. This plan must include the measures that would be implemented to stabilise the surface of stockpiles of fines to minimise wind-blown dust emissions and the erosion/product loss due to stormwater run-off.

Note: Fines are < 4mm in diameter.

[9] Incorporates EPA GTA

Monitoring

25. [10]The Applicant shall monitor (by sampling and obtaining results by analysis) the concentration of each pollutant in Table 10 to the satisfaction of the EPA and the Director-General, using the specified unit of measure, averaging period, frequency, sampling method and minimum number of locations.

Pollutant	Unit of Measure	Averaging Period	Frequency	Sampling Method	Locations
Dust deposition	g/m2/month	Month, annual	Continuous	AM-15	4
PM_{10}	$\mu g/m^3$	24 hour, annual	Continuous	AM-18 (or equivalent)[1]	1

Table 10: Sampling of Air Pollutants

[1] *The Applicant may use an equivalent sampling method to AM-18, with the approval of EPA.*

26. Within 3 months of the date of this consent, the Applicant shall prepare, and subsequently implement, an Air Quality Monitoring Program for the development, in consultation with the EPA, and to the satisfaction of the Director-General.

METEOROLOGICAL MONITORING

27. The Applicant shall establish a permanent meteorological station at a location approved by the EPA, and to the satisfaction of the Director-General, to monitor the parameters specified in Table 11, using the specified units of measure, averaging period, frequency and sampling method.

Parameter	Units of measure	Averaging period	Frequency	Sampling method[1]
Rainfall	*mm/hr*	*1 hr*	*Continuous*	*AM-4*
Temperature @ 2 m	*K*	*1 hr*	*Continuous*	*AM-4*
Temperature @ 10 m	*K*	*1 hr*	*Continuous*	*AM-4*
Wind direction @ 10 m	*Compass points*	*1 hr*	*Continuous*	*AM-2*
Wind speed @ 10 m	*m/s*	*1 hr*	*Continuous*	*AM-2*
Siting	-	-	-	*AM-1*

Table 11: Meteorological Monitoring

[1] *NSW EPA, 2001, Approved Methods for the Sampling and Analysis of Air Pollutants in NSW.*

SURFACE AND GROUND WATER

Pollution of Waters

28. Except as may be expressly provided by an Environment Protection Licence, the Applicant shall comply with section 120 of the *Protection of the Environment Operations Act 1997* during the carrying out of the development.

Water Discharge Limit

29. Except as may be expressly provided by an Environmental Protection Licence, the Applicant shall ensure that the discharges from any licenced discharge point/s comply with the limit in Table 12:

Pollutant	Units of Measure	100 Percentile Concentration Limit
TSS	mg/L	50
pH	pH	6.5 – 8.5

Table 12: Water Discharge Pollution Limits

[10] Incorporates EPA GTA

Site Water Balance

30. Each year, the Applicant shall:
    (a) review the site water balance for the development against the predictions in the EIS;
    (b) re-calculate the site water balance for the development; and
    (c) report the results of this review in the Annual Review.

Storm Water Management System

31. The Applicant shall ensure that the storm water management system for the development is designed, constructed and operated to capture and treat polluted waters from storm event(s) of up to and including the 5-day, 95th percentile rainfall event.

32. The Applicant shall ensure that the basins in the storm water management system are managed in accordance with the operating principles within the revised Water Management Plan prepared by Evans and Peck, dated April 2008, or any subsequent Water Management Plan approved by the Director-General, to maintain the required storm water storage volume.

Offline Dam

33. By 18 May 2008, or as otherwise agreed to by the Director-General, the Applicant shall:
    (a) modify the existing dam at the site to create a dam with a capacity of at least 61.4ML offline from Rocklow Creek;
    (b) ensure the discharge and overflow points of the dam do not cause erosion at the point of discharge/overflow;
    (c) rehabilitate and stabilize the banks of the dam;
    (d) construct a baffle and macrophyte zone downstream of the dam; and
    (e) ensure the integrity of the dam would not be compromised by any flooding in Rocklow Creek;

    to the satisfaction of the EPA and the Director-General.

34. Prior to carrying out any of these works, the Applicant shall prepare, and subsequently implement, a Dam Upgrade Plan in consultation with the EPA, and to the satisfaction of the Director-General. This plan must include:
    (a) the detailed design and specifications of the proposed works, which have been certified by a practicing registered engineer;
    (b) an erosion and sediment control plan for the proposed works, that is consistent with the requirements in the Department of Housing's *Managing Urban Stormwater: Soils and Construction* manual;
    (c) a vegetation and rehabilitation plan, setting out how the banks of the dam would be rehabilitated and stabilized, and the baffle and macrophyte zone would be constructed;
    (d) an acid sulfate soil management plan that is consistent with the *NSW Acid Sulfate Soil* manual;
    (e) a construction program for the proposed works; and
    (f) a program setting out how the modified dam and associated revegetation works would be maintained during the life of the development.

35. Within 1 month of completing the construction works in the Dam Upgrade Plan, the Applicant shall submit an as-executed report, certified by a practicing registered engineer, to the satisfaction of the EPA and Director-General.

Flocculant Management

36. [11]The Applicant shall not use a flocculant, other than alum or ferric chloride, without the written approval of the EPA.

37. [12]Prior to carrying out any of the construction works required in condition 33 above, the Applicant shall prepare, and subsequently implement, a Flocculant Management Plan for the development to the satisfaction of the EPA. This plan must:
    (a) describe the proposed dosing system, including procedures for dosing in different operating conditions procedures, and procedures to ensure excess flocculant dosing is prevented; and
    (b) describe how the performance of this system would be monitored over time.

[11] Incorporates EPA GTA
[12] Incorporates EPA GTA

Other Water Management Works

38. [13]Within 18 months of the date of this consent, the Applicant shall carry out the following works:
    (a) *Workshop and Fuel Storage Area*
    - desilt drains and culverts upstream of the workshop to limit flooding;
    - construct a first flush collection basin to capture and store the first 13mm of run-off from the external service bays before it is treated by the oil/water separator; and
    - bund and roof the drum storage area;

    (b) *Magazine Area*
    - reinstate drain through access road to magazines to direct stormwater flows to the main drain;

    (c) *deleted*

    to the satisfaction of EPA and the Director-General.

Bunding

39. [14]Impervious bunds must be constructed around all fuel, oil and chemical storage areas and the bund volume must be large enough to contain 110 per cent of the volume held in the largest container. The bund must be designed and installed in accordance with the requirements of the EPA Environment Protection Manual Technical Bulletin *Bunding and Spill Management*.

Monitoring

40. The Applicant shall:
    (a) measure:
    - the volume of water discharged from the site via licenced discharge points;
    - water use on the site;
    - water transfers across the site;
    - dam and water structure storage levels;

    (b) monitor the quality of the surface water:
    - discharged from the licence discharge point/s of the development;
    - upstream and downstream of the development;

    (c) monitor flows in Rocklow Creek; and
    (d) monitor regional groundwater levels and quality;
    to the satisfaction of the EPA and the Director-General.

Management

41. Within 12 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Site Water Management Plan for the development, in consultation with the NOW, and to the satisfaction of the Director-General. This plan must include:
    (a) the predicted site water balance;
    (b) an Erosion and Sediment Control Plan;
    (c) a Surface Water Monitoring Program
    (d) a Ground Water Monitoring Program; and
    (e) an Integrated Water Management Strategy.

42. The Erosion and Sediment Control Plan shall:
    (a) be consistent with the requirements of the Department of Housing's *Managing Urban Stormwater: Soils and Construction* manual;
    (b) identify activities that could cause soil erosion and generate sediment;
    (c) describe measures to minimize soil erosion and the potential for the transport of sediment to downstream waters;
    (d) describe the location, function, and capacity of erosion and sediment control structures; and
    (e) describe what measures would be implemented to maintain the structures over time.

43. The Surface Water Monitoring Program shall include:
    (a) detailed baseline data on surface water flows and quality in Rocklow Creek;
    (b) surface water impact assessment criteria;
    (c) a program to monitor surface water flows and quality in Rocklow Creek;
    (d) a program to monitor bank and bed stability in Rocklow Creek; and
    (e) a program to monitor the effectiveness of the Erosion and Sediment Control Plan.

[13] Incorporates EPA GTA
[14] Incorporates EPA GTA

44. The Ground Water Monitoring Program shall include:
    (a) detailed baseline data on ground water levels and quality, based on statistical analysis;
    (b) ground water impact assessment criteria; and
    (c) a program to monitor regional ground water levels and quality.

45. [15]The Integrated Water Management Strategy shall:
    (a) explore a range of options for a sustainable resource alternative for water supply to the site;
    (b) identification of all possible and available sources of water;
    (c) consistency with Government Water Reform initiatives and policies;
    (d) quality of water to meet usage requirements including any possible effects on product;
    (e) costs of supply;
    (f) health and environmental impacts;
    (g) legislative requirements;
    (h) assessment of the feasibility, benefits and costs of options;
    (i) a process to identify and evaluate preferred options for implementation; and
    (j) the identification of a timetable for implementation of the selected options.

FLORA AND FAUNA

Vegetation Offset Strategy

46. The Applicant shall:
    (c) establish, conserve, and maintain at least:
        - 4.6 hectares of *Melaleuca armillaris* Tall Shrubland; and
        - 8.2 hectares of Blue Gum-White Box Woodland/Forest,

        on Boral-owned land adjacent to the development; and
    (d) conserve, maintain, and enhance the vegetation in the area to the south of the development marked on the map in Appendix 2.
    (e) conserve, maintain, enhance and establish the vegetation in the area to the south of the development marked on the map in Appendix 3, in accordance with the letter from Boral to the Department dated 22 September 2008 titled *Dunmore Quarry – Revised Offset for Quarry Extension.*

46 A. Within 12 months of the date of Modification Application 470-11-2003 Mod 4, the Applicant shall make suitable arrangements in consultation with the OEH to provide appropriate long term security for the biodiversity offset referred to in condition 46 (c), to the satisfaction of the Director-General.

Flora and Fauna Management Plan

47. Within 12 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Flora and Fauna Management Plan for the development to the satisfaction of the Director-General. This plan must include:
    (f) a Vegetation Clearing Protocol;
    (g) a Compensatory Habitat Management Plan; and
    (h) a Remnant Vegetation Conservation Plan.

48. The Vegetation Clearing Protocol shall:
    (i) delineate the areas of remnant vegetation to be cleared; and
    (j) describe the procedures that would be implemented for:
        - pre-clearance surveys;
        - progressive clearing;
        - fauna management;
        - conserving and reusing topsoil;
        - collecting seed from the site;
        - salvaging and reusing material from the site; and
        - controlling weeds.

49. The Compensatory Habit Management Plan shall:
    (k) describe the compensatory habitat proposal for the:
        - *Melaleuca armillaris* Tall Shrubland; and
        - Blue Gum-White Box Woodland/Forest;
    (l) justify why this area(s) is suitable for the compensatory habitat proposal;
    (m) establish baseline data for the existing habitat in the proposed compensatory habitat area(s);
    (n) describe how the compensatory habitat proposal would be implemented;

[15] Incorporates EPA GTA

(o) set completion criteria for the compensatory habitat proposal; and
(p) describe how the performance of the compensatory habitat management proposal would be monitored over time.

50. The Remnant Vegetation Conservation Plan shall:
(q) describe what measures would be implemented to conserve, maintain and enhance the vegetation in the area to the south of the development marked in the map in Appendix 2;
(r) establish baseline data for the existing vegetation in the area; and
(s) describe how the performance of the measures described in (a) above would be monitored over time.

Reporting

51. The Applicant shall include a progress report on the implementation of the Flora and Fauna Management Plan in the Annual Review.

Independent Audit

52. Within 3 years of the date of this consent, and every 5 years thereafter unless the Director-General directs otherwise, the Applicant shall commission, and pay the full cost of an Independent Audit of the Flora and Fauna Management Plan. This audit must:
(t) be conducted by a suitably qualified, experienced, and independent person whose appointment has been endorsed by the Director-General;
(u) assess the performance of the Flora and Fauna Management Plan;
(v) review the adequacy of the Flora and Fauna Management Plan; and, if necessary,
(w) recommend actions or measures to improve the performance and/ or adequacy of the Flora and Fauna Management Plan.

REHABILITATION

Rehabilitation

53. The Applicant shall progressively rehabilitate the site to the satisfaction of the Director-General.

Rehabilitation Management Plan

54. Within 6 months of the date of this consent, the Applicant shall prepare, and subsequently implement, a Rehabilitation Management Plan for the site to the satisfaction of the Director-General. This plan must:
(x) identify the disturbed area at the site;
(y) describe in general the short, medium, and long-term measures that would be implemented to rehabilitate the site;
(z) describe in detail the measures that would be implemented over the next 5 years to rehabilitate the site; and
(aa) describe how the performance of these measures would be monitored over time.

55. Within 5 years of providing the Rehabilitation Management Plan to the Director-General, and every 5 years thereafter, the Applicant shall review and update the plan to the satisfaction of the Director-General.

Rehabilitation and Conservation Bond

56. Within 6 months of the date of this consent, the Applicant shall lodge a suitable rehabilitation and conservation bond for the development with the Director-General. The sum of the bond shall be calculated at:
(bb) \$2.50/ m^2 for the area of disturbance at the development; and
(cc) \$3.00 /m^2 of the area of the compensatory habitat proposal (see Condition 49 above)
to the satisfaction of the Director-General.

Notes:
- *If the rehabilitation and compensatory habitat proposal is completed to the satisfaction of the Director-General, the Director-General will release the rehabilitation and conservation bond.*
- *If the rehabilitation and compensatory habitat proposal is not completed to the satisfaction of the Director-General, the Director-General will call in all or part of the rehabilitation and compensation bond, and arrange for the satisfactory completion of these works.*

57. Within 3 years of lodging the rehabilitation and conservation bond with the Director-General, and every 5 years thereafter, unless the Director-General directs otherwise, the Applicant shall review,

and if necessary revise, the sum of the rehabilitation bond to the satisfaction of the Director-General. This review must consider:

(a) the effects of inflation;
(b) any changes to the area of disturbance; and
(c) the performance of the compensatory habitat proposal.

Reporting

58. The Applicant shall include a progress report on the Rehabilitation Management Plan in the Annual Review.

TRAFFIC AND TRANSPORT

North Kiama Bypass

59. The Applicant shall facilitate access to the North Kiama Bypass along Tabbita Road in accordance with the terms set out in the Deed of Agreement between the Applicant and Dunmore Sand and Soil Pty Ltd, dated 29 July 2004.

Transport Management Plan

60. The Applicant shall prepare and implement a Transport Management Plan for the development to the satisfaction of the Director-General. This plan must:

(a) be prepared by a suitably qualified traffic consultant, in consultation with RMS and Council, and submitted to the Director-General for approval by 31 May 2014;
(b) include a drivers' code of conduct for the development;
(c) describe the measures that would be implemented to ensure:
- all drivers of development-related vehicles comply with the drivers' code of conduct; and
- compliance with the relevant conditions of this consent; and

(d) include a program to monitor the effectiveness of the implementation of these measures.

Cumulative Traffic Impact Study

60A. The Applicant shall, in conjunction with the operators of the Bass Point Quarry and the Albion Park Quarry, cause to be prepared an independent Cumulative Traffic Impact Study. The study must:

(a) be undertaken by a suitably qualified traffic consultant, whose appointment has been approved by the Director-General;
(b) be commissioned by 30 June 2014, and completed by 31 October 2014, or as otherwise agreed in writing by the Director-General;
(c) be co-funded by the operators of the Dunmore, Bass Point and Albion Park quarries, proportionate to the quarries' respective quarry product road transport limits, as approved at 30 June 2014;
(d) include a comprehensive assessment of current and future projected cumulative traffic impacts of the three quarries on the classified road network, undertaken in consultation with the RMS; and
(e) identify any reasonable and feasible measures that can be implemented to minimise the traffic and road safety impacts of quarry trucks on Mount Ousley Road, and the likely cost of implementing these measures.

60B. The Applicant shall, in conjunction with the operators of the Bass Point Quarry and the Albion Park Quarry, prepare and implement a program to implement any reasonable and feasible measures identified in the Cumulative Traffic Impact Study not already undertaken by the Applicant, in an equitable manner with the two other quarry operators, to the satisfaction of the Director-General. The program must be submitted to the Director-General for approval by 28 February 2015, or as otherwise agreed in writing by the Director-General.

Parking

61. The Applicant shall provide sufficient parking on-site for all quarry-related traffic to the satisfaction of the Director-General.

Road Haulage

62. The Applicant shall ensure that all loaded vehicles entering or leaving the site are covered.

63. The Applicant shall ensure all loaded vehicles leaving the site are cleaned of materials that may fall on the road before they are allowed to leave the site.

ABORIGINAL HERITAGE

64. The Applicant shall not destroy Aboriginal site DQ2 before it has obtained approval from the OEH under section 90 of the *National Parks & Wildlife Act 1974*.

Notes:

- *The OEH has indicated that it will issue this approval subject to conditions.*
- *If a salvage component (including "community collection") is to accompany the application under section 90, the application should include a methodology/research design for the salvage activity, and an application for care and control of any recovered and collected Aboriginal objects by the Aboriginal community involved.*

65. Within 6 months of the date of this consent, the Applicant shall conserve Aboriginal site DQ2004/1 in consultation with the Aboriginal community, and to the satisfaction of the OEH.

VISUAL IMPACT

Visual Amenity

66. The Applicant shall minimise the visual impacts of the development to the satisfaction of the Director-General.

67. Prior to carrying out any development that would be visible from the areas to the south west of the quarry, the Applicant shall construct, and subsequently maintain, the proposed visual/ noise bund between the Croome Farm extraction area and the Jamberoo Valley to the satisfaction of the Director-General.

Lighting Emissions

68. The Applicant shall take all practicable measures to prevent and/or minimise any off-site lighting impacts from the development.

69. All external lighting associated with the development shall comply with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*.

WASTE MANAGEMENT

Waste Minimisation

70. The Applicant shall minimise the amount of waste generated by the development to the satisfaction of the Director-General.

Waste Classification

71. [16]All liquid and non liquid wastes resulting from activities and processes at the site must be assessed, classified and managed in accordance with the EPA's Environmental Guidelines*: Assessment, Classification and Management of Liquid and Non-liquid Wastes (1999),* or any other EPA document superceding this guideline.

Reporting

72. The Applicant shall describe what measures have been implemented to minimise the amount of waste generated by the development in the Annual Review.

EMERGENCY AND HAZARDS MANAGEMENT

Dangerous Goods

73. The Applicant shall ensure that the storage, handling, and transport of dangerous goods is done in accordance with the relevant Australian Standards, particularly AS1940 and AS1596, and the Dangerous Goods Code.

[16] Incorporates EPA GTA

Safety

74. The Applicant shall secure the development to ensure public safety to the satisfaction of the Director-General.

Emergency Management

75. [17]Within 6 months of the date of this consent, the Applicant shall document, and subsequently implement measures to minimise the environmental impacts of any emergency situations that could arise as a result of the operation of the Dunmore Quarry to the satisfaction of the EPA. This documentation must:
    (a) identify any significant threats to the environment and/ or public health that could arise from activities associated with the operation of the quarry or construction works associated with the production increase. These threats may include excessive rainfall, problems during construction and operation, pump failures, excess flocculation, power or other utility failure, natural disaster, landslip, accidental spills and discharges, train derailment, spillage from trucks, fire etc;
    (b) identify any subsequent direct or indirect environmental effects as a result of the threats;
    (c) identify the pollution that would result due to these threats and impacts on operations and what impact the pollution would have on the health of the community and the environment;
    (d) develop actions to effectively respond to the disruption of operations so the risk of pollution is minimised;
    (e) develop a communications strategy for alerting relevant agencies and the potentially affected community in the event of the disruption to operations leading to significant pollution;
    (f) ensure that all relevant employees are familiar with the documentation; and
    (g) when developing this documentation identify any opportunities to integrate with Boral Emergency plans.

BUSHFIRE MANAGEMENT

76. The Applicant shall:
    (a) ensure that the development is suitably equipped to respond to any fires on-site; and
    (b) assist the Rural Fire Service and Emergency Services as much as possible if there is a fire on-site.

77. Within 6 months of the date of this consent, the Applicant shall prepare a Bushfire Management Plan for the development, to the satisfaction of Council and the Rural Fire Service.

PRODUCTION DATA

78. The Applicant shall:
    (dd) provide annual production data to the DRE using the standard form for that purpose; and
    (ee) include a copy of this data in the Annual Review.

[17] Incorporates DECC GTA

SCHEDULE 5
ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING

ENVIRONMENTAL MANAGEMENT STRATEGY

1. Within 6 months of the date of this consent, the Applicant shall prepare, and subsequently implement, an Environmental Management Strategy for the development to the satisfaction of the Director-General. This strategy must:
   a) provide the strategic context for environmental management of the development;
   b) identify the statutory requirements that apply to the development;
   c) describe in general how the environmental performance of the development would be monitored and managed during the development;
   d) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the development;
      - respond to any non-compliance;
      - manage cumulative impacts; and
      - respond to emergencies; and
   e) describe the role, responsibility, authority, and accountability of all the key personnel involved in environmental management of the development.

1 A. Within 6 months of the date of Modification Application 470-11-2003 Mod 4, the Applicant shall review and update as necessary the environmental management strategies and plans in consultation with the relevant government agencies and to the satisfaction of the Director-General.

2. Within 14 days of receiving the Director-General's approval for the strategy, the Applicant shall:
   a) send copies of the approved strategy to the relevant agencies and Council; and
   b) ensure the approved strategy is made publicly available during the development.

ENVIRONMENTAL MONITORING PROGRAM

3. Within 6 months of the date of this consent, the Applicant shall prepare an Environmental Monitoring Program for the development, in consultation with the relevant agencies, and to the satisfaction of the Director-General. This program must consolidate the various monitoring requirements in Schedule 4 of this consent into a single document.

4. The Applicant shall regularly review, and if necessary update, this program in consultation with the Director-General.

ANNUAL REVIEW

5. The Applicant shall prepare and submit an Annual Review to the Director-General and the relevant agencies. This report must:
   a) identify the standards and performance measures that apply to the development;
   b) describe the works carried out in the last 12 months;
   c) describe the works that will be carried out in the next 12 months;
   d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
   e) include a summary of the monitoring results for the development during the past year;
   f) include an analysis of these monitoring results against the relevant:
      - impact assessment criteria;
      - monitoring results from previous years; and
      - predictions in the EIS;
   g) identify any trends in the monitoring results over the life of the development;
   h) identify any non-compliance during the previous year; and
   i) describe what actions were, or are being taken to ensure compliance.

INDEPENDENT ENVIRONMENTAL AUDIT

6. Prior to 1 April 2014, and every 3 years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:
   (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
   (b) include consultation with the relevant agencies;

(c) assess the environmental performance of the development and whether it is complying with the relevant requirements in this consent and any relevant EPL (including any assessment, plan or program required under these approvals);
(d) review the adequacy of any approved strategy, plan or program required under these approvals; and
(e) recommend measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under these approvals.

Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Director-General.

7. Within 3 months of commissioning this audit, or as otherwise agreed by the Director-General, the Applicant shall submit a copy of the audit report to the Director-General, with a response to the recommendations contained in the audit report.

COMMUNITY CONSULTATIVE COMMITTEE

8. The Applicant shall maintain the Community Consultative Committee (CCC) for the development to the satisfaction of the Director-General. This CCC must be operated in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version).

Notes:
- *The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.*
- *In accordance with the guideline, the Committee should comprise an independent chair and appropriate representation from the Applicant, Council, recognised environmental groups and the local community.*

REPORTING

Incident Reporting

10. The Applicant shall immediately notify the Director-General and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the development, the Applicant shall notify the Director-General and any other relevant agencies as soon as practicable after the Applicant becomes aware of the incident. Within 7 days of the date of the incident, the Applicant shall provide the Director-General any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

Regular Reporting

11. The Applicant shall provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.

ACCESS TO INFORMATION

12. By 1 May 2014, the Applicant shall:
(a) make the following information publicly available on its website:
- current statutory approvals for the development;
- approved strategies, plans or programs;
- a summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent;
- a complaints register, updated on a quarterly basis;
- minutes of CCC meetings;
- copies of any Annual Reviews or Annual Environmental Management Reports (over the last 5 years);
- any independent environmental audit, and the Applicant's response to the recommendations in any audit; and
- any other matter required by the Director-General; and

(b) keep this information up to date,
to the satisfaction of the Director-General.

REVISION OF STRATEGIES, PLANS AND PROGRAMS

13. Within 3 months of:
(a) the submission of an Annual Review under condition 5 of Schedule 5;

(b) the submission of an incident report under condition 10 of Schedule 5; or
(c) a modification to the conditions of this consent (unless the conditions require otherwise),

the Applicant shall review the strategies, plans, and programs required under this consent, to the satisfaction of the Director-General. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted for the approval of the Director-General.

Note: The purpose of this condition is to ensure that strategies, plans and programs are regularly updated to incorporate any measures recommended to improve environmental performance of the development.

APPENDIX 1
SCHEDULE OF LAND

Land to which the Development Application refers:

Local Government Area:

Shellharbour

Suburb, town or locality:

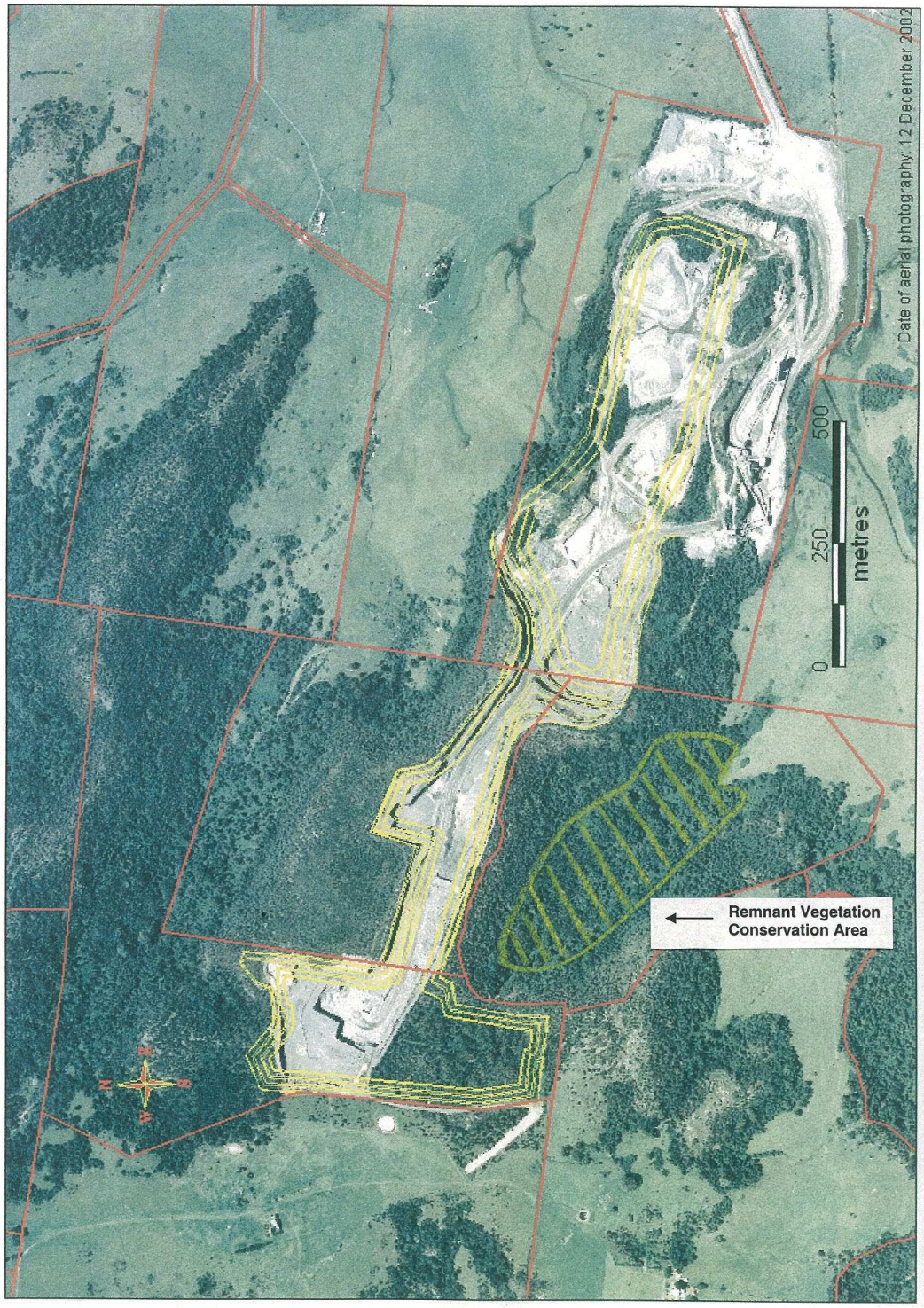
Dunmore

Land:

Lot No.	DP No.
Lot 1	DP 213575
Lot 3	DP 1030504
Lot 4	DP 1030504
Lot 4	DP 227046
Lot 1	DP 1002951
Lot 1	DP 224597
Lot 2	DP 224597
Lot 4	DP 571406
Lot 6	DP 1001931

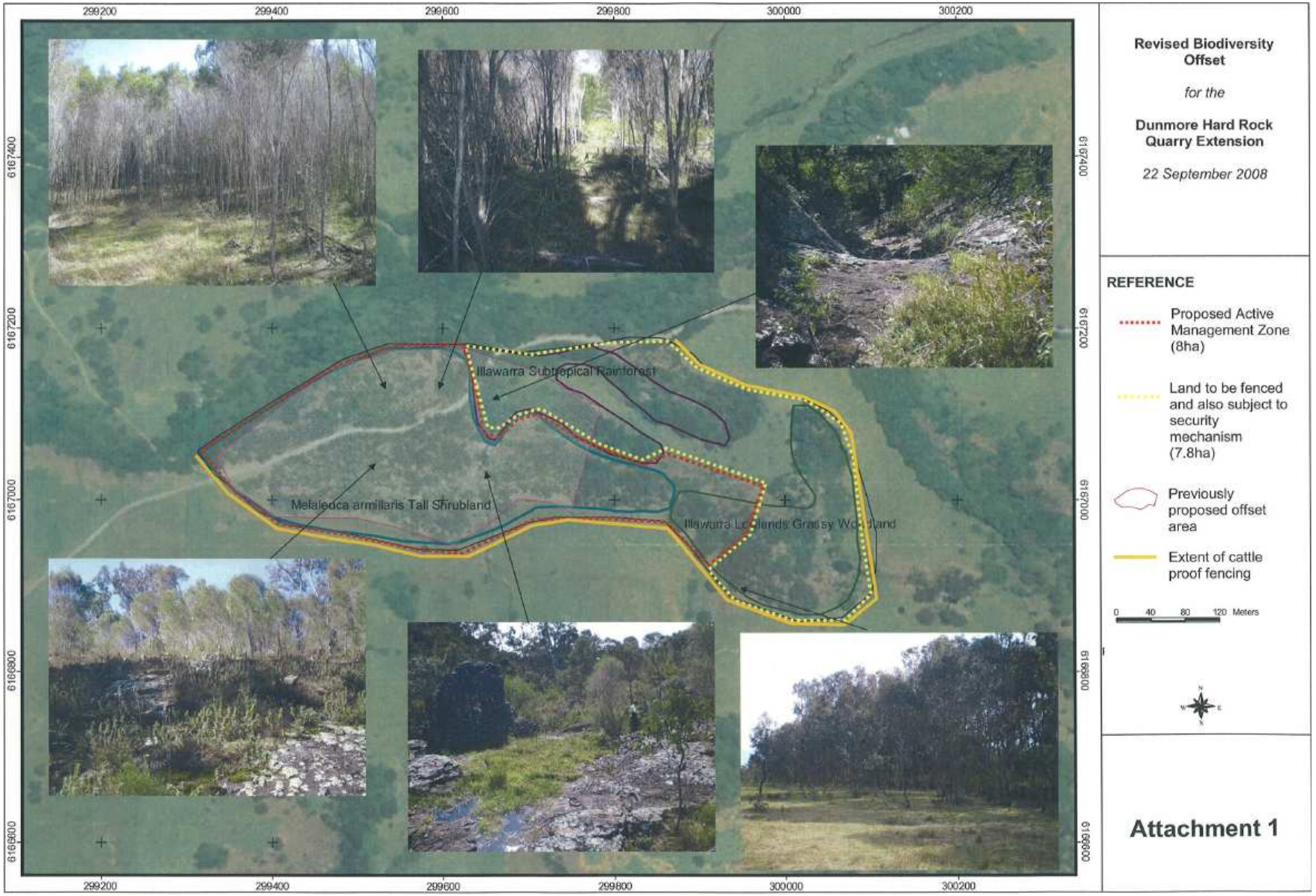
APPENDIX 2

REMNANT VEGETATION CONSERVATION AREA



APPENDIX 3

BIODIVERSITY OFFSET



APPENDIX B

2006 AUDIT CLOSE-OUT EVIDENCE

(i) Safe Work Method Statement

Build something great™

Safe Work Method Statement (SWMS) 012-F01

A SWMS shall be developed for a task where the risk has been assessed as Medium or higher

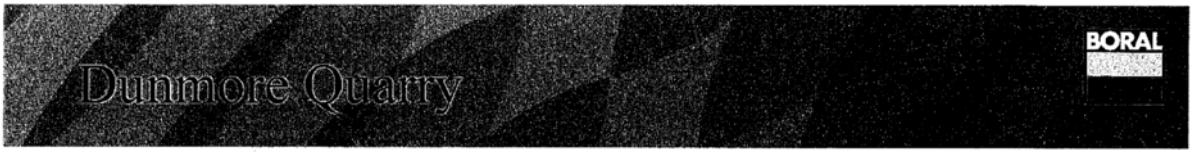
BORAL®

Division: (e.g. BCM, BBP, Cement)	Business Unit: (e.g. Quarries, Plasterboard, Waurn Ponds)	Date:	SWMS No:
Site Address: (e.g. Deer Park, Camellia)			
Work Activity:			
Plant and Equipment to be used:		Competencies and Qualifications:	
Emergency planning required? Yes: ☐ No: ☐		Relevant legislation and/or guidance material:	

Step No.	What are the tasks involved?	What are the Hazards?	Initial Risk			What controls must be used?	Final Risk			Who is responsible ?
			C	L	R		C	L	R	

Safe-Work-Method-Statement-SWMS-012-f01 Printed copies are uncontrolled Page 1 of 8 Version 1.4

(ii) 3M-PO-Inspect-Sediment-Ponds-Drains-Checklist



STORMWATER MANAGEMENT
SEDIMENT CONTROL INSPECTION CHECKLIST

3M – PO – INSPECT – SEDIMENT – PONDS – DRAINS – CHECKLIST

INSPECTION DETAILS

Date:	
Inspections type:	☐ **Quarterly** ☐ **Within 5 days of rain** Approx rainfall (mm):
Inspected by:	

CHECKLIST

Location	Inspect	Action Required including specific location	Date Completed
Croome Farm Catchment	▪ Table drains	▪	
RIC Catchment	▪ Table drains	▪	
Magazine area	▪ Integrity of diversion drains ▪ Table drains	▪	
Stockpile area – central catchment	▪ Table drains functional	▪	
Workshop & fuelling area	▪ Camber of the road slopes to drain opposite workshop ▪ Bund sumps ▪ Drains clean, functional and free of waste	▪	
Processing plant & lower stockpile area	▪ Table drains functional ▪ Check stations functional	▪	

Once completed, this form should be given to the Environment & Community Advisor for filing.

SEDIMENT CONTROLS INSPECTION CHECKLIST	Last update: August 2007	Page 1 of 1

(iii) Bunded hydrocarbon storage area

(iv) Spill kits located in the workshop

(v) Contaminated materials treatment bay

(vi) Weed control invoices

Building something great™

Logout

Site Dashboard | Purchasing History | Invoice On Holds | Hub Operations | Reports

Filters - Purchase Order History

Site Requester: ZAREBSKI, TAMMY-LEE | Oracle PO Buyer | Region | Ledger: 270 - Quarries Metro NSW | Location: 5395 - DUNMORE | On Hold

Process Status | Open/Closed | PO/EAM No. | Preferred Supplier: 215479 - LAMOND CONTRACTING PTY LTD (Active:Y Preferred:N)

Note: Spend with BCM Preferred vendors is highlighted with a green background. A red background represents invoices On Hold for urgent attention.

More Filters

Filters: Site Requester>60299 Oracle PO buyer>All Region>All Ledger>270 Location>5395 OnHold>All Process Status>All PO No>All Supplier>215479 - LAMOND CONTRACTING PTY LTD (Active:Y Preferred:N) Global Search>All Preferred Supplier>All Supplier Active>All Area>All Department>All Account>All Creation From>AllCreation To>All Open/Closed>All Age> All

Request Types: Raise Order | Select PO: | Copy WO #: | Raise Request | Receipt in Oracle

Export Transactions

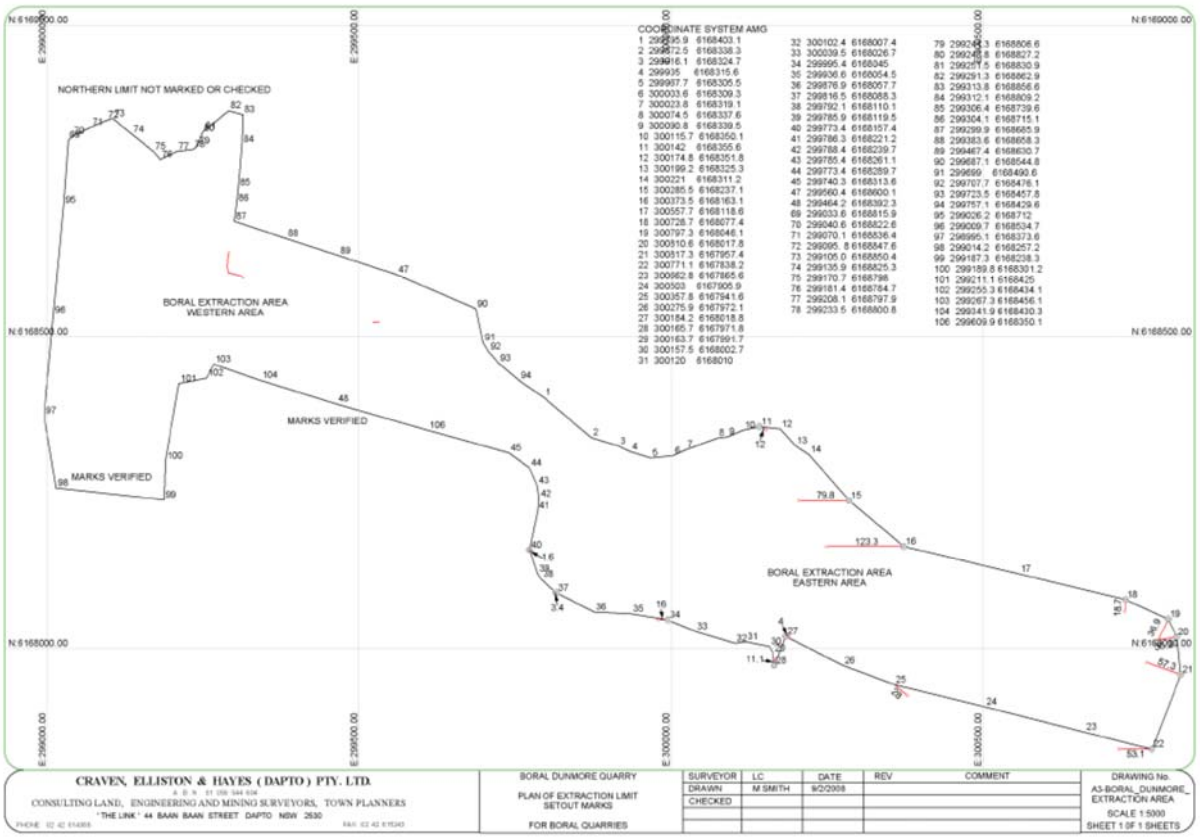
1 - 2

More	Creation	PO Line - #	EAM Ref.	Line Status	Hold	*	Purchase Description	Item Code	Supplier Name	Unit Price$	Order$	Expected$	Receipted$
	26/03/2014	5241567-1	-	EXPECTED RECEIPT	N		SUPPLY; TREATMENT FOR AFRICAN OLIVE - DUNMORE QRY	-	LAMOND CONTRACTING PTY LTD	$1.00	$200.00	$200.00	$0.00
	26/03/2014	5241573-1	-	EXPECTED RECEIPT	N		SUPPLY; WEED MANAGEMENT IN OFFSET AREA - DUNMORE QRY	-	LAMOND CONTRACTING PTY LTD	$1.00	$2,000.00	$2,000.00	$0.00
											$2,200.00	$2,200.00	$0.00

APPENDIX C

2014 AUDIT EVIDENCE

(i) Extraction area survey plan



(ii) Extraction area boundary marker

(iii) Quarry Operating System Daily Operating report

BORAL

Quarry Reporting System

Daily Operating

NSW METRO QUARRIES - Metro - Dunmore - Tertiary - Fixed

Period Thursday 1 May 2014 - Saturday 31 May 2014

	Consented	Operating Hours			Downtime Hours			Production Tonnes			
Date	Crushing Hours	Planned Operating	Actual Operating	Percent Operating	Total Downtime	Planned Downtime	Unplanned Downtime	Planned Tonnes	Production Tonnes	Avg Hourly Rate	
Thu 1 May 2014	16:00:00	06:35:24	07:40:00	47.9%	00:50:00		00:50:00	3,130.3	4,889.0	637.7	✓
Fri 2 May 2014	16:00:00	06:35:24	07:08:00	44.6%	00:52:00	00:43:00	00:09:00	3,130.3	3,527.0	494.4	✓
Sat 3 May 2014	16:00:00										✓
Sun 4 May 2014	16:00:00										✓
Mon 5 May 2014	16:00:00	06:35:24	07:24:30	46.3%	01:05:30	00:39:30	00:26:00	3,130.3	3,951.0	533.3	✓
Tue 6 May 2014	16:00:00	06:35:24	07:27:18	46.6%	00:22:42	00:22:42		3,130.3	4,120.0	552.6	✓
Wed 7 May 2014	16:00:00	06:35:24	08:05:18	50.6%	00:39:42	00:24:32	00:15:10	3,130.3	3,993.0	493.7	✓
Thu 8 May 2014	16:00:00	06:35:24	07:21:10	46.0%	08:53:52	08:29:12	00:24:40	3,130.3	4,161.0	565.9	✓
Fri 9 May 2014	16:00:00		05:34:00	34.8%	10:41:02	10:11:12	00:29:50		2,689.0	483.1	✓
Sat 10 May 2014	16:00:00										✓
Sun 11 May 2014	16:00:00										✓
Mon 12 May 2014	16:00:00		08:19:10	52.0%	07:49:10	07:49:10			4,144.0	498.1	✓
Tue 13 May 2014	16:00:00	06:35:24			16:15:02	16:15:02		3,130.3			✓
Wed 14 May 2014	16:00:00	06:35:24			16:15:02	16:15:02		3,130.3			✓
Thu 15 May 2014	16:00:00	06:35:24			16:15:00	16:15:00		3,130.3			✓
Fri 16 May 2014	16:00:00	06:35:24			16:14:58	16:14:58		3,130.3			✓
Sat 17 May 2014	16:00:00				06:17:10	06:17:10					✓
Sun 18 May 2014	16:00:00										✓
Mon 19 May 2014	16:00:00	06:35:24	06:33:40	41.0%	09:41:20	09:09:50	00:31:30	3,130.3	2,874.0	438.0	✓
Tue 20 May 2014	16:00:00	06:35:24	07:26:32	46.5%	08:33:31	07:56:31	00:37:00	3,130.3	3,607.0	484.7	✓
Wed 21 May 2014	16:00:00	06:35:24	07:15:20	45.3%	08:59:42	08:29:42	00:30:00	3,130.3	3,610.0	497.5	✓
Thu 22 May 2014	16:00:00	06:35:24	06:42:50	42.0%	09:32:12	09:09:22	00:22:50	3,130.3	2,934.0	437.0	✓
Fri 23 May 2014	16:00:00	06:35:24	04:46:18	29.8%	03:58:42	01:17:32	02:41:10	3,130.3	2,112.0	442.6	✓
Sat 24 May 2014	16:00:00										✓
Sun 25 May 2014	16:00:00										✓
Mon 26 May 2014	16:00:00	06:35:24	05:58:29	37.3%	10:12:51	09:45:11	00:27:40	3,130.3	2,760.0	461.9	✓
Tue 27 May 2014	16:00:00	06:35:24	08:09:40	51.0%	08:05:22	08:05:22		3,130.3	3,934.0	482.0	✓
Wed 28 May 2014	16:00:00	06:35:24	07:50:32	49.0%	08:09:30	07:56:30	00:13:00	3,130.3	3,756.0	478.9	✓
Thu 29 May 2014	16:00:00	06:35:24	08:25:58	52.7%	00:19:02	00:19:02		3,130.3	3,925.0	465.4	✓
Fri 30 May 2014	16:00:00	06:35:24	06:51:00	42.8%	00:09:00		00:09:00	2,750.3	3,087.0	450.7	✓
Sat 31 May 2014	16:00:00										✓
Total hh:mm:ss	**496:00:00**	**131:48:00**	**128:59:45**	**26.0%**	**170:12:22**	**162:05:32**	**08:06:50**	**62,226.0**	**64,073.0**	**496.7**	
Total hours	**496.0**	**131.8**	**129.0**	**26.0%**	**170.2**	**162.1**	**8.1**	**62,226.0**	**64,073.0**	**496.7**	

(iv) Dust minimisation measures

(v) Metrological data sample for the 01/05/2014

TOA5	Dunmore	CR1000	4410	CR1000.Std.21	CPU:8165_ET_PS_fn_SMS_v3_3.CR1	29762	Hourly					
TIMESTAMP	RECORD	AirTempC_2m_Avg	AirTempC_10m_Avg	RHpercent	Av_WindSpeed	Av_WindDirect	Stdv_WindDirect	WSpeedmps_Max	Rainfall_Tot	SolarkWm2_Avg	ET_mm_Hr	cur_pas_stab
TS	RN					Deg	Deg					
		Avg	Avg	Smp	WVc	WVc	WVc	Max	Tot	Avg	Smp	Smp
1/05/2014 0:00	6227	14.23	15.02	65.53	2.436	229	14.41	5.15	0	0	0.016	C Day
1/05/2014 1:00	6228	13.77	14.6	62.75	3.014	223.2	14.02	5.9	0	0	0.017	D Night
1/05/2014 2:00	6229	13.88	14.54	62.68	2.893	207	17.93	6.2	0	0	0.018	E Night
1/05/2014 3:00	6230	13.3	14.03	60.83	2.408	208.9	21.11	4.7	0	0	0.017	B Day
1/05/2014 4:00	6231	13.2	13.9	58.75	3.005	200.2	20.51	7.175	0	0	0.018	E Night
1/05/2014 5:00	6232	13.1	13.82	54.41	2.798	210	28.53	7.925	0	0	0.02	A Day
1/05/2014 6:00	6233	11.15	11.95	66.09	1.654	260.8	24.75	3.5	0	0	0.013	F Night
1/05/2014 7:00	6234	10.03	11.38	63.07	1.634	263.8	12.95	3.05	0	0.011	0.036	E Night

TOA5	Dunmore	CR1000	4410	CR1000.Std.21	CPU:8165_ET_PS_fn_SMS_v3_3.CR1	29762	Hourly					
1/05/2014 8:00	6235	12.33	13.04	56.06	1.992	245.9	11.58	3.2	0	0.141	0.116	D Day
1/05/2014 9:00	6236	15.16	14.91	45.2	1.588	241.3	19.93	3.05	0	0.305	0.215	B Day
1/05/2014 10:00	6237	16.84	16.1	44.41	1.376	183.5	35.64	3.2	0	0.451	0.31	A Day
1/05/2014 11:00	6238	17.83	17.04	41.15	1.214	280.3	89.5	2.9	0	0.556	0.38	A Day
1/05/2014 12:00	6239	18.24	17.64	44.03	1.289	83.8	69.57	3.575	0	0.61	0.417	A Day
1/05/2014 13:00	6240	17.96	17.48	43.3	3.135	95.4	24.74	5.975	0	0.605	0.415	A Day
1/05/2014 14:00	6241	17.81	17.43	45.92	3.508	107.1	24.5	5.525	0	0.542	0.38	A Day
1/05/2014 15:00	6242	17.69	17.4	45.18	2.866	81.8	16.49	4.55	0	0.43	0.319	C Day
1/05/2014 16:00	6243	17.68	17.5	47.07	2.04	70.74	21.26	4.175	0	0.281	0.23	A Day
1/05/2014 17:00	6244	16.99	17.5	68.27	0.655	72.24	27.91	2.45	0	0.108	0.091	A Day
1/05/2014 18:00	6245	13.2	14.6	69.74	2.478	248.4	3.542	3.65	0	0.003	0.013	E Day
1/05/2014 19:00	6246	12.29	13.33	69.72	3.356	249.5	4.444	3.875	0	0	0.014	E Day

TOA5	Dunmore	CR1000	4410	CR1000.Std.21	CPU:8165_ET_PS_fn_SMS_v3_3.CR1	29762	Hourly					
1/05/2014 20:00	6247	11.92	13.11	67.7	2.73	247.6	5.674	3.425	0	0	0.012	E Day
1/05/2014 21:00	6248	12.67	13.82	70.86	2.318	242.5	13.11	3.575	0	0	0.013	C Day
1/05/2014 22:00	6249	11.81	13.52	81.3	1.093	234.6	12.73	2.9	0	0	0.008	C Day
1/05/2014 23:00	6250	12.91	14.31	72.27	1.928	275.4	15.74	3.35	0	0	0.011	C Day

(vi) Offline dam

(vii) First-flush collection basin outside the workshop

(viii) Drain adjacent to the magazine area

(ix) Dunmore Quarry Conservation Agreement

Office of the Hon. Robyn Parker MP
Minister for the Environment
Minister for Heritage

DOC11/10231

The Directors
Boral Resources (NSW) Pty Ltd
PO Box 42
WENTWORTHVILLE NSW 2145

27 JUN 2011

Dear Sir/Madam

I am writing to advise you that I have signed the Dunmore Quarry Conservation Agreement.

By entering into this Conservation Agreement, you have become part of a wide network of landholders in NSW who have taken this path to protect our unique natural and cultural heritage for the knowledge and appreciation of current and future generations. This commitment shows your support for nature conservation in a tangible way.

I understand that the establishment of the Conservation Agreement satisfies condition 46A in Schedule 4 of development consent DA 470-11-2003 Dunmore Quarry Development Consent granted by the Minister Assisting the Minister for Planning and Infrastructure on 30 September 2004 as modified from time to time, for the long term security of the biodiversity offset referred to in condition 46(c) of the development consent.

I am pleased to see that the Conservation Agreement of 14.75 hectares protects diverse native vegetation, including three Endangered Ecological Communities under Schedule 1 of the *Threatened Species Conservation Act 1995.* I am also aware that the conservation agreement protects populations of *Zieria granulata* listed as Endangered on Schedule 1 of the *Threatened Species Conservation Act 1995.*

Officers of the Office of Environment and Heritage will arrange to register the Conservation Agreement on the property title. Once this is completed, they will inform your local council of the Agreement and return copies of the signed registered documents to you.

I wish you every success in managing this conservation area and thank you for the opportunity to enter into this partnership to secure the protection of your property for the future.

Yours sincerely

Robyn Parker

Robyn Parker MP
Minister for the Environment

(x) Used tyre storage

(xi) Chemical storage

(xii) Fire fighting equipment


FIRE
EXTINGUISHER
FULL
FIRE
EXTINGUISHER
EMPTY

APPENDIX D

ENVIRONMENT PROTECTION LICENCE

Environment Protection Licence

Licence - 77

Licence Details	
Number:	77
Anniversary Date:	31-August

Licensee
BORAL RESOURCES (NSW) PTY LTD
PO BOX 42
WENTWORTHVILLE NSW 2145

Premises
BORAL DUNMORE QUARRY
PRINCES HIGHWAY
DUNMORE NSW 2529

Scheduled Activity
Crushing, Grinding or Separating
Extractive Activities

Fee Based Activity	Scale
Crushing, grinding or separating	> 500000-2000000 T processed
Land-based extractive activity	> 500000-2000000 T extracted, processed or stored

Region
Metropolitan - Illawarra
Level 3, NSW Govt Offices, 84 Crown Street WOLLONGONG NSW 2500
Phone: (02) 4224 4100
Fax: (02) 4224 4110
PO Box 513 WOLLONGONG EAST
NSW 2520

Environment Protection Licence

Licence - 77

Environment Protection Licence

Licence - 77

Environment Protection Licence

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act); and
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

BORAL RESOURCES (NSW) PTY LTD
PO BOX 42
WENTWORTHVILLE NSW 2145

subject to the conditions which follow.

Environment Protection Licence

Licence - 77

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Crushing, Grinding or Separating	Crushing, grinding or separating	> 500000 - 2000000 T processed
Extractive Activities	Land-based extractive activity	> 500000 - 2000000 T extracted, processed or stored

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
BORAL DUNMORE QUARRY
PRINCES HIGHWAY
DUNMORE
NSW 2529
LOT 1 DP 213575, LOT 1 DP 224597, LOT 2 DP 224597, LOT 4 DP 227046, LOT 4 DP 571406, LOT 6 DP 1001931, LOT 1 DP 1002951, PART LOT 3 DP 1030504, LOT 4 DP 1030504
EXCLUDING BATCH PLANT LAND SHOWN ON PLAN 6673 - SEE DEC FILE280279A15

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

A3.2 Further to condition A4.1, the works and activities must be carried out in accordance with:

a) Correspondence entitled “Application to vary Environment Protection Licence No.77”, dated 20 June 2006, record number WOF14132.
b) Correspondence entitled “Response to Variation” emailed to DECC on 27 September 2006, including map “Boral Dunmore Quarry EPL 77 – Monitoring Location”, record number DOC06/51716.
c) Correspondence entitled “Dunmore Quarry – Revised Biodiversity Offset for Quarry Extension” prepared for Department of Planning and copied to the EPA, dated 22 September 2008.
d) “Boral Resources (NSW) Pty Ltd, Dunmore Quarry Water Management, Draft Water Management Plan” dated 28 April 2008, prepared by Evans and Peck.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Air Emissions Monitoring - Dust Deposition		Dust deposition gauge located at Croome Farm north and labelled "1" on map titled "Boral Dunmore Quarry EPL 77 - Monitoring Locations".
2	Air Emissions Monitoring - Dust Deposition		Dust deposition gauge located at Croome Farm south and labelled "2" on map titled "Boral Dunmore Quarry EPL 77 - Monitoring Locations".
3	Air Emissions Monitoring - Dust Deposition		Dust deposition gauge located on the south-eastern side of quarry and labelled "3" on map titled "Boral Dunmore Quarry EPL 77 - Monitoring Locations".
4	Air Emissions Monitoring - Dust Deposition		Dust deposition gauge located on the north-east side of quarry and labelled "4" on map titled "Boral Dunmore Quarry EPL 77 - Monitoring Locations".
5	Air emissions monitoring - high volume air sampler or equivalent		High volume air sampler or equivalent located on the southern side of the quarry and labelled "5" on the map titled "Boral Dunmore Quarry EPL 77 - Monitoring Locations".

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

P1.3 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
6	Discharge to waters and discharge quality monitoring	Discharge to waters and discharge quality monitoring	Discharge from the bio-filtration swale to Rocklow Creek labelled as "6" on map titled "Boral Dunmore Quarry EPL 77 - Monitoring Locations".
7	Discharge to waters and discharge quality monitoring	Discharge to waters and discharge quality monitoring	Uncontrolled discharge from upgraded existing stormwater treatment dam to Rocklow Creek labelled as "7" on map titled "Boral Dunmore Quarry EPL 77 - Monitoring Locations".
8	Effluent quality monitoring		At the discharge point end of the upgraded existing stormwater treatment dam labelled as "8" on map titled "Boral Dunmore Quarry EPL 77 - Monitoring Locations".
9	Discharge to waters and stormwater quality monitoring		Rocklow Creek at the boundary between Boral Quarry and Creagan Property
10	Discharge to waters and discharge quality monitoring	Discharge to waters and discharge quality monitoring	Uncontrolled discharge from top stormwater treatment dam to Rocklow Creek labelled as "10" on map titled "Boral Dunmore Quarry EPL 77 - Momitoring Locations".

P1.4 The following point(s) in the table are identified in this licence for the purpose of the monitoring of weather parameters at the point.

EPA Identification Number	Type of Monitoring Point	Description of Location
11	Weather Analysis	Weather station located on the southern side of the quarry and labelled "11" on the map titled "Boral Dunmore Quarry EPL 77 - Monitoring Locations".

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the

concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

L2.4 Water and/or Land Concentration Limits

POINT 6

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Total suspended solids	milligrams per litre				50

L3 Noise limits

L3.1 Noise from the premises must not exceed the limits in the following table when measured at the nominated receiver locations. Note that the noise limits represent the noise contribution from the premises.

L3.2 Noise Limits for the Dunmore Quarry Operations - LAeq(15 minute)

Receiver Locations (See Note)	Day dB(A)	Evening dB(A)	Night dB(A)	Shoulder dB(A)
Location A McParland Residence	35	35	35	35
Location K Stocker Residence	49	44	38	47
Location O Dunmore Lakes	49	44	38	47
Location J Cregan Residence	Negotiated Agreement in Place	Negotiated Agreement in Place	Negotiated Agreement in Place	Negotiated Agreement in Place

L3.3 Noise Limits for the Dunmore Quarry Operations LA1 - (1 minute)

Receiver Locations (See Note)	Night dB(A)	Shoulder dB(A)

Location A McParland Residence	45	45
Location K Stocker Residence	48	55
Location O Dunmore Lakes	48	55
Location J Cregan Residence	Negotiated Agreement in Place	Negotiated Agreement in Place

Note: 1. Receiver locations nominated in Appendix A Figure A2 of the report prepared by Richard Heggie Associates Report NO 605/03 Titled Part 1: *Noise Assessment – Dunmore Quarry Production Increase.*

2. The above table may be varied in the instance that negotiated agreements are entered into by the licensee and affected residents or if existing arrangements become void.

3. In conditions L3.2 and L3.3:
- "Day" refers to 07.00 am to 06.00 pm Monday to Saturday and 08:00 am to 06:00 pm Sundays and public holidays.
- "Evening" refers to 06.00 pm to 10.00 pm.
- "Night" refers to 10.00 pm to 06.00 am Monday to Saturday and 10:00 pm to 08:00 am Sundays and public holidays.
- "Shoulder" refers to 06.00 am to 07.00 am Monday to Saturday.

L3.4 Noise from the premises is to be measured at 1m from the dwelling façade to determine compliance with the LA1(1minute) noise limits.

L3.5 The noise emission limits identified above apply under meteorological conditions of:
a) Wind speed up to 3m/s at 10 metres above ground level; or
b) Temperature inversion conditions of up to 3oC/100m and wind speed up to 2m/s at 10 metres above the ground.

L4 Blasting

L4.1 The overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L4.2 The overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L4.3 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L4.4 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/sec for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L4.5 BLASTING TIMES AND FREQUENCY

Blasting operations on the premises may only take place:
a) between 9.00am and 5.00pm Monday to Saturday inclusive;
b) are limited to 2 blasts each day; and
c) at such other times as may be approved by the EPA.

L5 Hours of operation

L5.1 All work at the premises must be conducted between the following hours:

Activity	Days of the Week	Time
Extraction and Processing	Monday to Saturday	6:00am to 10:00pm
Product Transfer to Stockpiles	Monday to Saturday	6:00am to Midnight
Distribution of Product (Sales)	Monday to Saturday	24 hours
Distribution of Product (Sales)	Sunday	Limited - See Condition L5.2
Maintenance	Monday to Sunday	24 hours

L5.2 EXEMPTION FOR DISTRIBUTION OF PRODUCT FROM THE PREMISES (SALES) ON SUNDAYS

Distribution of product from the premises (Sales) on Sunday by road are to be no more than 15 Sundays in any one licensing year between the hours of 8-00am – 6-00pm unless prior approval is obtained from the EPA. This restriction does not apply to sales by rail, which are allowed 24 hours.

A logbook must be kept in the office building for the purpose of identifying Sundays when sales have occurred. An entry must be made in that log book on any Sunday when sales activities occur (excluding sales activities that consist of rail loading alone).

Note: Sales includes transfer of product to road and rail vehicles from stockpiles and subsequent haulage off-site. It does not include transfer of product from the processing plant to the product stockpile areas.

L6 Other limit conditions

L6.1 The licensee must not extract and/or process greater than 2 million tonnes of extractive material per year.

Note: The licensee, through Development Consent 470-11-2003, has approval to produce or transport up to 2.5 million tonnes per annum of extractive material. The licensee has advised the EPA by letter dated 20 June 2006 (refer A4.2) that they do not plan to extract and/or process and/or transport in excess of 2 million tonnes per annum of extractive material for a number of years and has requested they be placed in the 500,000-2,000,000 tonne per annum licence fee scale. This condition therefore adds a production limit of 2 million tonnes per annum.

L6.2 OVERSIZED MATERIAL

L6.3 Oversized raw feed material must not be processed during the shoulder period, being 6-00am –

7-00am.

Note: For the purpose of this condition oversized raw feed material is defined as where more than 50% of the shot is over 900mm in diameter.

Note: In consultation with the proponent the EPA will review at the EPL review stage the necessity to amend or continue the restriction in processing oversized raw feed material based on the findings of any submitted noise monitoring reports.

4 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:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) 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 licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O4 Processes and management

O4.1 WATER POLLUTION CONTROL

O4.2 The storm water management system is to be managed and operated in accordance with the operating principles of the revised Water Management Plan prepared by Evans and Peck, dated April 2008.

O4.3 The stormwater management system must be maintained at its design capacity. In this regard the licensee must inspect the drainage system and associated stormwater infrastructure every three months and following heavy rainfall and arrange for routine maintenance as required. Inspection sheets certifying this work has been completed and detailing actions arising from the inspections must be kept in accordance with the requirements of this licence.

O4.4 Any proposal for a change of flocculant other than those specified in the report titled Dunmore Quarry - Response to Water Management Issues, prepared by Environmental Resources Management Australia and dated February 2004, requires EPA approval and may require an appropriate eco-toxicological risk assessment to the satisfaction of the EPA. The flocculants nominated in the abovementioned report were aluminium sulphate and ferric chloride.

O4.5 Impervious bunds must be constructed around all fuel, oil and chemical storage areas and the bund volume must be large enough to contain 110 per cent of the volume held in the largest container.

O5 Waste management

O5.1 All liquid and non liquid wastes resulting from activities and processes at the premises must be assessed, classified and managed in accordance with the EPA's Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes (1999), or any other EPA document superseding this guideline.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.2 Air Monitoring Requirements

POINT 1

Environment Protection Licence

Pollutant	Units of measure	Frequency	Sampling Method
Ash	grams per square metre per month	Monthly	AM-19
Insoluble solids	grams per square metre per month	Monthly	AM-19
Soluble matter	grams per square metre per month	Monthly	AM-19
Total Solid Particles	grams per square metre per month	Monthly	AM-19

POINT 2

Pollutant	Units of measure	Frequency	Sampling Method
Ash	grams per square metre per month	Monthly	AM-19
Insoluble solids	grams per square metre per month	Monthly	AM-19
Soluble matter	grams per square metre per month	Monthly	AM-19
Total Solid Particles	grams per square metre per month	Monthly	AM-19

POINT 3

Pollutant	Units of measure	Frequency	Sampling Method
Ash	grams per square metre per month	Monthly	AM-19
Insoluble solids	grams per square metre per month	Monthly	AM-19
Soluble matter	grams per square metre per month	Monthly	AM-19
Total Solid Particles	grams per square metre per month	Monthly	AM-19

POINT 4

Pollutant	Units of measure	Frequency	Sampling Method
Ash	grams per square metre per month	Monthly	AM-19
Insoluble solids	grams per square metre per month	Monthly	AM-19
Soluble matter	grams per square metre per month	Monthly	AM-19
Total Solid Particles	grams per square metre per month	Monthly	AM-19

Environment Protection Licence

POINT 5

Pollutant	Units of measure	Frequency	Sampling Method
PM10	micrograms per cubic metre	Every 6 days	AM-18

M2.3 Water and/ or Land Monitoring Requirements

POINT 6

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Daily during any discharge	In situ
Flow	kilolitres per day	Continuous during discharge	Special Method 1
Oil and Grease	Visible	Daily during any discharge	Inspection
pH	pH	Daily during any discharge	In situ
Total suspended solids	milligrams per litre	Daily during any discharge	Grab sample
Turbidity	nephelometric turbidity units	Daily during any discharge	In situ

POINT 7

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Daily during any discharge	In situ
Oil and Grease	Visible	Daily during any discharge	Inspection
pH	pH	Daily during any discharge	In situ
Total suspended solids	milligrams per litre	Daily during any discharge	Grab sample
Turbidity	nephelometric turbidity units	Daily during any discharge	In situ

POINT 8

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Monthly	In situ
Oil and Grease	Visible	Monthly	Inspection
pH	pH	Monthly	In situ
Total suspended solids	milligrams per litre	Monthly	Grab sample

Turbidity	nephelometric turbidity units	Monthly	In situ

POINT 10

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Daily during any discharge	In situ
Oil and Grease	Visible	Daily during any discharge	Inspection
pH	pH	Daily during any discharge	In situ
Total suspended solids	milligrams per litre	Daily during any discharge	Grab sample
Turbidity	nephelometric turbidity units	Daily during any discharge	In situ

M2.4 For the purposes of the table(s) above Special Method 1 means measurement of flow at the controlled discharge from the upgraded existing stormwater treatment dam to the bio-filtration swale.

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Weather monitoring

M4.1 For each monitoring point specified in the table below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.

POINT 11

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Rainfall	millimetres	Continuous	1 hour	AM-4
Wind speed @ 10 metres	metres per second	Continuous	15 minute	AM-2 & AM-4
Wind direction @ 10 metres	degrees	Continuous	15 minute	AM-2 & AM-4
Temperature @ 2 metres	degrees celcius	Continuous	15 minute	AM-4
Temperature @ 10 metres	degrees celcius	Continuous	15 Minute	AM-4
Additonal Requirements - Siting				AM-1 & AM-4
Additonal Requirements - Measurement				AM-2 & AM-4

M5 Recording of pollution complaints

M5.1 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.

M5.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 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.

M6.2 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.

M6.3 The preceding two conditions do not apply until 3 months after:
a) the date of the issue of this licence or
b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

M7 Blasting

M7.1 To determine compliance with limit conditions relating to blasting:

a) Airblast overpressure and ground vibration levels must be measured and electronically recorded at the McParland Property monitoring station for all production blasts carried out in or on the premises; and
b) Instrumentation used to measure the airblast overpressure and ground vibration levels must meet the requirements of Australian Standard AS 2187.2-2006.

M8 Other monitoring and recording conditions

M8.1 NOISE MONITORING

M8.2 Noise from the premises must be continuously monitored at location K (refer condition titled “Noise Limits”) by use of a real time continuous noise monitoring system. The system shall be capable of, but not necessarily limited to the following:
a) continuous 24 hour seven day per week real time monitoring;
b) linked in real time to Boral Quarry Operations Management;
c) linked to a procedure that outlines corrective/preventative action to ensure compliance with EPL limits.

Detected exceedances of the noise limits must be reported to EPA within 7 days of the detection of the exceedance. The report shall include details of the date and time of the exceedance, the operational cause of the exceedance, the response initiated and the measures proposed to ensure ongoing compliance with the noise limits.

Note: The EPA’s General Terms of Approval for Development Application 470-11-2003 required the licensee to consult with the EPA in the development of an agreed noise monitoring program. As part of these consultations the licensee implemented a noise monitoring system known as “Barn Owl” that was to be deployed for a minimum of 3 months to determine compliance, and may also be used in developing near-field noise level triggers as is required by PRP 15. The EPA suggested that use of the Barn Owl system cover periods when the plant is operating as well as during the Christmas shutdown. The EPA said that use of the Barn Owl over the period when noise levels are likely to be at their worst (ie winter) will also be necessary. It has been agreed that at the conclusion of the monitoring the results will be assessed (along with the results of PRP 15) to determine the necessity for continuation of real time continuous noise monitoring at Location K.

M8.3 Noise from the premises must be measured annually via attended noise surveys at potentially affected residences, including Location K Stocker Residence (as described elsewhere in the licence). The noise monitoring should be conducted during the period when it is known that noise propagation from the premises will be at its worst, that is, generally winter conditions.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, 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.

R1.3 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.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA 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.

R1.5 The Annual Return for the reporting period must be supplied to the EPA 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').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 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 EPA to sign on behalf of the licence holder.

R1.8 A person who has been given written approval to certify a certificate 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 of this licence.

R1.9 The licensee must supply with the Annual Return a report, which provides:
a) an analysis and interpretation of monitoring results; and
b) actions to correct identified adverse trends.

Note: In consultation with the licensee the EPA will review at the EPL review stage the necessity to expand, reduce, amend or continue any specific aspects of the monitoring program based on the findings of any submitted monitoring reports.

R1.10 REPORTING OF ENVIRONMENTAL MONITORING DATA

R1.11 A noise compliance assessment report, detailing the findings of the noise monitoring required by the monitoring conditions of this licence, must be submitted to EPA yearly as part of the Annual Return. The report shall be prepared by a suitably qualified acoustical consultant. The noise compliance assessment must include, but need not be limited to a comparison of actual noise levels from the premises with the noise limits specified in this licence.

R1.12 A dust deposition report, must be submitted to the EPA yearly as part of the Annual Return. This dust deposition report must contain:
a) A brief summary of the results for all dust deposition monitoring sites.

b) Tabulated monthly data and rolling annual averages for “insoluble solids” and “ash” for each site for the 12 month period covered by the Annual Return. Where the monthly insoluble solid level is greater than 4 g/m2/month an assessment to determine the likely reason for the elevated dust deposition level must be made of:
i) Weather data (including provision of a wind rose showing wind speed and direction for the period of the monitoring);
ii) Ash content of the sample;
iii) Operating conditions such as monthly production or quarry blasts that may have caused the elevated level; and
iv) Other relevant factors.

The findings of the above assessment must be included in the dust deposition report.

Where results are not available the licensee must provide an explanation for the reasons for such non-availability.

c) For each monitoring site, a graphical presentation(s) must be made of dust deposition results since 2002 which includes:
i) The rolling 12 month annual average insoluble solids trendline;
ii) The rolling average insoluble solids trendline since 2002;
iii) The rolling average ash trendline since 2002;
iv) The EPA’s impact assessment criteria for deposited dust; and
v) Annual quarry production rates.

d) Where the rolling average ash trendline shows an upward trend the licensee must provide details of programs and/or works and/or actions that will be put in place to ensure the EPA’s impact assessment criteria for dust is not exceeded.

Note: The EPA's Annual Impact Assessment Criteria for insoluble solids of 4 g/m2/month (12 month rolling average) has been chosen as the standard at which the licensee will do a detailed assessment, if monthly results exceed this figure.

Note: If individual results are also included on the graph it is appropriate to adjust the vertical axis to a lower value, say 6 g/m2/month, so that long term trends can be identified.

Note: This condition is included on the licence as air quality dispersion modelling has predicted an increase in deposited dust with increased quarry production. The EPA's deposited dust impact assessment criteria is expressed in terms of insoluble solids. However due to the nature of the product being quarried any assessment of long-term trends needs to include an assessment of "ash" as dust from the quarrying activities conducted on the premises is mostly inorganic and will predominantly be recorded as "ash".

R1.13 A Fine Particulate (PM10) Report must be submitted to the EPA yearly as part of the Annual Return. This fine particulate report must contain:
a) A brief summary of all the results for PM10 conducted over the licensing year;
b) Graphical presentation of all results for PM10 conducted over the licensing year as well as the annual average and lines representing the impact assessment criteria for PM10 detailed in the publication "Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales";
c) Where levels exceed the impact assessment criteria, an assessment to determine the likely reason for the elevated reading must be undertaken and included in the report. For individual results this may include:
i) Weather data (including an assessment of wind speed and direction for the 24 hours of the test);
ii) Operating conditions such as blasting that may have coincided with the 24 hour monitoring period; and
iii) Other relevant factors.

R1.14 A summary of the monitoring of all blasts undertaken during the licence period must be included in the Annual Return. The summary must include, but may not be limited to, the date, time, ground vibration (mm/sec - peak particle velocity), and airblast overpressure of (dB(Lin Peak)).

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA 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.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 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;
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; and
g) any other relevant matters.

R3.4 The EPA 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 EPA within the time specified in the request.

R4 Other reporting conditions

R4.1 The results of the monitoring required by Condition M7.1 for each blast that exceeds a ground vibration of 5mm/sec (peak particle velocity) or an airblast overpressure of 115 dB(Lin Peak) must be submitted to the EPA within 7 days of the blast.

R4.2 The written record of results submitted to the EPA must include:
(i) the time and date of each blast;
(ii) the station(s) at which noise was measured;
(iii) the ground vibration for each blast;
(iv) the airblast overpressure for each blast;
(v) evidence that during each 12 month period, a calibration check had been carried out on each blast monitor to ensure accuracy of the reported data; and
(vi) the waveform for the ground vibration and overpressure for the blast.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Other general conditions

G2.1 Completed Pollution Studies and Reduction Programs (PRPs)

PRP	Description	Completed Date
PRP 1 - Undertake a noise assessment	Original Title: Undertake a Noise Assessment and Determine Appropriate Project Specific Noise Levels for the Site. Assessment of ambient noise levels within the residential areas surrounding quarry to determine project specific noise levels for site. Noise to be determined in accordance with the Industrial Noise Policy.. Boral to fully disclose environmental impact of noise from quarry	31-January-2002
PRP 2 – Dust Control Work Plan Quarry Roads	Original Title: Prepare a Plan of Works for the Control of Dust from Quarry Roads. Upgrade controls for dust emissions from quarry roads so that when implented quarry roads will not be a source of vehicle generated dust	01-March-2002
PRP 3 – Stormwater Pollution Control Work	Original Title: Prepare a Plan of Works for the Control of Stormwater Pollution from the Quarry. Develop a system of controls that captures all of the contaminated stormwater run off for reuse in dust suppression and/or treatment and discharge to Rocklow Creek.	03-May-2002
PRP 4 – Dust Control Work Plan - High Risk Ops	Original Title: Prepare a Plan of Work for the Control of Dust from the Screenhouse and Bunkers and the Secondary Crusher and Related Transfer Points. Ensure all dust generated within the screenhouse and bunker systems, and the area of the secondary crusher and related transfer points is suppressed.	01-June-2002
PRP 5 – Fixed Water Spray Installation	Original Title: Install Fixed Water Sprays on the roadway between the Site Offices/Weighbridge and the Crushing and Screening Plant Control Room. Installation of sprinkler system to suppress dust from quarry roads. Less dust from quarry road transport into sales area	30-September-2002
PRP 6 – Installation of Dust Controls	Original Title: Install the Following Dust Controls; Clad the Southern Side of the Quarry Product Bunkers; Install Fabric Filter Dust Controls at the tail and head of Conveyor 4 and; Install Fabric Filter Dust Collector at the discharge to Crushers CR6 and CR7. Dust control from screenhouse and other buildings. Prevention of wind and minimise emissions of dust	30-September-2002

Environment Protection Licence

Licence - 77

PRP 7 – Air Quality Impact Assessment	Original Title: Undertake Air Quality Impact Assessment in Relation to Proposed Increased Extraction Rates. Air pollution assessment for the increased production proposal. Determine impacts to assist planning decisions	31-March-2004
PRP 8 – Emergency Contingency Management	Original Title: Develop an Emergency Contingency Management Plan. Emergency Contingency Management. Document and implement measures to minimise the environmental impacts of any emergency situations that could arise as a result of the operation of the Dunmore Quarry.	18-May-2005
PRP 9 – Dust Control Effectiveness Program	Original Title: Develop a Dust Control Effectiveness Program. Investigate the effectiveness of dust mitigation controls in relation to the production increase at the premises	01-December-2005
PRP 10 Construct Stormwater Pollution Control Dam	Original Title - Construct and commission stormwater pollution control dam. To capture and treat polluted runoff waters from storm events of less than and including a 1:10 year, 24 hours duration, average recurrence interval	26-June-2009
PRP 11 - Integrated Water Management Program	Original Title: Integrated Water Management Program. To address the external annual water demand for the operation of the premises, which has been estimated at an upper limit of 117 ML/year.	18-November-2005
PRP 12 – Water Control Installation	Original Title: Install Works to achieve better water pollution control. To implement the recommended works detailed in the report titled "Dunmore Quarry - response to water management issues"	13-July-2006
PRP 13 – Install a Rainfall Station	PRP 13 - Install a rainfall station. Install and maintain a rainfall monitoring device which will assist in determining compliance with the conditions of this licence	18-August-2005
PRP 15 - Nearfield Noise Monitoring Investigations	Original Title: Conduct Nearfield Noise Monitoring Investigations. To determine near field trigger levels which would assist in demonstrating compliance and verify the effectiveness of noise mitigation works	18-May-2005
PRP 16 - Fines Stockpile Management Plan	Original Title: Develop a Fines Stockpile Management Plan. Implement measures for the management of the minus 4mm stockpiles with the aim to stabilize the surface of the stockpiles to minimize wind blown dust emissions and to minimize erosion due to stormwater run off	01-March-2005
PRP 17 - Noise Compliance Investigation Program	PRP 17 - Noise Compliance Investigation Program. Identify a range of options to facilitate compliance with the EPL noise limits through physical attenuation measures and/or operational/management processes.	01-July-2006

PRP 18: Clad Secondary Crusher	Original Title: Enclose Secondary Crusher to Reduce Noise. The licensee has advised that cladding the Secondary Crusher will reduce noise at the source by about 12 dBA and this will allow noise limit compliance at the nearest noise receptor.	01-July-2006
PRP 19: Enclose Screen 1 and Fill In gaps	Original Title: Enclose Screen 1 and enclose gaps between the Primary Crusher and the Secondary Crusher. Reduce noise levels so as to comply with licence noise limits.	01-October-2006
PRP 20 Tertiary Screenhouse dust emissions	PRP 20: Improved Dust Controls for the Tertiary Screenhouse. Investigations and then works into reducing dust emissions from the Tertiary Screenhouse. Reduced dust emissions from the premises.	30-June-2010

8 Special Conditions

E1 Biodiversity Conservation Offset

E1.1 The Licensee will conserve, maintain, enhance and ensure long term security of the vegetation offset by a means agreed to by the EPA.

Note: The vegetation offset is detailed in correspondence to the Department of Planning and copied to the EPA, dated 22 September 2008 (refer to A4.2).

Environment Protection Licence

Licence - 77

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 77

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder describe d at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

Licence - 77

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Nigel Sargent

Environment Protection Authority

(By Delegation)

Date of this edition: 14-December-1999

Environment Protection Licence

Licence - 77

End Notes

1	Licence varied by notice V/M upgrade, issued on 08-Jul-2000, which came into effect on 08-Jul-2000.
2	Licence transferred through application 140020, approved on 27-Sep-2000, which came into effect on 31-Aug-1999.
3	Licence varied by notice 9418, issued on 09-Mar-2000, which came into effect on 30-Mar-2000.
4	Licence varied by notice 1012272, issued on 19-Oct-2001, which came into effect on 13-Nov-2001.
5	Licence varied by notice 1013531, issued on 14-Dec-2001, which came into effect on 08-Jan-2002.
6	Licence varied by notice 1016381, issued on 12-Aug-2002, which came into effect on 06-Sep-2002.
7	Licence varied by notice 1021119, issued on 11-Oct-2002, which came into effect on 05-Nov-2002.
8	Licence varied by notice 1026479, issued on 08-Jul-2003, which came into effect on 08-Jul-2003.
9	Licence varied by notice 1035077, issued on 17-Nov-2004, which came into effect on 18-Nov-2004.
10	Licence varied by notice 1056152, issued on 15-Feb-2006, which came into effect on 12-Mar-2006.
11	Licence varied by change to DEC Region allocation, issued on 16-Mar-2003, which came into effect on 16-Mar-2003.
12	Licence varied by notice 1057794, issued on 12-Apr-2006, which came into effect on 12-Apr-2006.
13	Licence varied by notice 1061796, issued on 23-Jun-2006, which came into effect on 23-Jun-2006.
14	Licence varied by notice 1065559, issued on 29-Sep-2006, which came into effect on 29-Sep-2006.
15	Licence varied by notice 1073479, issued on 17-May-2007, which came into effect on 17-May-2007.
16	Licence varied by notice 1081122, issued on 16-May-2008, which came into effect on 16-May-2008.
17	Licence varied by notice 1088505, issued on 14-Jul-2008, which came into effect on 14-Jul-2008.
18	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>

Environment Protection Licence

Licence - 77

19	Licence varied by notice 1102292, issued on 12-Aug-2009, which came into effect on 12-Aug-2009.
20	Licence varied by notice 1106096, issued on 14-Sep-2009, which came into effect on 14-Sep-2009.
21	Licence varied by notice 1502449 issued on 03-Nov-2011
22	Licence varied by notice 1502884 issued on 15-May-2012
23	Licence varied by notice 1506167 issued on 17-May-2012
24	Licence varied by notice 1512744 issued on 27-Mar-2013
25	Licence varied by notice 1518429 issued on 22-Nov-2013