

December 2015

Independent Environmental Audit

Moolarben Coal Project



Trevor Brown & Associates
APPLIED ENVIRONMENTAL MANAGEMENT CONSULTANTS

RPT NO. MCO/APRIL2016/REV2

**Independent Environmental Audit
Moolarben Coal Project**

December 2015

**trevor brown & associates
applied environmental management consultants**

Report ID: Yancoal/MCO/Rev 2/April2016

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15 April 2016

Trevor Brown

Principal Environmental Management Consultant/Auditor

Independent Audit Certification Form

Development Name	Moolarben Coal Project
Development Consent No.	Project Approval 05_0117 and Project Approval 08_0135
Description of Development	Coal Mine
Development Address	4250 Ulan Road Mudgee NSW 2850
Operator	Moolarben Coal Operations Pty Ltd
Operator Address	Moolarben Coal Operations Pty Ltd, Locked Bag 2003, Mudgee NSW 2850

Independent Audit

Title of Audit	Moolarben Coal Project Independent Environmental Audit December 2015
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I certify that I have undertaken the independent audit and prepared the contents of the attached independent audit report and to the best of my knowledge:

- *The audit has been undertaken in accordance with relevant approval condition(s) and in accordance with the auditing standard AS/NZS ISO 19011:2014 and Post Approval Guidelines – Independent Audits*
- *The findings of the audit are reported truthfully, accurately and completely;*
- *I have exercised due diligence and professional judgement in conducting the audit;*
- *I have acted professionally, in an unbiased manner and did not allow undue influence to limit or over-ride objectivity in conducting the audit; • I am not related to any owner or operator of the development as an employer, business partner, employee, sharing a common employer, having a contractual arrangement outside the audit, spouse, partner, sibling, parent, or child;*
- *I do not have any pecuniary interest in the audited development, including where there is a reasonable likelihood or expectation of financial gain or loss to me or to a person to whom I am closely related (i.e. immediate family);*
- *Neither I nor my employer have provided consultancy services for the audited development that were subject to this audit except as otherwise declared to the lead regulator prior to the audit; and*
- *I have not accepted, nor intend to accept any inducement, commission, gift or any other benefit (apart from fair payment) from any owner or operator of the development, their employees or any interested party. I have not knowingly allowed, nor intend to allow my colleagues to do so. Note. a) The Independent Audit is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000. b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2years imprisonment or \$22,000, or both).*

Signature	
Name of Lead/Principal Auditor	Trevor Brown
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Date:	15 April 2016

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Executive Summary

Project Approval 05_0117 (September 2007) and Project Approval 08_0135 (January 2015) were granted to Moolarben Coal Operations Pty Ltd, for the Moolarben Coal Project, located in the Western Coalfields of New South Wales, east of Ulan and approximately 40 km northeast of Mudgee.

This Independent Environmental Audit was commissioned by Moolarben Coal and conducted in December 2015 by Trevor Brown & Associates to satisfy the requirements of Project Approval 05_0117 Schedule 5 condition 9 and Project Approval 08_0135 Schedule 6 condition 9.

Moolarben Coal has implemented comprehensive environmental management and monitoring systems for the Moolarben Coal Complex (i.e. Stage 1 and Stage 2) operations. The Moolarben Coal management team and environmental personnel present serious commitment to environmental performance of the operations at the site.

The Independent Environmental Audit found that Moolarben Coal had generally achieved a high level of compliance with the conditions of Project Approval 05_0117, Project Approval 08_0135, EPL 12932, Bore Licences and Mining Lease environmental conditions. A review of the Environmental Assessments and Modifications prepared for the project found that the development is being constructed and operated generally in accordance with the project described in the Environmental Assessments.

Environmental Management Strategy

Compliance Status: Compliant

The Environmental Management Strategy prepared for the Moolarben Coal Complex project provides a sound basis for the management of the environmental performance related to the Moolarben Coal operations.

Management Plans

Compliance Status Compliant

The environmental management plans for the Moolarben Coal Project have been prepared in accordance with Project Approval 05_0117 Schedule 5 condition 3 and Project Approval 08_0135 Schedule 6 condition 3. The management plans provide adequate procedures and programs to meet the environmental performance requirements of the Project Approvals granted for the Moolarben Coal Complex project activities and operations.

Annual Review

Compliance Status Compliant

The format and content of the annual review, titled Annual Environmental Management Report, prepared by Moolarben Coal to satisfy Project Approval 05_0117 Schedule 5 condition 4 and Project Approval 08_0135 Schedule 6 condition 4, presents a detailed annual review of the environmental performance of the project that generally conforms with the format required by the Project Approvals. The content of the Annual Environmental Management Report provides an accurate reporting of the status and data for the operations of the project for the periods covered by the documents.

Noise

Compliance Status: Compliant Ongoing

The Noise Management Plan for the Moolarben Coal Complex (Stage 1 and Stage 2) was approved in July 2015 and has been implemented for the project. Moolarben Coal has implemented a very detailed real time monitoring, attended monitoring and complaints handling system for noise. The Auditor considers that Moolarben Coal Complex is currently meeting its obligations under all the Project Approval noise conditions, Statements of Commitment and EPL 12932 conditions. The Moolarben Coal complaints response procedure is consistent with best practice and with the use of the Mining and Production Environmental Assistants providing real time investigation and advice to the mine operations personnel on noise emissions from the mine activities, is considered to exceed the procedures/protocols implemented at other extractive industry projects in NSW.

Blasting

Compliance Status

Compliant

The implementation of the Blast Management Plan for the Moolarben Coal Complex describes the management of blasting associated with the open cut operations (including management of overpressure, vibration, and fly-rock management) and generally conforms with best practice. The blast monitoring between January 2013 and December 2015 demonstrated compliance with the blast overpressure and vibration criteria at all monitored locations for all blasts. Generation of blast fume that occurred between 2013 and 2015 was reported in accordance with the Pollution Incident Response Management Plan. The fume generation was generally due to the presence of water in the blast drill-holes and/or the quality of the product used for blasting.

Air Quality

Compliance Status:

Compliant

The Air Quality Management Plan for Stage 1 and Stage 2 of the Moolarben Coal Complex was approved by DP&E in July 2015. The implementation of the Air Quality Management Plan addresses management of operations and monitoring of air quality for the Moolarben Coal Complex activities in accordance with best management practices outlined in the Air Quality Management Plan. The air quality management at the Moolarben Coal Complex indicated that the operations are in compliance with the conditions of Project Approval 05_0117, Project Approval 08_0135 and EPL 12932, in relation to air quality requirements and commitments.

Water Management

Compliance Status

Compliant Ongoing

The implementation of the Water Management Plan and sub-plans prepared for the Moolarben Coal Complex project and approved by DP&E on 31 July 2015, demonstrate Moolarben Coal is managing surface water generally in accordance with Project Approval, EPL and bore licence requirements. Recent upgrades to the surface water management system, the Water Sharing Agreement with Ulan Coal, and no licensed discharges from the site during January 2013 to December 2015, have demonstrated a high level of performance of water management on the site.

Site Water Balance

Compliance Status

Compliant Ongoing

The review of the Moolarben Coal water management system and draft site water balance model conducted by WRM in September 2015 concluded the water management system has a chance of accumulating significant volumes of water within both the site storages and pit voids over the next 5 years. To verify the current assumptions used in the site water balance model it was recommended by WRM that close monitoring of the pit dewatering volumes to enable verification (or otherwise) of the adopted pit groundwater inflows occur. Pit dewatering volumes are monitored in accordance with the currently approved Water Management Plan. The Site Water Balance document should be updated to include the current Bore Licences and removal of superseded licences.

Surface Water

Compliance Status

Compliant Ongoing

The observation of implementation of the Surface Water Management Plan and desktop review of water management documents, demonstrates Moolarben Coal appear to be managing surface water generally in accordance with Project Approval, EPL and bore licence requirements. Recent upgrades to the surface water management system, the Water Sharing Agreement with Ulan Coal and no licensed discharges from the site, have resulted in a demonstrated high level of performance.

Groundwater Management

Compliance Status

Compliant Ongoing

The Groundwater Management Plan has been implemented and the monitoring programs conducted. The groundwater Bore Licenses have been consolidated by DPI-Water and the new licenses (20BL172002 (Mining) And 20BL173923 (Mining/Industrial) issued in November 2015. Based on observations and desktop review of documents, Moolarben Coal appear to be managing groundwater generally in accordance with Project Approval, EPL and Bore Licence requirements. Groundwater management and monitoring, including minimisation of the need for extraction, is being undertaken at Moolarben Coal and impacts related to the operations are considered within the impacts predicted in the Environmental assessment.

Heritage Management

Compliance Status

Compliant Ongoing

The Heritage Management Plan prepared to satisfy the Project Approval conditions is comprehensive and was current at the time of audit. The Heritage Management Plan addresses each of the requirements of the Project Approval adequately for the Moolarben Coal Complex operations. Moolarben Coal has implemented the Heritage Management Plan and is compliant with the commitments in the Plan and Project Approval conditions. This conclusion was reached on the basis of review of documentation, interviews with Moolarben Coal staff and field inspections. It is considered that Moolarben Coal is achieving conservation of a range of heritage sites on the Moolarben Coal Complex periphery, with the salvage of artefacts and retention of information and cultural material of a high standard and conformance with relevant statutory guidelines.

Biodiversity Management

Compliance Status

Compliant Ongoing

The Biodiversity Management Plan and its integration with the Rehabilitation Management Plan are being implemented and will be progressively refined as the restoration of disturbed areas is undertaken and the mechanism for management of the offset areas is confirmed through consultation with the OEH and DP&E. Arrangements to provide long-term security for the offset areas described in Project Approval 05_0117 Schedule 3 condition 34 - Table 12 and Project Approval 08_0135 Schedule 3 condition 30 Table 15, have been developed in consultation with OEH (NPWS) and the documentation prepared and submitted to the Secretary for approval in December 2015. Biodiversity values are being managed by implementation of a range of strategies and monitoring to minimise impacts and conserve and enhance biodiversity values within the mining lease areas and the proposed offset areas.

It was noted during this Independent Environmental Audit that the Moolarben Coal environmental personnel and the Company management had a sound understanding of biodiversity issues by Moolarben Coal and the staged development of the Biodiversity Management Plan and offset management is considered to be progressing in a logical way to meet the long term security requirements of the conditions of Project Approval and the EPBC Approvals.

Rehabilitation

Compliance Status:

Compliant Ongoing

The majority of the rehabilitation conditions of Project Approval No. 05_0117 have been triggered for the Stage 1 works and operations. As the Stage 2 site establishment only commenced in September 2015, only the management plan requirements of Project Approval 08_0135 had been triggered at the date of this audit.

Rehabilitation of the Stage 1 Moolarben Coal development was observed to be undertaken progressively on-site with the areas available for rehabilitation stabilised and contoured satisfactorily and surface drainage structures established on the finished areas. No significant erosion was observed on the rehabilitated slopes. There was a high level of awareness and interest amongst site personnel from passing discussions with evidence of rehabilitation initiatives from non-environmental personnel (e.g. erection of stag trees to provide fauna refuge).

Community Consultation

Compliance Status:

Compliant Ongoing

The Community Consultative Committee (CCC) established for the Moolarben Coal Project includes members of the local community, representatives from Mid-Western Regional Council, and representatives of Moolarben Coal. CCC meetings were held on a quarterly basis during 2012 and 2013, and each 4 months in 2014 and 2015.

The majority of the total complaints received during the January 2013 to December 2015 period were related to noise with the complaints received from the south and west of the Moolarben Coal operations. Moolarben Coal respond to all complainants and have dedicated Mining and Production Environmental Assistants who respond to and report in real time on noise emissions and mine operations. The introduction of the role of Mining and Production Environmental Assistants for the Moolarben Coal Complex is considered a positive response by the company for the investigation of complaints with immediate feedback to the mining operations personnel to implement mitigation measures where required, specifically to address the nature of the complaint(s).

1. Introduction

1.1 Background

The Project Approval 05_0117 and was granted to Moolarben Coal Mines Pty Limited for Moolarben Coal Project Stage 1 in September 2007 and Project Approval 08_0136 was granted for Moolarben Coal Project Stage 2 on 30 January 2015. The Project Approvals provide for the establishment and operation of the Moolarben Coal Project located in the Western Coalfields of New South Wales, east of Ulan and approximately 40 km northeast of Mudgee in the Mid-Western Regional Local Government Area.

This Independent Environmental Audit was commissioned by Moolarben Coal Mines Pty Limited in December 2015 and conducted to satisfy the requirements of Project Approval 05_0117, Schedule 5 condition 9 and Project Approval 08_0136 Schedule 6 condition 9:

'By 31 December 2015, and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:

- (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;*
- (b) include consultation with the relevant agencies;*
- (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval, and any other relevant approvals, relevant EPL/s and/or Mining Lease (including any assessment, plan or program required under these approvals);*
- (d) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals; and*
- (e) recommend measures or actions to improve the environmental performance of the project, and/or any strategy, plan or program required under these approvals.'*

The Independent Environmental Audit site inspection and documentation assessment for compliance with Consolidated Project Approval 05_0117 dated July 2015 for Stage 1 and Consolidated Project Approval 08_0136 dated July 2015 for Stage 2, and other environmental approvals for the Moolarben Coal Project. The Independent Environmental Audit was carried out in December 2015, by an audit team endorsed by the Secretary of the Department of Planning and Environment on 13 November 2015. The audit team endorsed by DP&E demonstrated suitable qualifications and experience in accordance with the *Independent Audits Guideline*, section 3, DP&E (October 2015):

- Trevor Brown (Trevor Brown & Associates – Principal Auditor
- Shane Lakmaker (Jacobs Group Australia Pty Ltd) – Air Quality
- Fiona Robinson (Ramboll Environ) – Surface and Groundwater
- Michael Frankcombe (WSP Parsons Brinkerhoff) – Rehabilitation
- John Wasserman (Wilkinson Murray) – Noise
- Doug Williams (Access Archaeology and Heritage) - Heritage

1.2 Scope of Work

The Independent Environmental Audit was conducted generally in accordance with the Australian/New Zealand Standards ISO 19011:2002 – *Guidelines for Quality and/or Environmental Systems Auditing* and the *Independent Audits Guideline*, DP&E October 2015.

Project Approval 05_0117 Modification 9 granted in June 2014 made significant changes to the conditions of approval for Moolarben Coal Project Stage 1 and these conditions and the subsequent minor Modifications 10 and 11 were assessed during this audit for the Stage 1 operations.

The Project Approval 08_0135 was granted on 30 January 2015 for Stage 2 of the Moolarben Coal Project and site preparation and establishment for the Stage 2 Open Cut 4 commenced in September 2015, therefore the activation of many of the Project Approval 08_0135 conditions had not occurred at the date of this audit (December 2015). Management plan preparation and approval were the main conditional requirements that had been triggered prior to commencement of surface works for Open Cut 4.

The scope of work for the independent environmental audit of the Moolarben Coal Complex for the period January 2013 to December 2015 included the following components:

- review of compliance with Project Approval 05_0117 and Project Approval 08_0135 conditions and other environmental approvals for the project;
- conduct of a site inspection and review on-site documentation and monitoring data for the project, relevant to the audit;
- discussion of the development consent and other approval conditions and operation of the project with Moolarben Coal Project personnel;
- assessment of environmental performance of the development with the requirements in this Project Approval, Environment Protection Licence and Mining Lease conditions (including any assessments, plans or programs required under these consents/approvals);
- review of the adequacy of strategies, plans or programs prepared under the abovementioned consents/approval;
- provision of recommendations if considered necessary for implementation of measures or actions to improve environmental performance of the development, and/or any assessment, plan or program required under the project approvals; and
- preparation of the Independent Environmental Audit Report providing assessment of compliance against each approval condition and provision of recommendations or actions where considered appropriate to improve the environmental performance of the development, and/or the environmental management and monitoring systems

The audit assessed the level of compliance and the environmental performance of the mine against the following approvals and licences:

- Environmental Assessment Report – Moolarben Coal Project, September 2006 and subsequent Modifications 1 -11
- Consolidated Project Approval 05_0117 dated July 2015;
- Environmental Assessment Report – Moolarben Coal Project Stage 2, March 2009 and subsequent Modification 1;
- Project Approval 08_0136 and Modification 1 dated July 2015;
- Environment Protection Licence No. 12932;
- Mining Leases ML 1605, ML1606, ML1691 and ML1715; and
- Water Licences 20BL172002, 20BL173923 and 20BL173935.

Plans and programs required to be prepared by the Project Approval, Mining Lease and EPL for the project which were assessed as part of the audit included:

- Noise Management Plan;
- Blast Management Plan;
- Air Quality Management Plan;
- Water Management Plan (including Site Water Balance, Surface Water and Groundwater Management Plan)
- Rehabilitation Management Plan
- Biodiversity Management Plan
- Heritage Management Plan;
- Ulan Road Strategy;
- Energy Savings Action Plan;
- Greenhouse Gas Minimisation Plan;
- Environmental Management Strategy;
- Mining Operations Plan; and
- Pollution Incident Response Management Plan.

1.3 Structure of the Report

This Independent Environmental Audit Report has been prepared to provide comment on each condition of approval in a tabulated form, with additional discussion where required on specific matters. The tabulated comments on the conditions of approval are contained in the Attachments to this Independent Environmental Audit Report. The Independent Environmental Audit Report sections are:

Executive Summary

Section 1	Introduction
Section 2	Project Description
Section 3	Environmental Approvals and Licenses
Section 4	Agency Consultation and Previous Audit Actions
Section 5	Environmental Management and Performance
Section 6	Conclusions and Recommendations
Attachment A	Project Approval 05_0117 Conditions
Attachment B	Statements of Commitment Project Approval 05_0117
Attachment C	Project Approval 08_0135 Conditions
Attachment D	Statements of Commitment Project Approval 08_0135
Attachment E	Environment Protection Licence No. 12932
Attachment F	Mining Leases 1605, 1606, 1628, 1691 and 1715

1.4 Compliance Tables

This audit assessed the activities for compliance with the intent of the Project Approval, Environment Protection Licence and Mining Lease conditions via site inspections, document review and verification of relevant documentation related to the conditions of approval, expressed in the Attachments to this report as:

Status	Description
Compliant	Where verifiable evidence demonstrates the intent of the elements of the requirements of the regulatory approval and appropriateness of implementation against the Project Approval Condition has occurred.
Compliant Ongoing	The intent and specific requirements of the condition have been met (as above) and the requirements are ongoing for the operation of project.
Administrative Non-compliance	A technical non-conformance with a Project Approval condition that would not result in material harm to the environment (e.g. the submission of a report to government later than required under the approval conditions).
Non-Compliant (Low Risk)	Non-compliance with the potential for moderate environmental consequences, that is unlikely to occur, or, potential for low environmental consequence but is likely to occur.
Non-Compliant (Moderate Risk)	Non-compliance with the potential for serious environmental consequences but unlikely to occur, or, potential for moderate environmental consequence but likely to occur.
Non-Compliant (High Risk)	Non-compliance with the potential for significant environmental consequences, regardless of the likelihood of occurrence.
Not active / Not triggered	A regulatory approval requirement / condition that has an activation or timing that had not been triggered at the time of the audit.
Noted	A statement or note where no assessment of compliance is required.

Any Non-compliance (if identified) will be subject to a risk assessment in accordance with the *Independent Audit Guideline* (DP&E October 2015) and reported in this Independent Environmental Audit Report.

1.5 Audit Protocol

The Independent Environmental Audit generally followed the Audit Methodology procedure (*Independent Audit Guideline* section 4) that involved the review of documentation and monitoring records provided by Moolarben Coal, site inspections and interviews with Moolarben Coal personnel. The information obtained from site inspections and document review was assessed for compliance status with the Project Approval and other environmental approval conditions and environmental performance of the Moolarben Coal Project with the approval conditions. Information evaluation included:

- assessment of Moolarben Coal Mine activities and environmental performance in relation to compliance with the Project Approval and other environmental approval conditions applicable to the project;
- as appropriate, confirmation of conformance with the criteria / standards against which the independent environmental audit has been conducted, where specified in conditions;
- review of relevant Moolarben Coal documentation and monitoring data and observations made during the site inspections and consultation with relevant agencies, was assessed and outcomes collated to ensure that audit findings can be verified and conclusions substantiated;
- risk levels for any non-compliance identified (consistent with the *Independent Audit Guideline* section 4.1 Table 2 assessment) was conducted to rank the risk of issues in relation to environmental harm.

Relevant Government agencies were contacted prior to the audit to obtain an indication of any specific issues considered by the agency to require specific review and comment in the audit and findings. The audit team addressed any agency matters during the audit assessment process.

Government agencies contacted were:

- Department of Planning and Environment
- Environment Protection Authority
- Office of Environment and Heritage
- DPI- Water
- Division of Resources and Energy
- Mid-Western Regional Council

A detailed site inspection of the Moolarben Coal operations was undertaken between 7 and 10 December 2015 by the audit team. The following locations were inspected:

- Open Cut mining operations including OC1 and OC2 and site development for the OC4;
- Rehabilitation of areas where surface disturbance was completed;
- Coal Handling and Preparation Plant and rail loadout area;
- Mining plant and equipment maintenance and laydown areas;
- Bulk fuel and chemical storages areas;
- Surface water management structures and systems;
- Waste management areas including general waste including paper and cardboard recycling systems; waste oils and greases, used filters and oily rags; and scrap metal; and
- Real-time dust, noise and blast monitoring locations;

1.5 Limitations of the Audit

The auditor received complete cooperation from Moolarben Coal Operations staff during the audit. Any documentation not immediately available during the site visit / inspection was provided to the auditors for review subsequent to the site visit.

The findings of the audit are based upon visual observations on the Moolarben Coal Complex site, interviews with site personnel and review of documents and records provided by Moolarben Coal Operations. Opinions presented in this audit report apply to the site as observed at the time of the audit inspection and from information provided by Moolarben Coal personnel. Any changes to this information of which the Trevor Brown & Associates is not aware and has not had the opportunity to evaluate, cannot therefore be considered in this report. The auditor has taken due care to consider all reasonably available information provided during the audit and has taken this information to represent a fair and reasonable characterisation of the environmental status of the site.

The adequacy of strategy/ plans / programs required under the consent were assessed by reference to the requirements of the conditions of approval for Moolarben Coal Complex.

2. Project Description

2.1 Project Development

The Moolarben Coal Complex is located within the western coalfields, approximately 40 kilometres north-east of Mudgee.

The area covered by Moolarben Coal Project Stages 1 and Stage 2 is within the Moolarben Creek valley, in the headwaters of the Goulburn River catchment. The Moolarben Coal Project area is bounded by:

- North - bordered by the Goulburn River;
- East - Goulburn River National Park, Wilpinjong Coal Mine, Munghorn Gap Nature Reserve and mine owned grazing land;
- South – mine owned and privately-owned grazing land, and Munghorn Gap Nature Reserve; and
- West - Ulan village and Ulan Coal Mine, mine owned and privately-owned grazing land. The Ulan village west of the mine comprises residential dwellings, a small rural primary school, one church, commercial premises and a hotel. All of the residences and the majority of vacant freehold land in the village are mine owned. A rural residential development is located approximately 4 km to the southwest of the mine. A small number of farms and scattered homesteads occupy the remainder of the surrounding freehold land.

Following granting of Project Approval 05_0117 on 6 September 2007 by the Minister for Planning under the provisions of the *Environmental Planning and Assessment Act 1979*, development of the approved Stage 1 project that consisted of three open cut mines (OC1, OC2 and OC3); one underground mine (UG4); coal handling and preparation plant (CHPP) and raw and product coal stockpiles; a rail loop and rail loader; and office and workshop support facilities commenced in 2008. The initial development that commenced in 2008 involved the construction and operation of open cut (OC1) and operations and associated infrastructure (administration facilities, workshops, CHPP and rail loop. Between 2013 and 2015 mining activities occurred in OC1 with operations in OC2 commencing in January 2014. Project Approval 05_0117 Modification 9 granted in June 2013 provided for extension of mining within OC1 and OC2 for optimisation of resource recovery.

The Open cut mining of OC1 and OC2 at Moolarben Coal occurred in the Ulan Seam. No development or mining of OC3 or Underground Mine 4 (UG4) occurred between 2008 and 2015.

Stage 2 of the Moolarben Coal Project was granted Project Approval 08_0135 on 30 January 2015 under *Environmental Planning and Assessment Act 1979* section 75J by the Planning Assessment Commission. Development of the Moolarben Coal Project Stage 2 only commenced in September 2015 and will include construction and operation of:

- an open cut mining operation (OC4) extracting up to 12 million tonnes per annum (Mtpa) run-of-mine (ROM) coal and up to 13 Mtpa combined rate with the Stage 1 open cut mines;
- operation of two underground mines (UG1 and UG2) extracting up to 4 Mtpa ROM coal cumulative with the Stage 1 underground mine (UG4);
- construction and operation of the Stage 2 ROM coal facility;
- extension of the use of the existing approved Stage 1 CHPP; and
- development of an out-of-pit waste emplacement area;

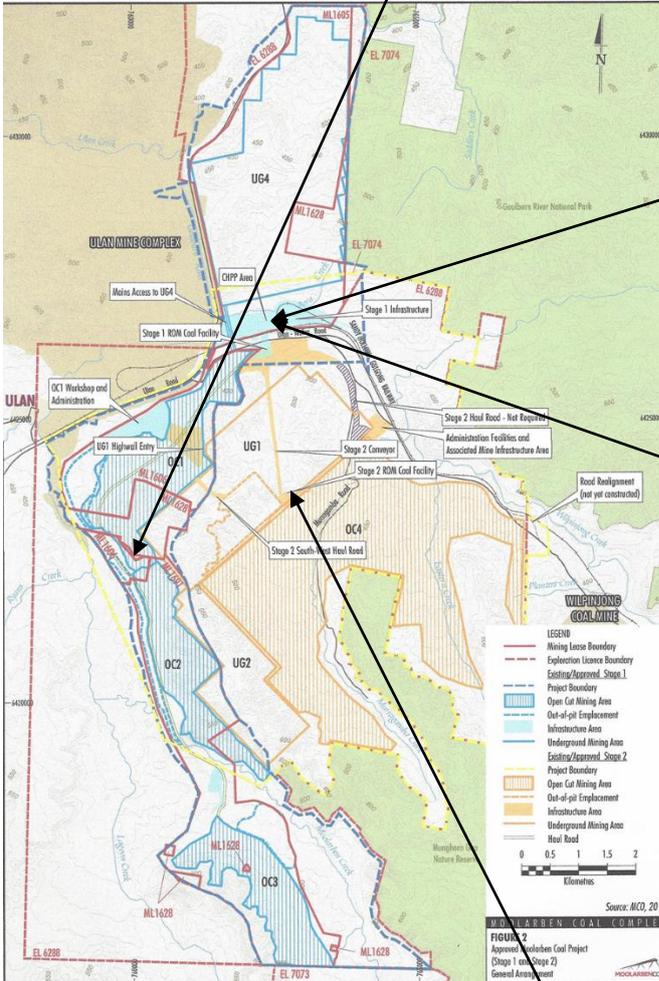
The combined operations of the Moolarben Stage 1 and Stage 2 mines is defined in the Project Approval 08_0135 as the Moolarben Mine Complex.

2.2 Moolarben Coal Project Status – December 2015

The status of the Moolarben Coal Project at the date of this Independent Environmental Audit (i.e. December 2015) was:

- Moolarben Coal Project Stage 1 development had involved the extraction of coal resource from OC1 and OC2 in accordance with Project Approval 05_0117 as modified. (No development or mining of Open Cut 3 (OC3) or Underground Mine 4 (UG4) had occurred between 2008 and 2015).
- Progressive rehabilitation of areas disturbed during development for the Stage 1 infrastructure and overburden emplacement areas of OC1 occurred with vegetative cover establishment and habitat enhancement on the rehabilitated areas. Progressive rehabilitation of disturbed land has occurred in areas of OC1 and the OC2 Bund. The areas disturbed this reporting period are shown in Figure 1.
- Upgrades to the Water Management System and rehabilitation of the constructed bunds around the rail loop occurred during 2014 and 2015 to satisfy EPL condition U4.1 to upgrade the water management system at the premises in accordance with the Moolarben Coal Operations Pty Ltd Stage 1 Open Cut & CHPP Water Management Assessment and Upgrade Proposal Report (Arkhill Engineers, October 2012). The works included an increase in capacity of the CHPP area sediment dams to contain runoff from a 50 year, 24 hour duration rainfall event;; desilting and increase in the capacity of dam SD10; installation of new dams SD10(B) and SD12(B); increase the capacity of "Cockies Dam" including upstream clean water diversion upgrades; installation of clean water diversion around SD14 and removal of stockpiles and remediation of the disturbance area at the CHPP area; and increase the capacity of open cut sediment dam OC1-6.
- ROM coal from the Moolarben Coal Project Stage 1 open cut operations is transported to the ROM stockpiles and directed via conveyor to the CHPP for processing. Product coal is stored on the product coal stockpiles at the CHPP prior to loading onto trains for transport to the Port of Newcastle. All product coal from the Moolarben Coal Project CHPP is transported by rail in accordance with the Project Approval conditions.
- Coarse reject from the CHPP is co-mingled with dewatered fine rejects and transported by conveyor to the Rejects Bin from where it is trucked back to completed areas of the mine development for final disposal within the open pit and overburden emplacement. The rejects are placed in selective areas of the open cut with at least a 5m cover over the rejects in the final landform.

Looking towards OC1 from the rehabilitated out-of-pit overburden emplacements



Moolarben Coal CHPP



Train loading at Moolarben Coal CHPP



Excavator removing overburden in OC2



OC4 establishment of the Run-of-Mine coal facility

3. Environmental Approvals and Licenses

3.1 Project Approval

The Moolarben Coal Project was granted Project Approval 05_0117 on 6 September 2007 by the Minister for Planning under the provisions of the *Environmental Planning and Assessment Act 1979*. There have been eleven (11) approved Modifications to the Stage 1 Project Approval between 2007 and December 2015. Modifications to Project Approval 05_0117 during the period of this Independent Environmental Audit – January 2013 to December 2015 were:

Application Date	Application	Modification Approved	Date Approved
Application submitted Jul 2015	05_0117 MOD 12	Modification to Stage 1 and Stage 2 of the Moolarben Coal Project, to allow for the optimisation of the UG1 underground mining domain. (This application was being assessed concurrently with the proposed MOD 2 to Stage 2 Project Approval 08_0135).	Not approved at the date of this audit
May 2015	05_0117 MOD 11	Minor modifications to Stage 1 and Stage 2 surface operations. This application was assessed concurrently with the proposed Modification to Project Approval 08_0135 Stage 2 -MOD 1.	Jul 2015
Apr 2015	05_0117 MOD 10	Modification to increase ROM production limit from Stage 1 open cut operations from 8Mtpa to 9Mtpa.	Apr 2015
Feb 2009	05_0117 MOD 3	The Stage 2 project required consequential modifications to the Stage 1 Project Approval 05_0117 (Stage 1 Mod 3). MOD 3 allowed Stage 1 to receive and process run-of-mine (ROM) coal from the proposed Stage 2 project; increase throughput of processing, handling and rail loading to 17 Mtpa ROM coal and 13 Mtpa product coals; increase offsite transport of product coal to 13 Mtpa; and extend the approved operating life of Stage 1 infrastructure so that Stages 1 and 2 of the MCP will be fully integrated.	Jan 2015
May 2013	05_0117 MOD 9	Moolarben Coal Project - Stage 1 Optimisation Modification 9 included the: <ul style="list-style-type: none"> - extension of mining within Open Cuts 1 and 2; - construction and operation of additional water management infrastructure; - minor changes to the rehabilitation and final landform; and - extension of the project life by 5 years to 2033. Extension of approved mining into land adjacent to Open Cut 1 and 2, construction and operation of additional water management infrastructure, increased mine life and minor changes to the rehabilitation sequencing and final landform.	16 Jun 2014

The Stage 1 Moolarben Coal Project is operated in accordance with the Consolidated Project Approval 05_0117 dated July 2015 and this Independent Environmental Audit was conducted to assess compliance with conditions of the Consolidated Project Approval and Statements of Commitment Appendix 3.

Moolarben Coal Project Stage 2 was granted Project Approval 08_0135 on 30 January 2015 under *Environmental Planning and Assessment Act 1979* section 75J by the Planning Assessment Commission. Project Approval Stage 2 Modification 1 was granted in July 2015:

Application Date	Application	Modification Approved	Date Approved
Jul 2008	08_0135	Development of a new open cut coal mine and 2 new underground coal mines. The Stage 2 project required consequential modifications to the Stage 1 project approval (Stage 1 Mod 3). The Stage 2 development represents a "Controlled Action" under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act).	30 Jan 2015
May 2015	08_0135 MOD 1	This application was assessed concurrently with the MOD 11 application for Project Approval 05_0117 Stage 1. Minor modifications to Stage 1 and Stage 2 surface operations including: <ul style="list-style-type: none"> • Construction of the OC4 south-west haul road between OC4 and OC1 (and therefore the approved Stage 2 Haul Road would not need to be constructed). Stage 2 MOD 1 • Refinements to associated infrastructure layout at OC4 (wholly located within the approved surface disturbance footprint). 	Jul 2015
Application submitted Jul 2015	08_0135 MOD 2	Modifications to Stage 1 and Stage 2 of the Moolarben Coal Project, to allow for the optimisation of the UG1 underground mining domain (see attached Environmental Assessment). This application will be assessed concurrently with the proposed modification to Stage 1 (05_0117 MOD 12).	Not approved at the date of this audit

3.2 Environment Protection Licence

Environment Protection Licence 12932 was obtained by Moolarben Coal Operations Pty Ltd on 18 August 2008. The following Notices of Variation (NoV) to EPL 12932 were advised between 2013 and December 2015:

Date	NoV No.	Variation to EPL 12932
28 Jul 2015	1531926	<ul style="list-style-type: none"> • EPA varied licence No. 12932 to: • include the schedule activity land-based extractive activity (condition A1.1); • include the ancillary activity crushing, grinding or separating (condition A3.1); • update the premises details (condition A2.1); • alter the location description for dust monitoring PM₁₀ licence point 16 (condition P1.1); • remove DG02 and replace with DG12 in licence point 7 (condition P1.1); • remove TEOM2 and replace with TEOM6 in licence point 15 (condition P1.1); • removal of DG03 being licence point 8 (condition P1.1); • include additional stormwater sediment dams and conceptual stormwater sediment dams (will not be installed within 12 months) with associated water quality discharge limits and monitoring (conditions P1.1, L2.4, and M2.3); • include mine water dam as licence point for monitoring (conditions P1.1 and M2.3);

		<ul style="list-style-type: none"> • include noise monitoring points for residences included in the consents (P1.1); • update conditions L2.5 and L2.6 to include new stormwater sediment dams; • remove discharge volume limit for licence points 5, 22 and 23 and requirement to monitor discharge volume (conditions L3.1 and M7.1); • inclusion of condition relating to discharges from conceptual stormwater sediment dams (condition L3.2); • removal and replacement of condition L5.1; • update the noise limits (condition L5.1); • removal of note following condition L5.1 requiring a Noise Reduction Plan where PSNL are exceeded; • addition of note for noise limits at licence point 44 (condition L5.1); • removal of dot point c) in condition L6.1; • alteration of conditions O6.1, O6.2 and O6.3 to include new stormwater sediment dams; • alter the special frequency number in paragraph 2 of condition M2.4; • alter noise monitoring requirements (condition M9.1) and noise monitoring reporting (condition R4.2); and • alteration of condition U4 to update time frame for completion.
22 Aug 2014	1524488	<p>EPA varied licence No. 12932:</p> <ul style="list-style-type: none"> • Inclusion of a Pollution Study and Reduction Program to upgrade the water management in the area of the rail loop and coal handling and processing plant (CHPP); and • removal of the blast limit (condition L6.6) and monitoring (condition M8.1(ii)) required for blasts within 2 kilometres of Aboriginal rock shelter sites S1MC55 and S1MC56.
20 Dec 2013	1518786	<p>EPA varied licence No. 12932 to:</p> <ul style="list-style-type: none"> • alter the air quality monitoring locations; and • alter the noise monitoring frequency.
22 Mar 2013	150486	<p>EPA varied licence No. 12932:</p> <ul style="list-style-type: none"> • In regard to dust management: <ul style="list-style-type: none"> ○ On 1 February 2012 EPA received report titled Moolarben Coal Particulate Matter Control Best Practice Pollution Reduction Program (the Report) dated 25 January 2012. The EPA has undertaken a detailed review of the Report and found it to be generally compliant with the requirements of Condition U1 Coal Mine Particulate Matter Control Best Practice of the Licence. ○ The EPA has developed a set of Pollution Reduction Programs (PRPs) requiring the implementation of a number of best practice measures to address wheel-generated dust and the handling of overburden. ○ This variation does not authorise a significant increase in environmental impact of the activity authorised or controlled by the licence. ○ The PRP titled Coal Mine Particulate Matter Control Best Practice (condition U1) has been removed following its satisfactory completion. • In regard to water management: <ul style="list-style-type: none"> ○ The water management system design review has been completed as required by condition U2, this condition has been removed. • A number of alterations have been made to water discharge and monitoring requirements including the licence discharge points and volume limits.

3.3 Mining Leases

Mining Leases 1605, 1606, 1628, 1691 and ML1715 were granted pursuant to the provisions of the Mining Act 1992, for periods of 21 years for the purpose of prospecting and mining for coal:

- Mining Lease 1605 granted to Moolarben Coal Mines Pty Limited and Sojitz Moolarben Resources Pty Ltd, dated 20 December 2007. Land Area 1098ha.
- Mining Lease 1606 granted to Moolarben Coal Mines Pty Limited and Sojitz Moolarben Resources Pty Ltd, dated 20 December 2007 dated 20 December 2007. Land Area 495.4ha.
- Mining Lease 1628 granted to Moolarben Coal Mines Pty Limited, dated 24 February 2009. Land Area 260.5ha.
- Mining Lease 1691 granted to Moolarben Coal Mines Pty Limited, dated 23 September 2013. Land Area 900.6ha.
- Mining Lease 1715 granted to Moolarben Coal Mines Pty Limited, Sojitz Moolarben Resources Pty Ltd and Kores Australia Moolarben Coal Pty Ltd, dated 31 August 2015. Land Area 3741ha.

3.4 Water Licences

Moolarben Coal Operations Pty Ltd (MCO) held over 70 groundwater monitoring bores across the project area and surrounding lands prior to November 2015. Moolarben Coal corresponded with DPI-Water on 25 November 2015 in relation to consolidation of the current Monitoring Bore Licences issued under the *Water Act 1912*, located on parcels of land that are owned by Moolarben Coal, are under a land transfer arrangement from Ulan Coal to Moolarben Coal, or are crown land. Following consultation with DPI-Water, all monitoring and test bores were amalgamated into one licence (20BL173935).

Following consultation with DPI-Water, all production bores were consolidated into one licence (20BL172002) for the purpose of Mining under the Water Act 1912, and all excavation into one licence (20BL173923) for the purpose of Mining/Industrial were issued on 26 November 2015 for a combined entitlement of 2,950ML/year.

Moolarben Coal also has a Water Access Licence WAL36340 Category: Aquifer. The Water source is Wollar Creek and water extraction would occur under the Water Sharing Plan - Hunter Unregulated and Alluvial Water Sources dated 2009. The approved Moolarben Coal Share is 218 units of extraction from river, lake or surface water runoff related to the whole water source zone.

3.5 EPBC Approvals

The current Stage 1 mining operations are undertaken in accordance with Approval Decision (EPBC 2007/3297) granted on 24 October 2007 (and varied by notice on 25 February 2009 and 11 May 2010) and (EPBC 2013/6926) granted on 13 November 2014 under the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act). Details of the approvals are shown in the tables below.

Referral Date	EPBC Referral	Variation of Proposal to take Action for Moolarben Coal Project Stage 2	EPBC Approval Date
16 Feb 2007	2007/3297	The establishment of a coal mine and associated infrastructure 40 kilometres east of Mudgee, to generate approximately 10Mtpa of product coal, as described in the referral received under the EPBC Act on 16 February 2007 (EPBC 2007/3297)	24 Oct 2007

Jul 2013	2013/6926	To modify and extend the Moolarben Coal Project (Stage 1)	13 Nov 2014
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A Variation of Proposal to take Action (EPBC 2008/4444) under the EPBC Act for Moolarben Coal Project Stage 2 was accepted on 26 April 2012 and approval granted on 18 May 2015.

Referral Date	EPBC Referral	Variation of Proposal to take Action for Moolarben Coal Project Stage 2	EPBC Approval Date
9 Sep 2008	2008/4444	Development of a new open cut coal mine and 2 new underground coal mines. The proposal represents a "Controlled Action" under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) and was referred to the Department of Sustainability, Environment, Water, Population and Communities for assessment. A Variation of Proposal to take Action (EPBC 2008/4444) under the EPBC Act for the Moolarben Coal Project Stage 2 was accepted on 26 April 2012. The Stage 2 project requires consequential modifications to the Stage 1 project approval (Stage 1 Mod 3).	18 May 2015

4. Agency Consultation and Previous Audit Actions

4.1 Agency Consultation

Consultation with the relevant agencies occurred in accordance with Project Approval 08_0143 Schedule 5 condition 9(b). Responses from the agencies in relation to specific matters raised during consultation are provided below.

4.1.1 Department of Planning and Environment (DP&E)

The DP&E identified the following matters for consideration during the Moolarben Coal Project audit.

Table 4.1.1: Department of Planning and Environment Consultation

DP&E Matter Raised	Audit Finding(s)
Noise emissions and complaints.	Noise emissions from the Moolarben Coal operations have not exceeded the Project Approval noise criteria. Moolarben Coal continue to respond to complainants and have dedicated Mining and Production Environmental Assistants who respond to and report in real time on noise emissions and mine operations at the time of the complaints. Following a request from DP&E, independent noise reviews were undertaken and demonstrated sustained compliance. Jeff Parnell Senior Noise Specialist D&PE indicated no current issues. Noise management appears to be best practice.
Noise increases associated with commencing OC4 and comparisons with EA.	The predicted daytime, evening and night-time noise amenity levels determined for the Environmental Assessment of Stage 2 OC4 development concluded that: <ul style="list-style-type: none"> • No exceedance of the Project Approval noise limits, are predicted during the daytime, evening and night-time in 2016 or 2018 at any school or church. • No exceedance of the relevant amenity PSNL at all privately owned receivers. • No exceedance of the relevant amenity PSNL at all commercial receivers. The noise levels at Goulburn River National Park and Munghorn Gap Nature Reserve are unlikely to exceed the relevant Project Approval noise limit of $L_{Aeq(period)} 50$ dBA. Noise monitoring results for Q3 and Q4 2015 have not exceeded the predicted noise levels or criteria in the Project Approvals.
Surface Dirty water management and discharges	During the audit inspection it was observed that water storages contained adequate freeboard and upgrades to the surface water management system continue to occur around the complex. Upgrades undertaken at the CHPP were observed during the audit. Rainfall runoff from mine disturbed areas is managed via diversions and pipelines to prevent soil erosion and contamination of downstream water sources with sediment laden water. There have been no licensed or unlicensed discharges of mine water or dirty water and there have been no incidents related to contamination of downstream water sources caused by runoff from mine disturbed areas during the audit period. Impacts from the surface water management system are considered to be negligible.

DP&E Matter Raised	Audit Finding(s)
Clean water diversion management	The clean water diversions were observed during the audit inspection, which have been constructed to divert rainfall runoff around the dirty water management system and to prevent soil erosion and sedimentation. Upgrades to the clean water management system are currently being undertaken to coincide with the Project.
Dust emissions and exceedances	Air quality assessment is presented in section 5.5 of this Independent Environmental Audit Report. The audit indicated that Moolarben Coal has been operating in compliance with the conditions of Project Approval 05_0117, Project Approval 08_0135 and EPL 12932, in relation to dust deposition, TSP and PM ₁₀ criteria.
Aboriginal Heritage associated with the commencement of OC4 construction.	Aboriginal heritage surveys and salvage were undertaken progressively in advance of OC4 construction activities in consultation with the Registered Aboriginal Parties and qualified Archaeologists. The Ground Disturbance Process ensures that heritage management actions are completed prior to the approval of disturbance. Survey and salvage activities were well in advance of disturbance activities at the time of the audit.
Timing and definition of areas associated with the relocation of Murragamba Road and infrastructure established to commence construction of OC4 facilities.	The temporary mine infrastructure area located off the Murragamba Road alignment includes an administration office, vehicle parking area and crib room and was constructed in 2015 for the commencement of OC4 site establishment in accordance with State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007. Works undertaken on Murragamba Road were undertaken by Mid-Western Regional Council as the public authority in accordance with the SEPP (infrastructure) in the first half of 2015.

4.1.2 Department of Primary Industries – Water

The Department of Primary Industries – Water (previously NSW Office of Water) specifically requested that the audit consider the following matters related to the Moolarben Coal Project:

Table 4.1.2: Department of Primary Industries – Water Consultation

DPI-Water Matters Raised	Audit Findings
Review Site Water Management Plan/s. The audit should include a review of the currency of plans and compliance with them.	The Moolarben Coal Water Management Plan and sub-plans (Site Water Balance, Surface Water Management Plan and Groundwater Management Plan required under Project Approval 05_0117 Schedule 3 conditions 33(b) and Project Approval 08_0135 Schedule 3 condition 29(e) were approved by DP&E on 31 July 2015. The Water Management Plan and sub-plans have been implemented and the Moolarben Coal operations have demonstrated compliance with the requirements of the plans.
Review metering of water take and assess whether metering complies with license and approval requirements, and any requirements specified in the Site Water Management Plan(s).	Site water balance was reported in AEMRs. Metering was not reviewed on site. The Auditor has no reason to believe that this operation would be non-compliant.

DPI-Water Matters Raised	Audit Findings
	<p>MCO engaged WRM to undertake a review of the Water Balance Model to reflect the current operational planning and demands.</p> <p>An interim monthly water balance is currently being developed by MCO to provide information between model updates, which will be used to provide a range of likely outcomes for wet and dry conditions. This will be reviewed to account for changing mine water inflows and water management infrastructure as mining progresses.</p>
<p>Review of water monitoring (surface water and groundwater). Assess whether water monitoring is being completed in accordance with the project approval and the Site Water Management Plan(s).</p>	<p>Monitoring results presented in AEMRs and monthly monitoring reports.</p>
<p>License/Approval status – ensure all licenses and approvals held under the Water Act 1912 and Water Management Act 2000 are current.</p>	<p>Information detailed in Water Management Plan and Water Licence Report 2014-15, listed all water extraction and groundwater monitoring licences that were current until November 2015.</p> <p>Licences 20BL173923 and 20BL172002 were issued on 26 November 2015 consolidating all previous extraction licences. all monitoring and test bores were amalgamated into one licence (20BL173935) issued 15 December 2015.</p>
<p>Review licence and approval conditions and ensure compliance, particularly in relation to the following groundwater licenses: o 20BL172002 (Mining) o 20BL173923 (Mining/Industrial)</p>	<p>Licences 20BL173923 and 20BL172002 are both current (issued in November 2015) and Moolarben Coal was compliant with all conditions.</p>
<p>Reconcile records of take of water with the relevant Water Access Licenses and Property Accounts to determine if take of water from each water source is within the licensed entitlement for each water source</p>	<p>Water used from borefields over last six years has less than allocation (average use 12.1 ML/year over last six years). Data viewed was reported in the 2013-2014 AEMR and 2014-2015 Water Licensing Report. Open cut groundwater make was not reported in the AEMR or Water Licensing Report. Actual pumping records were not sighted.</p>

4.1.3 Environment Protection Authority

The EPA specifically requested that the audit consider compliance with the approved Noise Management Plan requirements:

EPA Matters Raised	Audit Findings
<p>EPA continues to receive numerous complaints regarding excessive noise from activities at Moolarben. The Moolarben Coal Noise Management Plan includes details of how noise will be monitored, a TARP for responses to elevated</p>	<p>Moolarben Coal has implemented a very detailed real time monitoring, attended monitoring and noise complaints handling system. These items are documented in the Noise Management Plan (NMP). A review of the NMP has been conducted.</p>

EPA Matters Raised	Audit Findings
<p>levels etc. The EPA is interested as to whether the proposed noise monitoring program is being implemented as per the approved management plan and that the Mine is responding according to the Plan in relation to any identified elevated noise levels.</p>	<p>The NMP states that attended monitoring is used to assess compliance with relevant noise impact assessment criteria and the real-time monitoring is used as a management tool to assist Moolarben Coal to take pre-emptive management actions to avoid potential non-compliances.</p> <p>The auditor agrees with this noise management approach. Monitoring locations appear to have been selected appropriately as being representative of residential and other sensitive receivers in the vicinity of mining at the Moolarben Coal.</p> <p>The Auditor has found that Moolarben Coal Complex is currently meeting its obligations under all the DPE Approval noise conditions, Statement of Commitments and EPL 12932.</p>

4.1.4 Office of Environment and Heritage

The OEH specifically requested that the audit consider the following matters related to the Moolarben Coal Project:

OEH Matters Raised	Audit Findings
<p>Have the properties outlined in Table 15 of the Conditions of Consent been secured?</p>	<p>Offset Properties are being secured in accordance with the following mechanisms:</p> <p>1 - Transfer to National Parks Estate:</p> <ul style="list-style-type: none"> • Avisford 1 – Application submitted to NPWS on 4 September 2015. Pending OEH review. NPWS has accepted the property as suitable and NPWS and Yancoal have agreed on the financial payments required. <p>2 Conservation Agreement:</p> <ul style="list-style-type: none"> • Avisford 2 – Conservation agreement between landowner and the NSW Minister for the Environment submitted to OEH on 18 September 2015. – OEH has accepted the property as suitable for a conservation agreement, NPWS supports the application. The Conservation Agreement is currently being reviewed by OEH. <p>3 – ‘Positive Covenant’ and ‘Restriction on Use of Land by a Prescribed Authority’ instrument registered on title:</p> <ul style="list-style-type: none"> • All others (17) properties – Draft terms and conditions for the ‘Positive Covenant’ and ‘Restriction on Use of Land by a Prescribed Authority’ instruments to be registered on title submitted to the DP&E on 23 November. Pending DP&E review. Following consultation with the DP&E an Extension of time request was submitted on 8 December 2015. DP&E advised they would consider the request in 2016. <p>References: ENV_EML_151009 NPWS FW Moolarben Coal Complex - Avisford 1 Offset Property ENV_EML_151211 OEH Fwd CA Agreement for 'Balargorang' ENV_LTR_150427 DPE Moolarben - Extension of Time Offset Security and Conservation Bond.pdf ENV_LTR_151208 DPE Biodiversity Offset Security and Conservation Bond Extension - Dec 2015.pdf</p>

OEH Matters Raised	Audit Findings
<p>Is the regeneration of the Box-Gum woodland areas on track, or is there monitoring in place to determine this.</p>	<p>Monitoring of regeneration areas is undertaken in accordance with the Rehabilitation Management Plan, Biodiversity Management Plan and Biodiversity Offset Management Plan.</p> <p>Box gum woodland revegetation has been undertaken in Offset Area 1 and Offset Area 2, and has included planting of tube stock to supplement natural regeneration. Regeneration of Box gum woodland is also occurring in other offset areas.</p> <p>Eco Logical Australia has been monitoring areas of the Moolarben Stage 1 Biodiversity Offset Areas (BOA's) for five years, and has observed a noticeable increase in tree cover in many parts of the BOAs and that substantial areas of the BOAs have in the past been likely cleared and have now regrown.</p> <p>The Rehabilitation Management Plan was developed in 2015 in consultation with the DP&E, NOW, OEH, the Mid-Western Regional Council (MWRC) and the Community Consultative Committee for the Moolarben Coal Complex and was approved by DP&E in September 2015.</p> <p>The management plans include monitoring of performance measures to assess natural regeneration trends and to inform management actions for assisted regeneration where required. Monitoring of regeneration performance also includes comparisons with analogue sites.</p> <p>Results of monitoring are reported annually in the AEMR's.</p>
<p>Has the 50m buffer between the open cut & Munghorn Gap NR been maintained?</p>	<p>No mining operations are being undertaken within 50m of the Munghorn Gap Nature Reserve. The Munghorn Gap Nature Reserve buffer area is excluded from any mine development or other project related activity in the current approved Mining Operations Plan.</p>
<p>Have the offset requirements for impact to Regent Honeyeater habitat been calculated in accordance with the NSW Biodiversity Offset Policy for Major Projects?</p>	<p>Moolarben engaged Eco Logical Australia (Eco Logical) to calculate the Regent Honeyeater species credits associated with the Stage 2 Project in accordance with the NSW Biodiversity Offset Policy for Major Projects (and associated Framework for Biodiversity Assessment). The species credit calculations for project impacts and that generated by implementation of the offset strategy were submitted to OEH on 31 July 2015 (ENV_LTR_150731 OEH - Regent Honeyeater Credits"). OEH provided review comments (undated) on the species credit calculations and Moolarben is currently considering the comments and preparing a response at the date of this audit (December 2015).</p>
<p>Have the mine rehab objectives changed? Figure 6 of the Moolarben Rehabilitation Management plan provides "indicative" areas of forest and woodland rehabilitation domains. This may have changed to suit the Regent Honeyeater offset requirements.</p>	<p>The Rehabilitation Management Plan was developed in 2015 in consultation with the DP&E, NOW, OEH, the Mid-Western Regional Council and the Community Consultative Committee (CCC) for the Moolarben Coal Complex. Comments from these agencies have been considered and incorporated or addressed where appropriate in the RMP. The objectives of the Rehabilitation Management Plan align with the Regent Honeyeater calculations undertaken and submitted to OEH on 31 July 2015.</p> <p>The Rehabilitation Management Plan was approved by the Department of Industry Division of Resources and Energy. No amendments have been made to the Rehabilitation Management Plan since its approval on 4 September 2015.</p>

OEH Matters Raised	Audit Findings
Have Subsidence Impact Performance Measures been met?	Not triggered. No underground mining had occurred at the date of this audit (December 2015).

4.1.5 Mid-Western Regional Council

No response was received from the Mid-Western Region Council in relation to specific matters to be addressed during the Independent Environmental Audit.

4.2 Previous Audit Action Close-out

Non-compliances identified in the previous Independent Environmental Audit (Umwelt 2013) related to administrative non-compliances associated with submission dates for documents to the government agencies (documents subsequently submitted and approved), or matters related to ongoing operations at the Moolarben Coal Project (these matters have been reviewed as part of the December 2015 audit and environmental performance commented on in this audit report.

The Umwelt Independent Environmental Audit (2013) concluded that *'Moolarben Coal was operating generally in compliance with the terms of its Project Approval.'*

A summary of the noncompliance issues related to the Project Approval 05_0117 to Modification 8, and EPL 12932 and Mining Lease conditions, as identified by Umwelt (2013), are shown in Tables 4.2a (Project Approval) and 4.2b (EPL and Mining Leases).

Table 4.2a: Previous Audit (2013) Non-compliances Project Approval 05_0117 and Current Status

Umwelt Non-compliance Condition	Umwelt Audit Finding	Compliance Status
<p><u>Schedule 2: Condition 1 — Non-compliance</u> The Proponent 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 project.</p>	<p>MCO has generally implemented measures to minimise harm to the environment in terms of air quality, noise, visual amenity, vibration and lighting and has demonstrated a commitment to improving its environmental performance. During the audit site inspection, it was observed that there were generally good management practices across the site, particularly related to the rehabilitation practices implemented at the site.</p>	<p>Current Status – Compliant During the 2015 audit site inspection, it was observed that Moolarben Coal was generally implementing good management practices across the site, particularly related to the noise, blasting, water management and rehabilitation practices.</p>
<p><u>Schedule 3: Condition 2 — Non-compliance</u> The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land, or on more than 25% of any privately-owned land.</p>	<p>Noise exceedances were recorded during the period covered by the audit. Four (4) exceedances were recorded and reported during the 2009 - 2010 period, whilst one (1) exceedance was recorded and reported during the 2010 - 2011 period. It was noted that no</p>	<p>Current Status – Compliant No exceedances of the noise criteria were recorded between January 2013 and December 2015.</p>

Umwelt Non-compliance Condition	Umwelt Audit Finding	Compliance Status
	exceedances were recorded during the 2011 - 2012 period.	
<p><u>Schedule 3: Condition 10 — Non-compliance</u> The Proponent shall prepare and implement a Noise Monitoring Program for the project to the satisfaction of the Director-General.</p>	<p>Whilst the NMP was considered to be generally compliant in terms of preparation, an issue was noted in relation to implementation of the Plan in relation to monitoring locations. However, the auditor noted that the monitoring locations that have been used in the monitoring that has been undertaken were not consistent with the locations identified in Table 9 and Figure 1 of the NMP.</p>	<p>Current Status – Compliant</p> <p>The Noise Management Plan for the Moolarben Coal Project Stage 1 was prepared to satisfy Project Approval 05_0117 Schedule 3 condition 7 in March 2010. The Plan was revised in June 2013 and revisions to include OC2 and OC3, and further revised in May 2015 to include management and mitigation measures for both Stage 1 and Stage 2 management plan and noise monitoring program approved by DP&E on 22 June 2015.</p>
<p><u>Schedule 3: Condition 11 — Non-compliance</u> The Proponent shall ensure that the airblast overpressure level from blasting at the project does not exceed the criteria in Table 5 at any residence on privately owned land.</p>	<p>A review of blasting records for the audit period identified a blast on 8/7/2010 which registered an overpressure of 120.6 at BM1 (Ulan School). This exceeds the maximum blast overpressure of 120 dB specified in the condition. As detailed within the 2009 — 2010 AEMR, MCO undertook a review of blast design parameters following this event and implemented blast design changes in response to the exceedance. There have been no further exceedances of blast criteria at the site and no further action is considered to be required in relation to this non-compliance.</p>	<p>Current Status – Compliant</p> <p>The Blast Management Plan was revised in Version 2 June 2013 to include OC1 and OC2, Version 3 November 2014 to include OC1 and OC2 Extension MOD 9, and Version 4 May 2015 to include management and mitigation measures for both Stage 1 and Stage 2 of the Project. The blasting criteria were met between January 2013 and December 2015 at all sites monitored.</p>
<p><u>Schedule 3: Condition 38 (d) — Non-compliance</u> The Groundwater Monitoring Plan must include: (d) a program to monitor the impacts of the project on base flows to the Goulburn River and associated creeks;</p>	<p>The auditor noted that there was no methodology provided to assess base flow to Goulburn River and tributaries.</p>	<p>Current Status – Compliant Ongoing</p> <p>The current Water Management Plan was developed in consultation with DPI Water, DP&E and EPA and approved by DP&E in July 2015. The Groundwater Management Plan forms part of the Water Management Plan. A program to monitor the impacts and environmental performance are included in Sections. 6, 7, 8 and 10 of the plan.</p>
<p><u>Schedule 3 Condition 41 (a) and (b) — Non-compliance</u> Within 12 months of this approval, the Proponent shall make suitable arrangements to: 41 (a) transfer at least 135 hectares of the White Box Yellow Box Blakely's Red Gum Woodland endangered ecological community to the Minister for Climate Change, Environment and Water to offset, on a 'like for like' basis, the 65 hectares that would be cleared by the project at an offset ratio of 2:1; and 41(b) provide DECCW with funds (which at the discretion of DECCW may include an in-kind contribution) to cover any reasonable</p>	<p>Technically Moolarben is non-compliant with Condition 41 (a) and (b) as the timing requirements of the condition were not met; however, the transfer of lands and provision of funds to the then Department of Environment, Climate Change and Water (DECCW — now OEH) was undertaken in a relatively prompt manner and is considered to be generally in accordance with the consent although technically outside the prescribed 12 months (approximately three weeks) from the date of the approval.</p>	<p>Noted</p> <p>The transfer of lands and provision of funds to the DECCW was undertaken prior to completion of 2012 audit.</p>

Umwelt Non-compliance Condition	Umwelt Audit Finding	Compliance Status
costs associated with the transfer and ongoing management of this land.		
<p><u>Schedule 3: Condition 62(a) and (d) — Non-compliance</u></p> <p>The Proponent shall prepare and implement an Energy Savings Action Plan for the project to the satisfaction of the Director-General. This plan must be:</p> <p>(a) be prepared in consultation with NOW;</p> <p>(b) be prepared in accordance with the Guidelines for Energy Savings Action Plan (DEUS 2005, or its latest version);</p> <p>(c) be submitted to the Director-General prior to carrying out any construction on the site; and</p> <p>(d) include a program to monitor the effectiveness of measures to reduce energy use on site.</p>	<p>The Energy Savings Action Plan (ESAP) for Moolarben was developed in December 2008 for construction activities and approved on 17 December 2008, prior to the commencement of Stage 1 construction activities.</p> <p><i>It is recommended that the ESAP be reviewed to identify any energy saving measures which may be implemented on site, as mining operations have commenced. The ESAP is also to include a program to monitor the effectiveness of the measures to reduce energy use, with the updated plan to be developed in consultation with NOW.</i></p>	<p>Current Status – Administrative Non-compliance</p> <p><u>(The Energy Savings Action Plan is now Project Approval 05_0117 Schedule 3 condition 70)</u></p> <p>No update of the Energy Savings Action Plan has occurred since 2008. A review of the existing Energy Savings Action Plan should be conducted to identify energy saving actions that can be introduced in relation to the maintenance and operation of the vehicle fleet and other mining equipment operating at the mine since the preparation of the initial Energy Savings Action Plan in 2008.</p>
<p><u>Schedule 5: Condition 4 — Non-compliance</u></p> <p>Within 6 days of notifying the Department and other relevant agencies of an exceedance/incident, the Proponent shall provide the Department and these agencies with a written report</p>	<p>For the sample notification reviewed during the audit, a report was noted to have been provided on 11/10/11 for an incident that occurred on 30/09/11. Whilst the written report was submitted, it was submitted 11 days after the incident which is outside of the 6day period specified. This non-compliance is not considered to materially affect the environmental management of the operations and no further action is required. However, MCO should strive to submit future notifications within the 6day period.</p>	<p>Current Status - Compliant</p> <p>The potential Administrative Non-compliance related to reporting time frames is considered by Moolarben Coal for any reporting and if time frames have not been able to be met Moolarben Coal have requested an extension of time from the relevant agency.</p>

Umwelt concluded that generally, MCO has demonstrated a high level of compliance with the conditions of EPL 12932 and Mining Leases 1605, 1606 and 1628. Non-compliances identified were:

Table 4.2b: Previous Audit (2013) Non-compliances EPL and ML and Current Status

Umwelt EPL Non-compliance Condition	Umwelt Audit Finding	Compliance Status
<p><u>EPL Condition L5.1 — Non-compliance</u></p> <p>Noise generated from the premises must not exceed the noise limits in the table below. The locations referred to in the table below are indicated on Project Approval 05_0117 Moolarben</p>	<p>Noise exceedances had been recorded during the period covered by the audit (i.e. 2010 to 2013). Four (4) exceedances were recorded during 2009 - 2010, and one (1) exceedance was recorded during the 2010 - 2011</p>	<p>Current Status – Compliant</p> <p>The Noise Management Plan was revised in June 2013 and revisions to include OC2 and OC3, and further revised in May 2015 to include management and mitigation measures for both Stage 1 and Stage 2 management</p>

Umwelt EPL Non-compliance Condition	Umwelt Audit Finding	Compliance Status
Coal Mine Appendix 5 - Property Numbers.	<p>period. No exceedances were recorded during the 2011 - 2012 period.</p> <p>The attended monitoring locations identified in the NMP to assesses $L_{Aeq,15\text{minute}}$ noise levels were not referenced against all the receiver locations identified in the Project Approval and EPL. If monitoring at all the receiver locations is impractical, EPA may accept alternative means of determining compliance, however, this has not been done and therefore it cannot be demonstrated that MCO has an approved method in place for assessing compliance at all of the receivers specified in the EPL. EPA requires the proponent to either monitor or present an alternative means for determining compliance at all the receiver locations identified in the Project Approval and EPL.</p>	plan and noise monitoring program approved by DP&E on 22 June 2015.
<p><u>Condition L6.3 — Non-compliance</u></p> <p>The airblast overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time at any noise sensitive locations. 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.</p> <p>and</p> <p><u>Mining Lease condition 15(b)</u></p> <p>The lease holder must ensure that the blast overpressure noise level generated by any blasting within the lease area does not exceed 120 dB (linear) and does not exceed 115 dB (linear) in more than 5% of the total number of blasts over a period of 12 months, at any dwelling or occupied premises, as the case may be, unless determined otherwise by the Department of Climate Change and Environment.</p>	<p>A review of blasting records for the audit period identified a blast on 8/7/2010 which registered an overpressure of 120.6 at BM1 (Ulan School). This exceeds the maximum blast overpressure of 120 dB specified in the condition. As detailed within the 2009 — 2010 AEMR, MCO undertook a review of blast design parameters following this event and implemented blast design changes in response to the exceedance. There have been no further exceedances of blast criteria at the site and no further action is considered to be required in relation to this non-compliance.</p>	<p>Current Status – Compliant</p> <p>The Blast Management Plan was revised in Version 2 June 2013 to include OC1 and OC2, Version 3 November 2014 to include OC1 and OC2 Extension MOD 9, and Version 4 May 2015 to include management and mitigation measures for both Stage 1 and Stage 2 of the Project.</p> <p>The blasting criteria were met between January 2013 and December 2015 at all sites monitored.</p>
<p><u>EPL Condition O5.1 – Non-compliance</u></p> <p>All chemicals, fuels and explosives must be handled and stored in a bunded area which complies with the specifications of the relevant Australian Standard and legislative requirements.</p>	<p>Whilst in most areas, adequate bunding and spill management controls were in place, it was noted that the diesel fill point at the Downer EDI Blasting Services compound did not have any secondary containment provided. It was also noted that there were</p>	<p>Current Status - Compliant</p> <p>The Moolarben Coal workshop area was being enlarged and improved at the date of this audit and all fuel areas were adequately bunded and chemical storage was being upgraded.</p>

Umwelt EPL Non-compliance Condition	Umwelt Audit Finding	Compliance Status
	isolated incidents of 44 gallon drums of grease or oils not being stored in bunded areas at the Workshop.	The workshop and compound areas have been designed to meet the requirements of the relevant AS standards, to provide facilities for both Stage 1 and Stage 2 operations.
<p><u>EPL Condition R2.2 — Non-compliance</u> The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.</p>	<p>For the example notification reviewed during the audit, a report was provided to the EPA on 11/10/11 for an incident that occurred on 30/09/11. Whilst the written report was submitted, it was submitted 11 days after the incident which is outside of the day period specified in the condition. This non-compliance is not considered to materially affect the environmental management of the operations and no further action is required. However, MCO should strive to submit future notifications within the day period.</p>	<p><u>Current Status - Compliant</u></p> <p>The potential Administrative Non-compliance related to reporting time frames is considered by Moolarben Coal for any reporting and if time frames have not been able to be met Moolarben Coal have requested an extension of time from the relevant agency.</p>

All audit actions required from the 2013 Independent Environmental Audit have occurred to effect compliance with the Project Approval, EPL and Mining Lease conditions except for the review of the Energy Savings Action Plan. This Administrative Non-compliance remains as an Improvement Opportunity for the Moolarben Coal Complex and a review of current operations should occur with the commencement of Stage 2 operations.

5. Environmental Management and Performance

5.1 Environmental Management Strategy

[Project Approval 05_0117 Schedule 5 condition 1]

[Project Approval 05_0117 Statement of Commitment 4]

[Project Approval 08_0136 Schedule 6 condition 1]

[Project Approval 08_0136 Statement of Commitment 4]

The Environmental Management Strategy prepared to satisfy the requirements of Project Approval 05_0117 Schedule 5 condition 1 and Project Approval 08_0136 Schedule 6 condition 1 was approved on 31 July 2015.

The key environmental management and performance outcomes for the site are summarised in the Environmental Management Strategy Table.

Table 5.1 Environmental Management Strategy vs AS/NZS ISO14001:2015 Elements

ISO 14001:2015 Element	Environmental Management Strategy section
5. Leadership	Section 3.0 Commitment and Leadership
5.2 Environmental Policy	Appendix D – Environment and Community Relations Policy
5.3 Roles responsibilities and authorities	Section 5.1 and Appendix E – Roles and Responsibilities
6. Planning	Section 4 - Planning and Policy
6.1 Action to address risks and opportunities	Included in each specific Environmental Management Plan
6.1.2 Environmental Aspects	Section 2 – Purpose and Scope
6.1.3 Compliance obligations	Section 4.1 – NSW Project Approval, section 4.2 – EPBC Approval, and section 4.3 Licences, Permits and Leases
6.1.4 Planning	Section 4.1 – NSW Project Approval
6.2 Environmental Objectives and Planning	Included in each specific Environmental Management Plan
7. Support	Section 3.0 Commitment and Leadership
7.2 and 7.3 Competence and Awareness	Section 5.6 - Training
7.4 Communication	Section 5.3 – Information Dissemination and section 5.4 Complaints Management and Table 5
7.5 Documented information	Section 5.7 Document control
8. Operation	
8.1 Environmental Management Strategies, Plans and Programs	Section 2, Table 4 - Environmental Management Strategies, Plans and Programs, and Appendix F Environmental Management Plans
8.2 Emergency Preparedness and Response	Section 5.2 - Environmental Emergencies
9.0 Performance evaluation	
9.1 Monitoring and Measurement	Section 6 - Measurement and Evaluation
9.3 Management review	Section 7.0 - Review
10.0 Improvement	
10.2 Non-conformance, Corrective and Preventative Action	Section 6.2 - Compliance
10.3 Continual improvement	Project Approval 05_0117 Schedule 5 condition 2, Project Approval 08_0135 Schedule 6 condition 2

Between 2013 and 2015 the Moolarben Coal Environmental Management System has continued to be developed, implemented and improved including the update of environmental management plans to address the mining extension areas in Open Cut 1 and Open Cut 2 and commencement of development of the approved Stage 2 project.

5.1.1 Conclusion

Environmental Management Strategy **Compliance Status:** **Compliant**

The Environmental Management Strategy prepared for the Moolarben Coal Complex project provides a sound basis for the management of the environmental performance related to the Moolarben Coal operations.

5.2 Management Plans

[Project Approval 05_0117 Schedule 5 condition 3]

[Project Approval 08_0136 Schedule 6 condition 3]

The management plans required for the Moolarben Coal Project to satisfy Project Approval 05_0117 and Project Approval 08_0135 are:

Table 5.2.1: Management Plans Required under Project Approval 05_0117 and Project Approval 08_0135

Project Approval 05_0117	Project Approval 08_0135	Management Plan
Schedule 3, condition 7	Schedule 3, condition 8	Noise Management Plan (NMP)
Schedule 3, condition 15	Schedule 3, condition 16	Blast Management Plan (BMP)
Schedule 3, condition 20A	Schedule 3, condition 22	Air Quality Management Plan (AQMP)
Schedule 3, condition 27	-	Subsidence Management Plan (SMP)
Schedule 3, condition 33	Schedule 3, condition 29	Water Management Plan (WMP)
Schedule 3, condition 36	Schedule 3, condition 39	Biodiversity Management Plan (BioMP)
Schedule 3, condition 39	Schedule 3, condition 46	Heritage Management Plan (HMP)
Schedule 3, condition 56	Schedule 3, condition 47	Ulan Road Strategy
Schedule 3, condition 68	Schedule 3, condition 56	Rehabilitation Management Plan (RMP)
Schedule 3, condition 77	Schedule 4 condition 5	Extraction Plan (EP)
Schedule 5 condition 1	Schedule 6 condition 1	Environmental Management Strategy (EMS)

The Plans were developed generally in accordance with the requirements of the specific conditional requirements in Project Approvals Schedule 3 and addressing Project Approval 05_0117 Schedule 5 condition 3 and Project Approval 08_0135 Schedule 6 condition 3 components.

Table 5.2 provides a summary of the management plan sections addressing Project Approval 05_0117 Schedule 5 condition 3 and Project Approval 08_0135 Schedule 6 condition 3 components.

Table 5.2: Summary of the Management Plan sections addressing Project Approval 05_0117 Schedule 5 condition 3 and Project Approval 08_0135 Schedule 6 condition 3 components

Project Approval 05_0117 Schedule 5 condition 3 and Project Approval 08_0135 Schedule 6 condition 3	Management Plans (section reference)
(a) detailed baseline data	NMP – Section 5 BMP – Section 4.1 AQMP – Section 5 WMP - Appendices 1 to 3 LMP – Section 2 RMP – Section 2 BioMP – Section 3 HMP – Section 3 and 4
(b) description of: (i) statutory requirements (including approvals, licence or lease conditions)	NMP – Section 2 BMP – Section 2 AQMP – Section 2 WMP - Section 2 LMP – Section 3.2 and section 5.2 RMP – Section 3.2 BioMP – Section 2 HMP – Section 2
(ii) limits or performance measures/criteria (iii) specific performance indicators	NMP – Section 4 BMP – Section 3 AQMP –Section 4 WMP - Appendices 1 to 3 LMP – Section 3.26 and section 5.5 RMP – Section 3.26 BioMP – Section 10 HMP – Section 8
(c) measures to be implemented to comply with the statutory limits, or performance measures /criteria	NMP – Section 7 BMP – Section 6 AQMP – Section 6 WMP - Appendices 1 to 3 LMP – Section 3 RMP – Section 3 BioMP – Section 10 HMP – Section 5 and section 6
(d) program to monitor and report (i) impacts and environmental performance; (ii) effectiveness of management measures	NMP – Section 8 BMP – Section 7 AQMP – Section 7 and section 11 WMP - Appendices 1 to 3 LMP – Section 3.25 and section 5.6 RMP – Section 3.25 BioMP – Section 8 to section 10 HMP – Section 5, 6 and 11
(e) contingency plan	NMP – Section 9 BMP – Section 9.1 AQMP – Section 9.1

Project Approval 05_0117 Schedule 5 condition 3 and Project Approval 08_0135 Schedule 6 condition 3	Management Plans (section reference)
	WMP - Appendices 1 to 3 LMP – Section 3.3 RMP – Section 3.3 BioMP – Section 11 HMP – Section 9
(f) program to investigate and implement ways to improve environmental performance of the project over time	NMP – Section 10 BMP – Section 8 and section 10 AQMP – Section 10 WMP - Appendices 1 to 3 LMP – Section 3.3 and section 5.6 RMP – Section 3.3 BioMP – Section 13 HMP – Section 10
(g) protocol for managing and reporting any: (i) incidents; and	NMP – Section 11.1 BMP – Section 11.1 AQMP – Section 11.2 WMP - LMP – Section 8 RMP – Section 8 (LMP) BioMP – Section 14 HMP – Section 11
(ii) complaints;	NMP – Section 11 BMP – Section 11 AQMP – Section 11.1 WMP - Appendices 1 to 3 LMP – Section 7 RMP – Section 7 BioMP – Section 14 HMP – Section 11
(iii) non-compliances with statutory requirements;	NMP – Section 8.2.5 and section 11 BMP – Section 11 AQMP – Section 11 WMP - Appendices 1 to 3 LMP – Section 3.2 and section 5.2 RMP – Section 3.26 BioMP – Section 10 HMP – Section 11
(iv) exceedances of the impact assessment criteria and/or performance criteria;	NMP – Section 8.2.3 and section 11 BMP – Section 11 AQMP – Section 8 and section 11 WMP - Appendices 1 to 3 LMP – Section 5.6 BioMP – Section 14 HMP – Section 11
(h) a protocol for periodic review of the plan	NMP – Section 10.2 BMP – Section 10.2

Project Approval 05_0117 Schedule 5 condition 3 and Project Approval 08_0135 Schedule 6 condition 3	Management Plans (section reference)
	AQMP – Section 10.2 WMP - Section 4 LMP – Section 6.1 RMP – Section 6.1 BioMP – Section 13.2 HMP – Section 10

5.2.2 Conclusion

Management Plans	Compliance Status	Compliant
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The environmental management plans for the Moolarben Cola Project have been prepared in accordance with Project Approval 05_0117 Schedule 5 condition 3 and Project Approval 08_0135 Schedule 6 condition 3. The management plans provide adequate procedures and programs to meet the environmental performance requirements of the Project Approvals granted for the Moolarben Coal Complex project activities and operations.

5.3 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

Moolarben Coal is required to review the environmental performance of the project in accordance with Project Approval 05_0117 Schedule 5 condition 4, and Project Approval 08_0135 Schedule 6 condition 4, and submit an Annual Review to the Secretary of DP&E.

Moolarben Coal has prepared an annual review in the form of an Annual Environmental Management Report (AEMR) for 1 September 2012 to 31 August 2013, and 1 September 2013 to 31 December 2014. The current Annual Environmental Management Report will cover the period 1 January 2015 to 31 December 2015.

Project Approval 05_0117 Schedule 5 condition 4, and Project Approval 08_0135 Schedule 6 condition 4, outline the requirements to be addressed in the annual review:

Condition 4	AEMR (Annual Review) section	Compliance Status
a) describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the next year;	Section 2 – Activities during the Reporting Period; and Section 6.0 Activities Proposed for the Next AEMR Period	Compliant
(b) include a comprehensive review of the monitoring results and complaints records of the project over the previous calendar year, which includes a comparison of these results against: <ul style="list-style-type: none"> the relevant statutory requirements, limits or performance measures/criteria; 	Section 3 – Environmental Monitoring and Performance provides: <ul style="list-style-type: none"> a comprehensive review of the monitoring results; records of complaints over the previous calendar year; a comparison of results against: 	Compliant

Condition 4	AEMR (Annual Review) section	Compliance Status
<ul style="list-style-type: none"> • the monitoring results of previous years; and • the relevant predictions in the EA; 	<ul style="list-style-type: none"> ○ relevant statutory requirements, limits or performance measures/criteria; ○ previous monitoring data and Environmental Assessment predicted levels 	
(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;	Section 3 – Environmental Monitoring and Performance identifies any non-compliance under each environmental aspect.	Compliant
(d) identify any trends in the monitoring data over the life of the project;	Section 3 – Environmental Monitoring and Performance identifies trends in monitoring data where relevant	Compliant
(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and	Section 3 – Environmental Monitoring and Performance identifies discrepancies between the predicted impacts in the Environmental Assessments and actual impacts of the project	Compliant
(f) describe what measures will be implemented over the next year to improve the environmental performance of the project.	Section 3 – Environmental Monitoring and Performance outlines proposed measures will be implemented over the next year to improve the environmental performance	Compliant

5.3.1 Conclusion

Annual Review **Compliance Status** **Compliant Ongoing**

The format and content of the annual review, titled Annual Environmental Management Report, prepared by Moolarben Coal to satisfy Project Approval 05_0117 Schedule 5 condition 4 and Project Approval 08_0135 Schedule 6 condition 4, presents a detailed annual review of the environmental performance of the project that generally conforms with the format required by the Project Approvals. The content of the Annual Environmental Management Report provides an accurate reporting of the status and data for the operations of the project for the periods covered by the documents.

Recommendation – Annual Review:

It is recommended that future Annual Reviews be prepared with consideration of the format and content of the recently released Annual Review Guidelines (October 2015).

5.4 Noise¹

- [Project Approval 05_0117 Schedule 3 condition 1 to 7]
- [Project Approval 05_0117 Statement of Commitment 5, 18]
- [Project Approval 08_0136 Schedule 3 condition 1 to 8]
- [Project Approval 08_0136 Statements Commitment 11 to 13 and 15]
- [Environment Protection Licence 12932 condition L5]

¹ John Wasserman, Wilkinson Murray

5.4.1 Noise Management Plan

[Project Approval 05_0117 Schedule 3 condition 7]

[Project Approval 08_0136 Schedule 3 condition 8]

The Noise Management Plan was prepared for the Moolarben Coal Project to satisfy Project Approval 05_0117 Schedule 3 condition 7 in March 2010. The Noise Management Plan was revised in June 2013 to include OC2 and OC3, and further revised in May 2015 to include management and mitigation measures for both Stage 1 MOD 9 and Stage 2. The Noise Management Plan was submitted to the Secretary for approval in March 2015 and approved on 22 June 2015.

The NMP describes the management of noise at the Moolarben Coal Complex (i.e. Stage 1 and Stage 2 of the Moolarben Coal Complex). The Noise Management Plan states that attended monitoring is used to assess compliance with relevant noise impact assessment criteria, and the real-time monitoring is used as a management tool to assist Moolarben Coal to take pre-emptive management actions to avoid potential non-compliances. (The auditor agrees with this noise management approach).

5.4.2 Environmental Assessment Predictions and Statements of Commitment

[Environmental Assessment Moolarben Coal Project MOD 9 to 11]

[Environmental Assessment -Moolarben Coal Project Stage 2, March 2009]

[Preferred Project Report, Stage 2, January 2012]

[Environmental Assessment - OC4 South-West Modification MOD 1 April 2015]

5.4.2.1 Environmental Assessment Moolarben Coal Project

[Environmental Assessment Moolarben Coal Project MOD 9 Stage 1 Optimisation Modification]

The Environmental Assessment Moolarben Coal Project MOD 9 Stage 1 Optimisation Modification under Section 75W of the EP&A Act enabled the extension of mining within Open Cuts 1 and 2, the construction and operation of additional water management infrastructure, and a minor change to the rehabilitation sequencing and final landform. MOD 9 assessed cumulative noise impact assessment with existing noise emissions from Ulan and predicted Wilpinjong Coal Mines.

The operational noise assessment of the optimised mine plans predicted that during adverse weather conditions for all assessment periods and all stages of the mine life with all reasonable and feasible mitigation implemented, the majority of assessment locations will not experience noise levels above the Project Approval 05_0117 noise impact assessment criteria.

Six dwellings are predicted to experience noise levels between 1 and 5dB(A) above the Project Approval 05_0117 noise impact assessment criteria that place these locations in a potential noise management zone. Residence 63 is currently listed in Project Approval 05_0117 Schedule 3 condition 8, and is subject to a negotiated agreement with Moolarben Coal Operations.

No assessment locations were predicted to be in a potential noise acquisition zone during adverse weather conditions for all assessment periods and stages of the mine life.

The assessment found that one private landholders was predicted to experience noise levels of greater than 40dB(A) on more than 25% of their land area and a number of lots on two privately owned properties (consisting of six (6) Lots that are expected to experience noise levels greater than 40dB(A) on more than 25% of the Lot land area when Open Cut 3 is being developed.

The Ulan Public School is predicted to receive noise levels below 35dB(A) internal noise during calm and adverse meteorological conditions.

The Environmental Assessment for Project Approval 05_0117 MOD 11 and comparison with approved Moolarben Coal Complex project concluded that:

“The Modification would not result in new predicted exceedances of the Project Approval Noise Limits. In summary, the predicted daytime, evening and night-time noise amenity levels show that:

- *No exceedance of the Project Approval noise limits, are predicted during the daytime, evening and night-time in 2016 or 2018 at any school or church.*
- *No exceedance of the relevant amenity PSNL at all privately owned receivers.*
- *No exceedance of the relevant amenity PSNL at all commercial receivers.*

Based on the outer envelope night-time LAeq(15minute) intrusive noise contours for Years 2016 and 2018 the noise levels at Goulburn River National Park and Munghorn Gap Nature Reserve are unlikely to exceed the relevant PNSL (and Project Approval noise limit) of LAeq(period) 50 dBA.”

Statements of Commitment in relation to noise management expressed in Consolidated Project Approval 05_0117 Appendix 3 for Stage 1 of the Moolarben Coal Project were:

SoC No.	Statement of Commitment – Noise Consolidated Project Approval 05_0117	Comment on Implementation	Compliance
20	<p>Noise</p> <ul style="list-style-type: none"> • Management and monitoring of noise will continue to be undertaken in accordance with an approved Noise Management Plan, including proactive and reactive management. • MCO further commits to: <ul style="list-style-type: none"> - Limiting northern borefield construction hours from 7am to 6pm Monday to Friday (inclusive). - Limiting surface water management infrastructure upgrade construction hours from 7:00am to 5:00pm Monday to Saturday (inclusive). - Fitting haul trucks with noise attenuation equipment to meet sound power levels assumed in the Stage 1 EA and subsequent noise Impact assessments - Specifying sound power levels in supply contracts for mobile plant and equipment, where appropriate. - Fitting northern borefield water supply/dewatering bores with submersible pumps. - Use of a temporary power supply generator located near the borefield 	<ul style="list-style-type: none"> • Management and monitoring of noise has occurred in accordance with an approved Noise Management Plan. • MCO further commits to: <ul style="list-style-type: none"> - Northern borefield construction only occurred between 7am to 6pm Monday to Friday. - Surface water management infrastructure upgrade construction hours only occurred between 7:00am to 5:00pm Monday to Saturday. - All haul trucks have noise attenuation equipment fitted to meet sound power levels assumed in the Environmental Assessment Stage 1 - Sound power levels have been specified in supply contracts for mobile plant and equipment; - Temporary power supply generator infrastructure is to be installed near the borefield pipeline outlet, at least 4km from the nearest private residence prior to the commencement of dewatering operations. - Awareness of best practice noise mitigation technologies and alternative 	<p>Compliant</p>

SoC No.	Statement of Commitment – Noise Consolidated Project Approval 05_0117	Comment on Implementation	Compliance
	<p>pipeline outlet, at least 4km from the nearest private residence, unless power is provided from the electricity network.</p> <p>- Maintaining awareness of best practice noise mitigation technologies and alternative operating methodologies, and continuing to investigate the potential for further noise reductions to the haul truck fleet through potential additional noise attenuation and mitigation opportunities (such as Duratray). - Designing and locating the haul roads behind earthen bunds as far as practically possible.</p>	<p>operating methodologies, has occurred for all Moolarben Coal personnel and further noise reductions to the haul truck fleet through noise attenuation and mitigation opportunities (including fitting of Duratrays).</p> <p>- Design and location of the haul roads has occurred behind earthen bunds where practicable.</p>	

5.4.2.2 Environmental Assessment -Moolarben Coal Project Stage 2

Environmental Assessment -Moolarben Coal Project Stage 2, and Preferred Project Report predicted that the highest construction noise level was LAeq 24 dB at Receiver 4 (MCM owned). As this result is more than 10 dB below the relevant criterion, it is not possible for the predicted construction noise in addition to any complying operational noise level to result in an exceedance. The logarithmic addition of noise levels more than 10 dB apart, provides no change to the higher value.

The project specific noise levels (PSNL) (i.e. criteria for a particular industrial noise source or industry is the lower of either the intrusive criteria or amenity criteria) were predicted to be exceeded by 1 to 2 dBA at a small number of private receivers during Year 2 of the OC4 development. All other private receivers are predicted to receive noise emission levels less than the intrusive criteria.

An assessment of cumulative noise impacts with Ulan Coal Mine and Wilpinjong Coal Mine indicated that no properties were predicted to be impacted by cumulative noise.

Statements of Commitment in relation to noise management expressed in Project Approval 08_0135 Appendix 3 for Stage 2 of the Moolarben Coal Project were:

SoC No.	Statement of Commitment – Noise Project Approval 08_0135	Comment on Implementation	Compliance
11	MCM will use its best endeavours to implement industry best practice noise control and management measures to minimise the noise impacts of the MCC.	The Noise Management Plan has been implemented and noise mitigation and management measures are practised to reduce noise emissions from the Moolarben Coal Complex operations.	Compliant Ongoing
12	MCM will proactively manage its operations to ensure noise impacts are within the worst case predicted noise envelope.	Management of the operations at the Moolarben Coal Complex occurs to keep noise emissions within the predicted worst case modelled levels at sensitive receivers.	Ongoing
13	MCM will ensure noise monitoring is implemented to determine and manage the contribution to cumulative mine noise from the MCC at Property	Noise monitoring is conducted in accordance with the Noise Management Plan noise monitoring program with quarterly attended noise surveys and real-	Compliant Ongoing

SoC No.	Statement of Commitment – Noise Project Approval 08_0135	Comment on Implementation	Compliance
	258, including implementing at least quarterly attended noise monitoring and installing a directional noise monitor in the vicinity of the property in conjunction with the Ulan Mine, unless monitoring indicates there is no noise impact from the MCC at this property.	time directional noise monitors located to indicate the potential source(s) from the Moolarben Col and Ulan Coal operations.	
15	The sound power of the conveyor used in the NIA will be provided to equipment manufacturers and suppliers to help ensure that the conveyor is maintained at these levels during operations.	Conveyors used (at the CHPP and Stage 12 operations) and being installed at the Moolarben Coal Complex for Stage 2 operations are enclosed and installed to the supplier specifications.	Compliant Ongoing

5.4.3 Noise Management Plan Commitments

Noise management measures outlined in the Noise Management Plan have been implemented at the Moolarben Coal Complex:

- Awareness and understanding of noise issues is included in site inductions for all staff, contractors and visitors to the Moolarben Coal Complex.
- Weather conditions will be monitored and operational changes will be reviewed to avoid or reduce noise impacts where adverse conditions are predicted;
- All machinery and plant used on site will be maintained regularly to minimise noise generation.
- Operation of some support fleet during the daytime only;
- Procurement of sound attenuated principal equipment.
- Use of available Dura Tray fleet in noise onerous areas;
- Use of targeted acoustic bunding around the site (specifically targeting haul roads);
- OC4 out of pit emplacement of waste rock operations will occur at relatively low elevations during evening and night time periods, utilising main dump shielding towards Cooks Gap receivers; Adopting multilevel dumping operations where feasible.
- The volume of reversing sirens and start-up alarms will be reduced to the minimum practicable level (while still complying with coal mine safety regulations) and the least intrusive type of reversing alarms will be used.
- Noise monitoring will include a real-time and attended monitoring of mine generated noise.

5.4.4 Noise Criteria

[Project Approval 05_0117 Schedule 3 conditions 1]

[Project Approval 08_0135 Schedule 3 condition 3]

[EPL 12932 condition L5.1]

The noise criteria for the Moolarben Coal Complex are specified in EPL 12932 condition L5.1, Project Approval 05_0117 Schedule 3 conditions 1- *Table 1: Noise criteria dB(A)* and Project Approval 08_0135 Schedule 3 condition 3 - *Table 3: Noise criteria dB(A)*.

Table 5.4.4: Moolarben Coal Noise Criteria (Project Approvals and EPL)

EPL Point No./ Project Approvals Land No.	Day	Evening	Night	
		LAeq(15min)		LA1(1min)
Point 40 / Residence 30 and 63	39	39	39	45
Point 41 / Residence 70	37	37	37	45
Point 42 / Residence 75	36	36	36	45
Point 47 / Residence 31	36	36	36	45
All other privately owned residences	36	35	35	45
Ulan Primary School	35 (internal) when in use			-
Ulan Anglican Church and Ulan Catholic Church	35 (internal) when in use			-
Goulburn River National Park Munghorn Gap Nature Reserve	50			-

5.4.4.1 Real Time Noise Monitoring Response Protocol

The real time noise monitors have been programmed to trigger alarms under certain conditions.

The Noise Management Plan outlines response triggers for the real-time noise monitoring stations. When the trigger has been reached a SMS alarm is sent to operational personnel and members of the Environment and Community Department. These alarms appear to have been set appropriately and the triggers are managed by the Open Cut Examiner (OCE).

Moolarben Coal have four (4) permanent Mine Production Environment Assistants (MPEA's) to manage noise for the OCE and each staff member is trained appropriately in noise management related to operations. The staff document any triggers and record their response. Initial responses to the MPEA's appear positive.

5.4.4.2 Meteorological Forecasting and Proactive Noise Management

Moolarben Coal operate two predictive models that are used in conjunction with real-time noise monitors as part of the comprehensive noise management system.

Predictive meteorological forecasting (Environmental Forecasting System) is used to predict the presence of favourable or unfavourable conditions based on meteorological data and predictive noise level forecasting (SoundAdvice). The system predicts noise levels at nearby receivers based on meteorological conditions, operating locations and equipment information.

The forecast systems employed by Moolarben Coal would be considered as best practise noise management for extractive industries. Noise Impact Assessment Criteria are set for day, evening and night time periods to protect the amenity of neighbouring residents. Impact Assessment Criteria are expressed as LA1eq (15min).

5.4.5 Noise Monitoring Program

The Noise Management Plan states that attended monitoring is used to assess compliance with relevant noise impact assessment criteria, and the real-time monitoring is used as a management tool to assist Moolarben Coal to take pre-emptive management actions to avoid potential non-compliances. (The auditor agrees with this noise management approach). Attended noise monitoring commenced at Winchester Crescent in Q4 2013 with monitoring undertaken monthly during night time only. Attended noise monitoring is undertaken at the following locations on a monthly or quarterly basis (as indicated in Table 5.4.5).

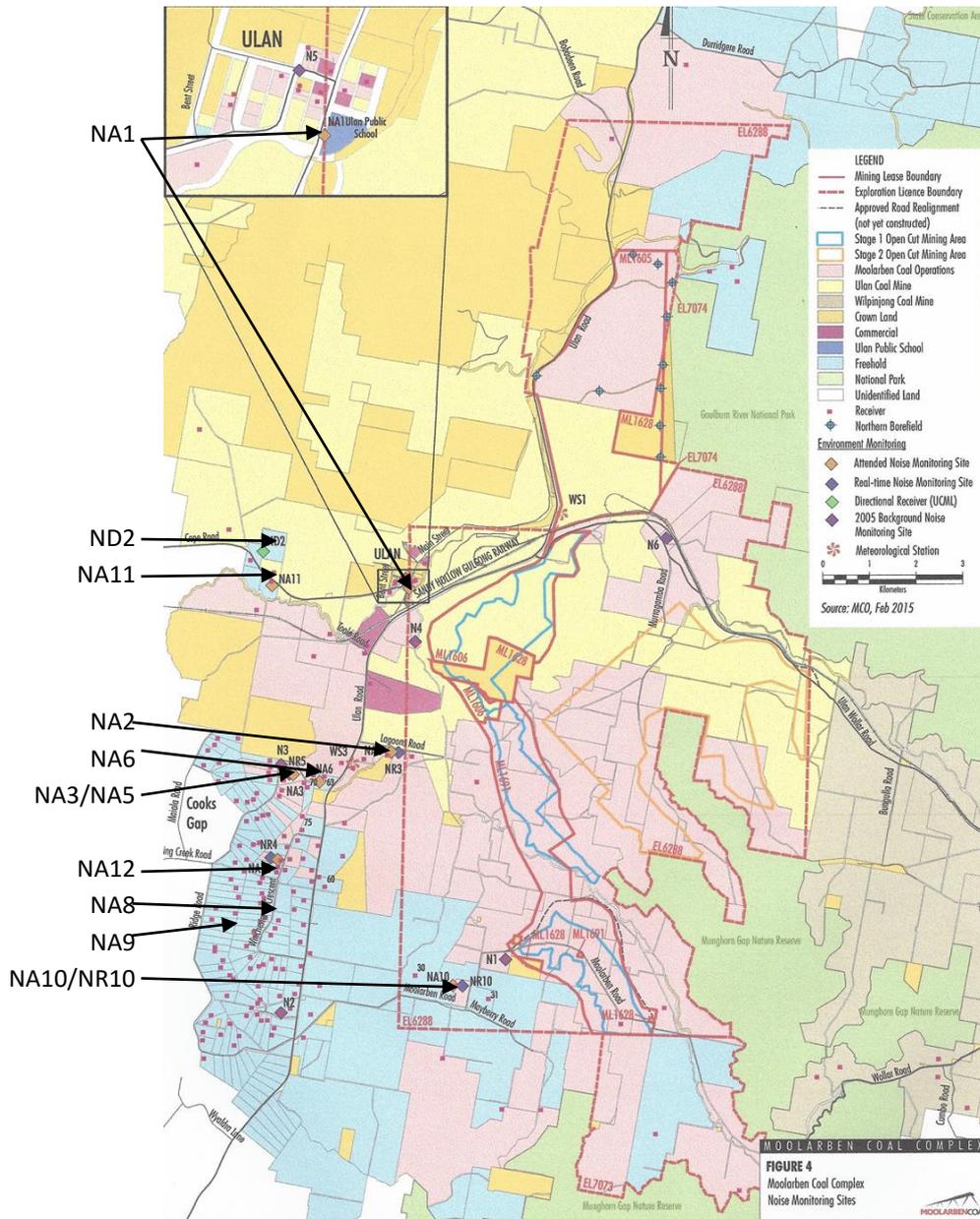


Figure 5.4.5: Noise Monitoring Sites - Moolarben Coal

Table 5.4.5: Attended Noise Monitoring Locations – Moolarben Coal Project

Site No.	Site Location	Monitoring Frequency
Attended Noise Monitoring		
NA1	Ulan Public School	Monthly Monitoring
NA6	Lower Ridge Road	Monthly Monitoring
NA11	Cope Road (Receiver 258)	Quarterly Monitoring
GRNP	Goulburn River National Park	Quarterly Monitoring
MGNR	Munghorn Gap Nature Reserve	Quarterly Monitoring
NA2	Lagoons Road	Annual Monitoring
NA3	Upper Ridge Road (Receiver 176)	Annual Monitoring
NA10	Moolarben Road (Receiver 28)	Annual Monitoring
NA12	Winchester Crescent	Annual Monitoring

Site No.	Site Location	Monitoring Frequency
Real-time Monitoring		
ND2	Cope Road (Receiver 258)	Directional Noise Monitor
NR3	Lagoons Road	Real-time Monitor
NR4	Winchester Crescent	Real-time Monitor
NR5	Upper Ridge Road (Receiver 176)	Real-time Monitor
NR10	Moolarben Road (Receiver 28)	Real-time Monitor

(Auditor Note: Monitoring locations have been selected appropriately as being representative of residential and other sensitive receivers in the vicinity of mining at the Moolarben Coal Complex. The monthly attended monitoring and the real time continuous monitoring would be considered as being best practise noise manage for extractive industries).

5.4.6 Noise Monitoring Results

Monthly and quarterly attended noise monitoring was conducted between January 2013 and December 2015 at NA1, NA2, NA3, NA6, NA8, NA9, NA10, NA11 and NA12 as specified the Noise Management Plan as current at the time.

Measured operational levels during the monitoring program are compared to the predicted levels in the Environmental Assessments under the relevant meteorological conditions and criteria specified in the Project Approval 05_0117 Schedule 3 condition 3, Project Approval 08_0135 Schedule 3 condition 5 and EPL 12932 condition L5.3.

Noise monitoring results between January 2013 and December 2015 indicated compliance with the noise criteria in the Project Approvals and EPL. Noise levels were also generally less than the predicted noise levels at the monitoring locations expressed in the Environmental Assessments at all sites except the Ulan Public School where there was occasional exceedance of the $LA_{eq(15 \text{ minute})}$ criteria by less than 2dBA. (No noise complaints were received from Ulan Public School in relation to noise between January 2013 and December 2015).

5.4.7 Community Complaints

Noise complaints during the January 2013 to December 2015 period were received from residents in the Ridge Road / Winchester Crescent/ Moolarben Road / Ulan Road area to the south and west of the Moolarben Coal operations.

Moolarben Coal introduced the permanent 24hour per day roles of Mining and Production Environmental Assistants (MPEA) for the Moolarben Coal Complex to investigate noise complaints from the community and to provide immediate feedback to the mining operations personnel to implement mitigation measures where required, to specifically address the nature/cause of the complaint(s).

Noise complaints received by Moolarben Coal between January 2013 and December 2015 were:

Reporting Period	No. of Noise Complaints	Total No. of Complaints	Comment
2012-2013	117	120	55% of noise complaints received from one (1) resident
2013-2014	239	256	37% of noise complaints received from one (1) resident
2015 (Jan to Dec)	274	286	31% of noise complaints received from one (1) resident

Moolarben Coal continue to respond to all complaints and have dedicated MPEA's who respond to and report in real time on noise emissions and mine operations at the time of the complaints.

Following a request from DP&E, independent noise reviews were undertaken and demonstrated sustained compliance of the Moolarben Coal operations with the noise assessment criteria in the Project Approvals.

5.4.8 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 3.14 reports on noise management during the AEMR reporting period. Noise Real-Time response triggers (section 3.14.1 Table 56) and response management actions (section 3.14.1 Table 56), noise criteria and predicted levels for day, evening and night at receivers (section 3.14.2 and Table 58), quarterly monitoring results (section 3.14.2 and Tables 59 to 74), comparison of results to previous noise monitoring and predicted levels (section 3.14.3) and activities for the next reporting period (section 3.13.4).

The AEMR provides a detailed and valid representation of the status of environmental management and monitoring data and review of environmental performance of the Moolarben Coal Complex in relation noise emissions.

5.4.9 Improvement Opportunities

The introduction of the role of Mining and Production Environmental Assistants (MPEA's) for the Moolarben Coal Complex is considered a positive response by the company to the investigation of community complaints. The initial responses to the MPEA involvement and the immediate feedback to the mining operations personnel to implement mitigation measures specifically to address the nature of the complaint(s) where required, appears to be positive from the community. The use of the MPEA to respond to community complaints and report directly to the mining operations personnel on the status of the complaint in relation to operations activities noise emissions, is to be commended and should continue, to provide the community with an evident rapid response mechanism to noise management and mitigation.

5.4.10 Conclusion

Noise Management	Compliance Status	Compliant Ongoing
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The Noise Management Plan for the Moolarben Coal Complex (Stage 1 and Stage 2) was approved in July 2015 and has been implemented for the project. Moolarben Coal has implemented a very detailed real time monitoring, attended monitoring and complaints handling system for noise.

The Auditor has found that Moolarben Coal Complex is currently meeting its obligations under all the Project Approval noise conditions, Statements of Commitment and EPL 12932 conditions.

The Moolarben Coal complaints response procedure is consistent with best practice and with the use of the Mining and Production Environmental Assistants providing real time investigation and advice to the mine operations personnel on noise emissions from the mine activities, is considered to exceed the procedures/protocols implemented at other extractive industry projects in NSW.

5.5 Blasting

[Project Approval 05_0117 Schedule 3 condition 8 to 15]
[Project Approval 05_0117 Statement of Commitment 4]
[Project Approval 08_0136 Schedule 3 condition 9 to 16]
[Project Approval 08_0136 Statements Commitment 14 and 16]
[Environment Protection Licence 12932 condition L6]

5.5.1 Blast Management Plan

[Project Approval 05_0117 Schedule 3 condition 15]
[Project Approval 08_0136 Schedule 3 condition 16]

The Blast Management Plan for Moolarben Coal was prepared with input from SLR Consulting Australia Pty Ltd to satisfy Project Approval 05_0117 Schedule 3 condition 15 in March 2010, with updates occurring in June 2013 (OC2 and OC3 included) and November 2014 (to include Open Cut1 and Open Cut 2 Extension Areas MOD 9). The Blast Management Plan was prepared in May 2015 to include management and mitigation measures for both Stage 1 and Stage 2 of the project in accordance with Project Approval 08_0136 Schedule 3 condition 16 requirements.

The Blast Management Plan describes the management of blasting associated with the open cut operations (including management of overpressure, vibration, flyrock and fume) at the Moolarben Coal Complex.

The Blast Management Plan requires a pre-blast environmental assessment be undertaken prior to a blast considering meteorological conditions.

The BMP considers fumes and uses an environmental forecasting model as part of the blast management system. Blast fume is managed in accordance with MCO's Blast Fume Management Strategy (Moolarben Coal Document No. ENV_MCO_PN_0033).

The public are notified of blasting through methods such as newspaper advertisements, direct contact with residents, signs and the Moolarben Coal website.

A Road Closure Procedure for blasting has been developed to the satisfaction of Mid-Western Regional Council.

5.5.2 Environmental Assessment Predictions and Statements of Commitment

[Environmental Assessment Moolarben Coal Project MOD 9 to 11]
[Environmental Assessment -Moolarben Coal Project Stage 2, March 2009]
[Preferred Project Report, Stage 2, January 2012]
[Environmental Assessment - OC4 South-West Modification MOD 1 April 2015]

Blasting impacts were assessed in the Environmental Assessment Stage 1 MOD 9 report and Environmental Assessment Stage 2 / Preferred Project Report. The Environmental Assessment Stage 2 Appendix 4 -Spectrum Acoustics report, determined that no non mine-owned properties were predicted to be impacted by blasting associated with Stage 2 operations. Blasting in OC4 will be located at a greater distance from all private Receptors than the existing operations in OC1. The nearest privately-owned residence is more than 2 km beyond the boundary of OC4. Controls implemented for blasting by Moolarben Coal will continue for the Stage 1 and Stage 2 mining and no additional management controls or monitoring is required for overpressure (noise) and vibration as a result of the additional assessments conducted for the Stage 1 MOD 9 to 11 modification or the Stage 2 development.

Blast overpressure and ground vibration monitoring of infrastructure is conducted when blasting is within 500m of any sensitive infrastructure (e.g. Ulan-Wollar Road, Gulgong-Sandy Hollow rail line or 330-kV transmission line). Each blast is monitored for overpressure and ground vibration at Ulan Public School and Ridge Road. Ground vibration will also be monitored at the Aboriginal rock art site near the top of the ridgeline above UG2 once blasting comes within 500m of the site. Blast events are visually monitored and videoed as implemented under Blast Management Plan, section 7.

A 500-m exclusion zone will be established around blast events and blasting will be designed to ensure that fly rock is controlled within this zone. (Implemented under Blast Management Plan, section 6.1). To minimise impacts, the 500-m exclusion zone will be cleared prior to blasting and pre-blast inspections carried out to make sure no persons, property or livestock are at risk from blasting. All blasts will only be undertaken between 0900 to 1700 Monday to Saturday.

Site conditions will be assessed prior to each blasting event (Implemented under Blast Management Plan, section 6.5.1 Pre-blast Environmental Assessment). Any fly rock found to have been ejected beyond the 500m exclusion zone will prompt an investigation to determine the cause. Blast practices and design will be modified in light of the results of the investigation.

The blast overpressure and ground vibration was assessed in MOD 9 to be within levels previously assessed and approved under Project Approval 05_0117. No Statements of Commitment in relation to blasting were expressed in the Environmental Assessment or Consolidated Project Approval 05_0117 for Stage 1 of the Moolarben Coal Project.

Statements of Commitment in relation to blasting expressed in the Project Approval 08_0135 Appendix 3 were:

SoC No.	Statement of Commitment – Blasting Project Approval 08_0135	Comment on Implementation	Compliance
14	MCM will work cooperatively with neighbouring mines to develop a blast monitoring system which is representative of the closest sensitive receivers to ensure compliance with the relevant blast criteria.	A communications protocol has been developed with Ulan Coal Mine and Wilpinjong Coal Mine so cumulative impacts from simultaneous blasting are avoided. This protocol outlines that blast times are rescheduled where there is potential for blasts to occur concurrently. Moolarben Coal Operations also has a Data Sharing Deed (signed on 27 March 2012) that provides the protocol for sharing of environmental information and data between Moolarben Coal, Ulan Coal and Wilpinjong Coal.	Compliant
16	MCM will continue to advise neighbours of blasting schedules upon request so that any concerns regarding blasting and impacts to pets and livestock can be managed by neighbours.	The local community informed of the blasting activities at the Moolarben Coal Complex, via the public website (www.moolarbencoal.com.au) where up to date information on the blasting schedule is available and via a 24hour Community Response Hotline (1800 556 484).	Compliant

5.5.3 Blast Management Plan Commitments

[Project Approval 05_0117 Schedule 3 condition 15]

[Project Approval 08_0136 Schedule 3 condition 16]

Design and management of blasting operations at Moolarben Coal occurs to meet all relevant statutory requirements and best practice, to minimise the risk of impact to residential receivers and sensitive infrastructure.

Blast management procedures implemented for the Moolarben Coal Complex include:

- training all relevant personnel on environmental obligations and explosives management;
- use of appropriate initiation and detonation systems and adherence to blast loading and initiation designs;
- use of adequate burden, stemming lengths and stemming material to confine explosives;
- designing all blasts to comply with vibration and airblast limits;
- monitoring of all blasts at locations outlined in Section 7.0;
- calibration of site models, using monitored data from previous blasting, to enable refinement and assessment of ongoing impacts;
- development of a blast record system which captures sufficient information to allow appropriate categorisation and comparison of blasts (Section 7.3);
- periodic review of blasting procedures to evaluate performance;
- evaluation of new technology and alternative blasting methodologies as they become available; and
- implementation of procedures to mitigate fume for all blasts (Section 6.6).

Implementation of the commitments in the Blast Management Plan has resulted in compliance with the overpressure and vibration criteria expressed in the Project Approvals and EPL.

5.5.4 Blast Criteria

[Project Approval 05_0117 Schedule 3 Condition 8]

[Project Approval 08_0135 Schedule 3 Condition 9]

[EPL 12932 condition L6.3 to L6.6]

Blasting criteria, blasting hours, blasting frequency, property inspection requirements and operating conditions are provided Project Approval 05_0117 Schedule 3 Condition 8, Project Approval 08_0135 Schedule 3 condition 9. The prescribed blasting criteria are set out in Table 5.4.4.

Table 5.4.4: Blasting criteria

Location	Airblast overpressure (dB _(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Residences on privately owned land, churches and schools	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months
All public infrastructure	-	50*	0%

* or a limit determined by the structural design methodology in AS 2187.2-2006

Blasting for open cut operations is only carried out at the Moolarben Coal Complex between 9.00 am and 5.00 pm Monday to Saturday. No blasting is allowed on Sundays, public holidays, or at any other time without the

written approval of the Secretary of the DP&E. Moolarben Coal may conduct up to 9 blasts per week on average, involving blasting of overburden, inter-burden and coal resource, but no more than 2 blasts per day.

Compliance with the blasting criteria and requirements is measured by the following performance indicators:

- compliance with the relevant criteria at monitoring locations;
- number of Level 3 or above blast fume incidents generated annually at the Moolarben Coal Complex; and
- compliance with the Blast Management Plan.

5.5.5 Blast Monitoring Program

Blast monitoring sites, frequency and parameters were selected in consultation with EPA and representatives of the nearest privately owned residences and other sensitive infrastructure, located within 2km of blasting activities.

Blast monitoring locations relative to open cut operations at the Moolarben Coal Complex are shown in Figure 5.5.5 and described in Table 5.5.5.

Table 5.5.5: Blast monitoring locations relative to open cut operations at the Moolarben Coal Complex

Blast Monitor ID	Location	Frequency / Location Description
Blast Overpressure and Vibration		
BM1	Ulan Public School	Every blast is monitored. Permanent blast monitor located adjacent to Ulan Public School for amenity monitoring. Representative of nearest privately owned residences north-west of OC1
BM5	Ridge Road	Every blast. Permanent blast monitor located at, or adjacent to the nearest privately owned residence to the south-west of OC1 and west of OC2.
BM6	Moolarben Road	Every blast following commencement of OC3. Permanent blast monitor located at, or adjacent to the nearest privately owned residence to the west-south-west of OC3.
Blast Vibration		
BM2	Aboriginal rock shelter site S1MC55 & S1MC56	Every blast within 500 m of Aboriginal rock shelter sites, Portable blast monitor located at the Aboriginal rock shelter site or representative site for structural integrity monitoring.
Portable Monitor	Other Infrastructure	Blast monitoring will be undertaken when blasting is proposed within 500 m of the relevant structure. Portable blast monitor located at, or adjacent to infrastructure for the purposes of structural integrity monitoring. <ul style="list-style-type: none"> • Ulan-Wollar Road; • Ulan Road; • Sandy Hollow Gulgong Railway; • Wollar-Wellington 330 kV transmission line

Blast monitoring locations will be reviewed and where necessary modified as a result of changes to the location of blasting or changes to land ownership (as relevant).

A summary of the environmental blast monitoring results is provided on the Moolarben Coal website in accordance with Project Approval 05_0117 Schedule 5 Condition 11(a) and Project Approval Schedule 6 condition 11(a).

All blast monitoring instrumentation is installed, calibrated and maintained in accordance with both AS2187.2-2006 and the manufacturer's specifications.

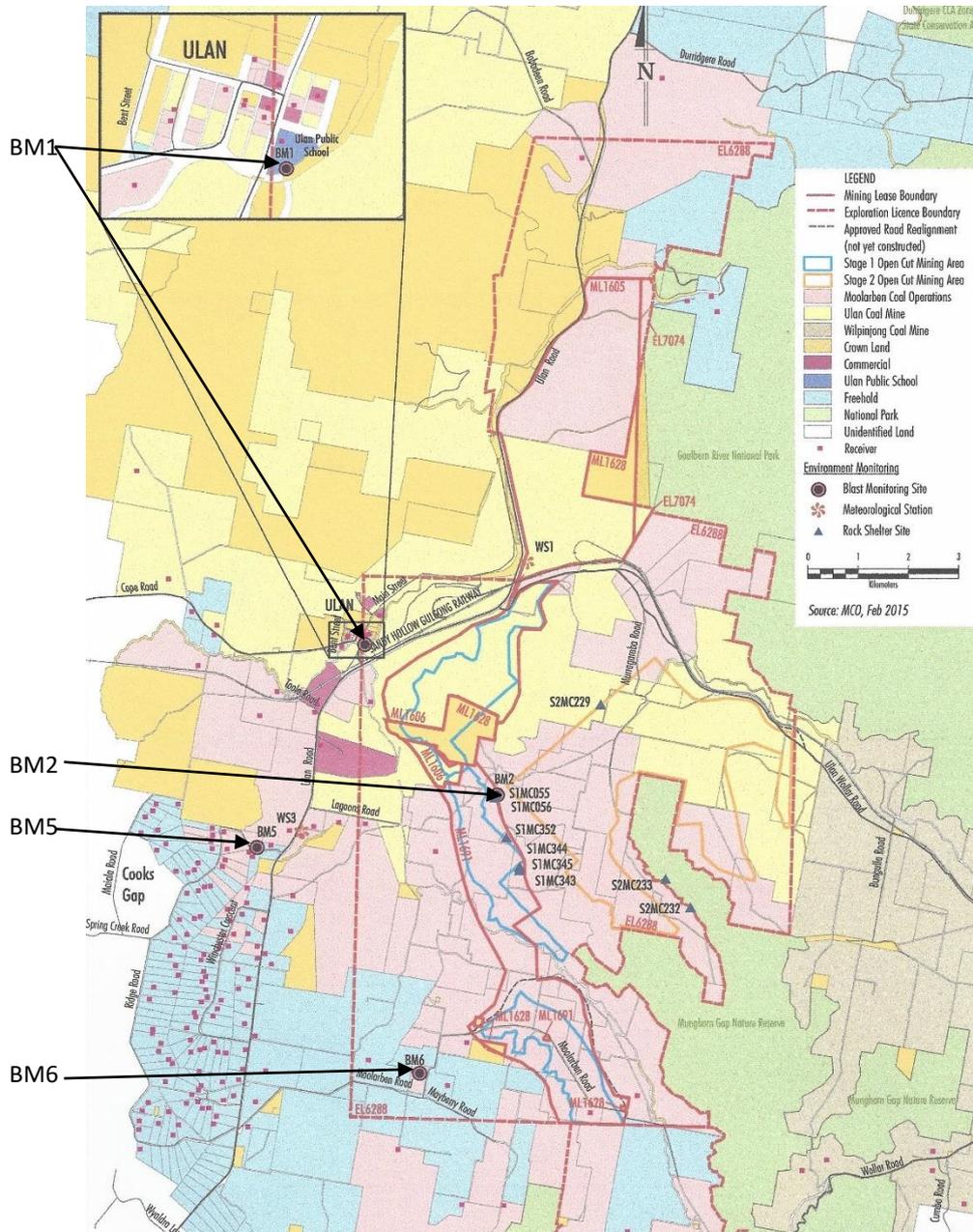


Figure 5.5.5: Blast Monitoring Locations – Moolarben Coal Complex

5.5.6 Blast Fume Monitoring

[Project Approval 05_0117 Schedule 3 condition 13(a)]

[Project Approval 08_0135 Schedule 3 and Condition 14(a)],

Blast fume management at the Moolarben Coal Complex to minimise the management of generation of blast fume is described in the Blast Management Plan in accordance with in Project Approval 05_0117 Schedule 3 condition 13(a) and Project Approval 08_0135 Schedule 3 and Condition 14(a), and the Moolarben Coal Blast Fume Management Strategy (MCO_ENV_PLN_033). The Blast Fume Management Strategy is based on the AEISG Code of Practice (2011).

The amount of NOx gases and extent of fume generated from a blast are assessed against the Blast Fume Classification Table AEISG (2011). In addition to visual monitoring of fume, a video of each blast is recorded. This includes consideration of the following factors and practices to mitigate fume for all blasts:

- domain risk area;
- blast design;
- explosives quality;
- explosives selection;
- on-bench practices;
- blast initiation;
- ground condition;
- reporting and documenting; and
- training.

5.5.7 Blast Monitoring Results

The blast monitoring conducted at Ulan Public School, Ridge Road and Lagoons Road (closest site to OC2 activities) demonstrated compliance at all sites for overpressure and vibration between January 2013 and December 2015. Blast overpressure was less than 5% of total blasts recorded overpressure between 115dBL and 120dBL. It was noted that blast overpressure on 3 and 4 of December 2015 were recorded at greater than 120dBL at Ridge Road monitoring site due to faulty microphone on the BM5 monitor.

No exceedance of vibration criteria was recorded at any monitoring sites.

Site	EA Prediction	2012-2013	2013-2014	2015 Jan to Dec
Overpressure				
BM1 Ulan Public School	114	81.9 – 109.9	81.9 – 116.6	88 – 115.9
BM5 - Ridge Road*		Not monitored	88 - 120	88 – 115.4
Lagoons Road	114	88 – 115.8	91.5 – 107.50	-
% Blasts > 115dBL		0	1.53	2%
Blasts >120dBL		0	0	0
Vibration				
BM1 - Ulan Public School	2.3	0.08 – 1.09	0.08 – 1.17	0.09 – 3.20
BM5 - Ridge Road*	Not modelled	Not monitored	0.01 - 0.61	0.04 – 1.32
Lagoons Road	2.6	0.01 – 0.84	0.10 – 0.16	

*Monitoring of this site only commenced in September 2013.

The visual and video monitoring of blasts identified a number of events when blast fume was generated. Each event was investigated and the root cause of the fume generation reported in accordance with the Pollution Incident Response Management Plan (PIRMP) – see section 5.5.8 below.

The review of blast records confirmed that blasting has been undertaken in accordance with the Project Approval requirements with respect to operating times and frequency of blasts. Currently the number of blasts are well below that anticipated in the conditions.

5.5.8 Incidents

There were seven occasions when blast fume was generated from overburden blasts in the northern part of OC1 and OC2, between January 2013 and December 2014. No reportable blast fume events occurred during 2015 following a change in supplier of blast materials. The blast related fume incidents were all reported in accordance with the Pollution Incident Response Management Plan (PIRMP).

The EPA was notified of recorded exceedances of the 120dBL on 3 and 4 December 2015 at BM5 blast monitor on Ridge Road due to a faulty microphone.

Table 5.5.8: Blast Incidents Notified between 2013 and 2015

Date	Blast Incident	Investigation / Reporting
3-4 December 2015		The blast monitor was inspected and the elevated blast overpressure readings were found to be due to a faulty microphone. Maintenance of the blast monitor was undertaken and the subsequent blasts monitored at BM5 site were less than 115dBL.
6 August 2014	Overburden blast in Strip 4 Block 1 in Open Cut 2 resulting in blast related fume. The blast was not located near any public infrastructure and a 500m exclusion zone was in place. At the time of the blast the wind speed was 1.9m/s from the W. The fume did not breach any of the planned fume management zones established in a risk assessment undertaken prior to the blast.	Over 50% of blast holes had water ranging from 0.5 – 1.0m, with 16 blast holes having in excess of 2.0m of water. Also during loading it was discovered that the product was not gassing correctly. The blast was cancelled on three occasions until wind direction was more favourable. The incident was reported in accordance with the PIRMP.
6 June 2014	Overburden blast in Strip 04 Block 1 in OC2 resulting in blast related fume. Wind direction ESE and wind speed was 1.9m/s. The fume travelled in northerly direction and completely dissipated prior to reaching any MCO boundaries.	The eastern section of the shot was affected by groundwater resulting in 15 holes containing wet walls and a further 14 containing water ranging from 1m to 14m in depth. The incident was reported in accordance with the PIRMP.
8 May 2014	Overburden blast in Strip 02 Block 1 in OC2 resulting in blast related fume. Wind direction ESE and wind speed was 5.1m/s. The fume travelled in an NW direction and dissipated prior to reaching any MCO boundaries.	The root cause of the incident was the product used in the blasting process. The emulsion temperature of the product was outside the gassing specifications provided by the supplier, causing the product to gas slowly. The incident was reported in accordance with the PIRMP.
26 March 2014	Overburden blast in Strip 01 Block 5 in Open Cut 1 resulting in blast related	The root cause of the incident was identified to be the product used in the

Date	Blast Incident	Investigation / Reporting
	fume. Wind direction from the E and wind speed was 2.4m/s. The fume travelled in an ENE direction and dissipated.	blasting process and the presence of groundwater. The incident was reported in accordance with the PIRMP.
14 February 2014	Overburden blast in Strip 03 Block 6 in OC 1 resulted in blast related fume. At the time of the blast wind direction was from the E and wind speed was 1.1m/s. The fume travelled in a NW-W direction and dissipated.	The root cause of the incident was identified to be the product used in the blasting process and the presence of groundwater. The incident was reported in accordance with the PIRMP.
9 August 2013	Overburden blast in Strip 04 Block 6 in OC1 resulting in blast related fume being generated. Wind direction WSW and wind speed was 1.3m/s. The fume dissipated on MCO Mining Lease to the NE of the blast, approx. 3-4 minutes after the shot.	The root cause of the incident was identified to be the product used in the blasting process and the presence of water in the holes. The incident was reported to the EPA in accordance with the PIRMP.
24 April 2013	Overburden blast in Strip 02 Block 7 in OC1 resulting in blast related fume being generated. Wind direction WSW and wind speed was 2.4m/s. The fume dissipated on MCO's Mining Lease approximately 3 minutes after the shot.	The root cause of the incident was identified to be the product used in the blasting process. This incident was reported in accordance with the PIRMP.

5.5.9 Community Complaints

Community complaints related to blasting received by Moolarben Coal between 2012 and 2015 were investigated.

Reporting Period	No. of Blast Complaints	Comments
Jan to Dec 2015	6	No exceedance of overpressure or vibration were recorded at the date and time of receipt of the complaints.
Sep 2013 to Dec 2014	0	-
Sep 2012 to Aug 2013	12	No exceedance of overpressure or vibration were recorded at the time and date of receipt of the complaints.

It was verified that no exceedance of overpressure or vibration were recorded at the time and date of receipt of any of the complaint between 2013 and 2015. Communication occurred with each of the complainants and results of the investigations were discussed.

5.5.10 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 3.13 reports on blasting during the AEMR reporting period, blast monitoring for overpressure and vibration (section 3.13.2 and Table 54), comparison of results to previous blasting monitoring and predicted levels for overpressure and vibration (section 3.13.3 and Table 55) and activities for the next reporting period (section 3.13.4).

A summary of reportable incidents is also provided in section 3.23.2 (2102-2013 AEMR) and 3.24.2 (2013-2014 AEMR).

The AEMR provides a detailed and valid representation of the status of environmental management and monitoring data and review of environmental performance of the Moolarben Coal Complex blasting activities.

5.5.11 Improvement Opportunities

It is recommended that management of blasts to reduce potential of fume generation should be reviewed in relation to the Blast Fume Management Strategy by ensuring the quality of product used for the blasts is checked before the blast is initiated and meets the gassing specifications provided by the supplier.

5.5.12 Conclusion

Blasting	Compliance Status	Compliant
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The implementation of the Blast Management Plan for the Moolarben Coal Complex describes the management of blasting associated with the open cut operations (including management of overpressure, vibration, and fly-rock management) and generally conforms with best practice.

The review of blast records confirmed that blasting has been undertaken in accordance with the Project Approval requirements with respect to operating times and frequency of blasts.

The audit has found that MCC is complying with blasting criteria (over pressure and vibration) outlined in the Project Approvals and the EPL.

The blast monitoring between January 2013 and December 2015 demonstrated compliance with the blast overpressure and vibration criteria in the Project Approvals and the EPL at all monitored locations for all blasts.

There were seven occasions when reportable blast fume was generated from overburden blasts in the northern part of OC1 and OC2, between January 2013 and December 2014. Generation of blast fume that occurred between 2013 and 2014 was reported in accordance with the Pollution Incident Response Management Plan. The fume generation was generally due to the presence of water in the blast drill-holes and/or the quality of the product used for blasting. No reportable blast fume events occurred during 2015 following a change in supplier of blast materials. Elevated blast overpressure readings were recorded on 3 and 4 December 2015 due to a faulty microphone on the blast monitor, and EPA was notified.

5.6 Air Quality²

[Project Approval 05_0117 Schedule 3 condition 16 to 20B]

[Project Approval 05_0117 Statement of Commitment 18]

[Project Approval 08_0136 Schedule 3 condition 17 to 24]

[Project Approval 08_0136 Statements Commitment 5 to 10]

[Environment Protection Licence 12932 condition P1, M4 and O3]

² Shane Lakmaker, Jacobs

5.6.1 Air Quality Management Plan

[Project Approval 05_0117 Schedule 3 condition 20A]

[Project Approval 08_0136 Schedule 3 condition 22]

The Air Quality Management Plan prepared, to satisfy Project Approval 05_0117 Schedule 3 condition 20A in March 2010 was revised in June 2013 to include OC2 and OC3. The Air Quality Management Plan was further revised with input from Todoroski Air Sciences in July 2015 to address both Stage 1 and Stage 2 mitigation measures in accordance with Project Approval 05_0117 Schedule 3 condition 20A and Project Approval 08_0136 Schedule 3 condition 22, and approved by DPE on 31 July 2015.

5.6.2 Meteorological Monitoring

[Project Approval 05_0117 Schedule 3 condition 20B]

[Project Approval 08_0136 Schedule 3 condition 24]

[Environment Protection Licence 12932 condition M4]

Meteorological monitoring is undertaken at Moolarben Coal Complex, in accordance with the Project Approvals and EPL 12932 requirements. Moolarben Coal operates Automatic Weather Stations (AWSs) that provide meteorological data in accordance with the Project Approval 05_0117 Schedule 3 condition 20B, Project Approval 08_0135 Schedule 3 condition 24, EPL 12932 condition M4.2 requirements, and Approved Methods for Sampling of Air Pollutants in NSW:

- Weather station (WS01) located at the mine site administration office
- WS02 located at the Coal Handling and Preparation Plant; and
- WS03 located on a property on Ulan Road. WS03 is the main weather station linked into the real-time monitoring system for reporting purposes;
- (WS04) is located adjacent to Open Cut 2 to supplement weather data as required.

The WS03 weather station was inspected during this Independent Environmental Audit. Minespex undertook a review of the siting of the AWSs monitoring units against the guidelines contained in the relevant Australian Standards referenced by the EPA Approved Methods publication in September 2010 and concluded that the weather station siting conformed with AS-2923.

Data from the weather station is available as 15-minute continuous recording. Sigma-theta data available to estimate temperature lapse rate is also available from a 60m tower at the weather station operated by the adjacent Wilpinjong Coal Mine.

5.6.3 Environmental Assessment Predictions and Statements of Commitment

[Environmental Assessment Moolarben Coal Project MOD 9 to 11]

[Environmental Assessment -Moolarben Coal Project Stage 2, March 2009]

[Preferred Project Report, Stage 2, January 2012]

[Environmental Assessment - OC4 South-West Modification MOD 1 April 2015]

The Environmental Assessment Moolarben Coal Project MOD 9 Stage 1 Optimisation Modification assessed the air quality for the MOD 9 Stage 1 development.

The air quality levels associated with the Moolarben Coal Project Stage 1 MOD 9 meet the relevant air quality criteria for deposited dust, TSP, annual average PM₁₀ and PM_{2.5} at nearby privately owned residences. Total (cumulative) impacts predicted from the Moolarben Coal Project from proposed MOD 9, also meet the relevant air quality criteria for TSP, annual average PM₁₀ and deposited dust for all assessment locations at privately owned residences.

Air dispersion modelling assessment of potential air quality impacts conducted for MOD 9 (Todoroski Air Sciences, 2013) for a potential worst-case operational scenario for the Moolarben Coal Complex (incorporating the MOD 9) for the receivers to the west (i.e. Ulan) and southwest (i.e. Cooks Gap), estimated that activities associated with the Moolarben Coal Complex operations would generally be within the existing envelope approved for the project.

The reactive dust mitigation measures implemented by Moolarben Coal have a positive effect in minimising potential air quality impacts in the local area and would ensure best practice dust management measures are in place for the operations at the Moolarben Coal Complex.

The conclusion of the Environmental Assessment for MOD 9 (Todoroski Air Sciences, 2013) was:

“Therefore it is reasonable to conclude that the approved Moolarben Coal Complex operations including MOD 9, is unlikely to cause any exceedance or additional impact at any surrounding sensitive receptor locations.”

Statements of Commitment in relation to air quality expressed in Consolidated Project Approval 05_0117 for Stage 1 of the Moolarben Coal Project were:

SoC No.	Statement of Commitment - Air Quality Consolidated Project Approval 05_0117	Comment on Implementation	Compliance
19	<ul style="list-style-type: none"> • Management and monitoring of air quality will continue to be undertaken in accordance with the best management practices set out in an approved Air Quality Management Plan. • Dust control measures will be used on internal haul roads. • Raw coal transfer and rejects conveyors will be partially enclosed. • Dust sprays will be fitted to the dump hopper. • Water carts will be used to minimise dust generation from unsealed access tracks and construction areas, where required. • A TEOM will be located to the southwest of the project to enable proactive dust management and compliance monitoring for private residences to the south of the project prior to mining in Open Cut 2. • Use of a TEOM located to the northeast of the project for measuring background dust levels. • MCO will continue to report annually in the AEMR, the total amount of greenhouse gas emissions from the MCP and the effectiveness of measures implemented to achieve energy savings. 	<ul style="list-style-type: none"> • Air quality management and monitoring is conducted in accordance with approved Air Quality Management Plan. • All haulage roads are designated, and road surfaces are watered to manage dust generation. • Dust curtains and sprays have been installed inside hoppers to manage dust generation during dumping of ROM coal into the hoppers. The hoppers are enclosed on three sides and roof and transfer points are also covered. • Dust generated by truck haulage is managed with truck operators encouraged to radio directly to the water carts for application affected roads. • TEOM’s have been installed around the MCP site at Ridge Road, Ulan School, Ulan Road and Ulan-Wollar Road northeast of the project (TEOM 6) for measuring background dust levels. • MCO reports annually in the AEMR, Greenhouse gas emissions from the MCP and energy savings are reported annually. 	Compliant

Statements of Commitment in relation to air quality expressed in Project Approval 08_0135 Appendix 3 for Stage 2 of the Moolarben Coal Project were:

SoC	Statements of Commitment - Air Quality Project Approval 08_0135	Comment on Implementation	Compliance
5	MCM will use its best endeavours to implement industry best practice air quality management initiatives to minimise the air quality impacts of the MCC.	The Air Quality Management Plan section 6.1 addresses management and monitoring of air quality to be undertaken in accordance with the best management practices.	Compliant
6	The revised MCC Air Quality Management Plan (and future variations) will include a validation exercise of the real time response triggers.	The Air Quality Management Plan section 6.1 addresses a validation exercise of the real time response triggers.	Compliant
7	MCM will complete a review of particulate emission controls implemented at the MCC against industry best practice on a three yearly basis and report the findings in the relevant Annual Review.	The Air Quality Management Plan section 6.1 addresses a review of particulate emission controls implemented at the MCC against industry best practice on a three yearly basis and report the findings in the relevant Annual Review.	Compliant
8	MCM will develop and implement meteorological criteria to help ensure that blasting is not undertaken under unfavourable wind and/or atmospheric conditions which would result in an exceedance of relevant criteria.	The Air Quality Management Plan section 6.1.1 addresses meteorological criteria to help ensure that blasting is not undertaken under unfavourable wind and/or atmospheric conditions that would result in an exceedance of relevant criteria.	Compliant
9	Where air quality impacts are predicted to exceed criteria at private residences in the PPR due to MCC operations, MCM will install a first flush system to the rain water tanks upon written request of the landholder.	The Air Quality Management Plan section 9.1 addresses where air quality impacts are predicted to exceed criteria at private residences in the PPR due to MCC operations. (MCM will install a first flush system to the rain water tanks upon written request of the landholder)	Compliant

5.6.4 Air Quality Management Plan Commitments

[Project Approval 05_0117 Schedule 3 condition 20A]

[Project Approval 08_0136 Schedule 3 condition 22]

Operational air quality management commitments implemented at the Moolarben Coal Complex in accordance with the approved Air Quality Management Plan include:

- Disturbance of only the minimum area necessary for mining (e.g. typically only one strip ahead of the active mining operations);
- Limiting clearing and topsoil stripping activities as far as practicable during the drier months;
- Adoption of progressive rehabilitation of mining operations to minimise exposed soils;

- Employing appropriate dust suppression methods at the coal handling facilities;
- Use of water carts on all trafficked areas to minimise dust generation as necessary and practicable;
- Use of chemical dust suppressants where watering alone is unable to achieve required dust control efficiencies;
- Use of constructed roads only, minimisation of access roads and removal of obsolete access roads;
- Maintaining coal handling areas and stockpiles in a moist condition using water carts and/or water sprays;
- Relocation, modification and/or temporarily ceasing mining operations in adverse meteorological conditions to minimise the short term air quality impacts;
- Use of dust suppression systems on stationary and mobile plant (such as the dump hopper, transfer stations, drill rigs);
- Long term topsoil stockpiles, not used for over 6 months will be revegetated with grass;
- Use of dust aprons and water injection systems on drills;
- Partial enclosure of coal conveyors where possible;
- Watering of out-of-pit emplacement areas that will remain inactive for prolonged periods creating a dry crust layer to reduce dust emissions associated with wind erosion; and
- Increasing excavator bench height when working on drier weathered rock near the natural surface to allow blending with underlying overburden which contains more moisture.

Moolarben Coal has implemented software that assists in pro-active management of dust emissions. The system provides daily reports and predictions of upcoming meteorological conditions and potential dust generation risks. Based on prevailing wind conditions, Moolarben Coal can strategically alter its operations to reduce potential dust impacts.

5.6.4.1 Dust Mitigation Measures

The primary measures to control dust emissions as described in the “*Moolarben Coal Particulate Matter Control Best Practice Pollution Reduction Program*” (PAE Holmes, 2012). Moolarben Coal will complete a review of particulate emission controls against industry best practice on a three yearly basis and report the findings in the relevant Annual Review.

5.6.4.2 Air Quality Criteria

A predictive meteorological and air quality forecasting system is available at any time from the main weather station (WS03) linked to the real-time monitoring system for reporting purposes for environmental employees and shift supervisors. Forecasts are reviewed at the start of each shift by the Mine Production Environmental Assistant and reported to the shift supervisor.

5.6.4.3 Reactive Air Quality Measures

The Air Quality Management Plan section 6.1.4 - Table 4 documents real time response measures to be undertaken when the 24 hour PM₁₀ at TEOM1, TEOM 4 or TEOM5 reaches trigger values. Response involves reviewing site activities, weather patterns and weather predictions, and ensuring mitigation measures are in place to limit dumping and/or construction on exposed areas and if required rescheduling all dust generating activities. Real-time air quality monitoring data is available from the TEOM's and WS03 monitoring data to identify when ambient levels of PM₁₀ in the surrounding environment may be potentially elevated and require contingency action. Dust real-time response triggers established have been determined to provide a system to warn operational personnel (via SMS) of levels that are approaching a relevant criterion and to provide management / control actions.

Table 5.6.4.3: Real-Time Response Triggers and Management Actions

Trigger No.	Trigger Value	Management / Control Actions
1	Winds from NE to SE (45 to 135 degrees) and 24-hour average PM ₁₀ >38µg/m ³ at receptor monitoring locations (TEOM4, TEOM5 and TEOM1) NW to SW of the operations or When winds blow towards sensitive receptors NE to SE (45 to 135 degrees) and the vector difference in 1-hour average ambient dust levels (over six [6] consecutive 1-hour periods) between upwind and downwind monitors is >25µg/m ³ *	<p>Review weather data and trends (e.g. wind direction and speed).</p> <ul style="list-style-type: none"> • Review weather predictions. • Review current operations and locations of dust generating activities. • Review current dust controls. • Check that standard mitigation measures are in place. • Continue to monitor PM₁₀ until decreasing trend observed.
2	Winds from NE to SE (45 to 135 degrees).and 24-hour average PM ₁₀ >45µg/m ³ at monitoring locations (TEOM4, TEOM5 and TEOM1) NW to SW of the operations or When winds blow towards sensitive receptors NE to SE (45 to 135 degrees), and the vector difference in 1-hour average ambient dust levels (over six [6] consecutive 1-hour periods) between upwind and downwind monitors is >35µg/m ³ *	<ul style="list-style-type: none"> • Actions as per Trigger 1. • Mine Production Environmental Assistant to inspect and monitor downwind areas for dust and report to supervisor. • Ensure relevant dust control measures (refer Table 3) are in place and performing effectively. • Make temporary operational changes as appropriate (e.g. relocate overburden dumping to wind protected locations; increase haul road watering rate; ensure operators using best endeavours to minimise dust lift off during loading; or selectively shutting down mobile fleet or diggers). • Temporarily pause and modify any activity generating excessive visible dust plumes
3	Winds from NE to SE (45 to 135 degrees) and two consecutive 15minute average PM ₁₀ readings >50µg/m ³ at monitoring locations (TEOM4, TEOM5 and TEOM1) NW to SW of the operations of the operations or When winds blow towards sensitive receptors NE to SE (45 to 135 degrees) and the vector difference in 1-hour average ambient dust levels (over three [3] consecutive 1-hour periods) between upwind and downwind monitors is >40µg/m ³ *	<ul style="list-style-type: none"> • Actions as per Trigger 1. • Actions as per Trigger 2. • Make operational changes (including temporarily shutting down mobile fleet and diggers where appropriate) until decreasing PM10 trend observed.

* The vector difference is the difference between downwind and upwind PM10 levels, along a vector from the upwind monitor to the downwind monitor (representing sensitive receptor locations), approximating the wind vector from mine to receiver.

5.6.4.4 Management of Odours and Fume

The primary potential odour sources at the Moolarben Coal Complex are from spontaneous combustion and fume generated during blasting. Secondary sources include potential odour emissions from the effluent irrigation area.

Spontaneous Combustion

The four main potential sources of Spontaneous Combustion risk are:

- burial of rejects and carbonaceous material in the overburden dumps;
- ROM coal stockpiles;
- product coal stockpiles; and
- boreholes

Operational processes to prevent odour from Spontaneous Combustion include:

- Dumping of rejects to occur only in designated areas as directed by the mining supervisor.
- Rejects are to be dumped 5m below the final rehabilitated surface and between 25m to 40m from the rehabilitated edge.
- Rejects must not be dumped in a layer thicker than 5m.

Operational processes for MCO to manage odour from Spontaneous Combustion include:

- Water is to be applied to cool excessive heating or fire, followed by digging out the heated material, applying further watering and then compaction and burial in an inert part of the dump.
- Installation of monitoring equipment.
- Barricade area.
- Where practicable full column cementing of boreholes at the completion of drilling and geological investigations.

Note: MCO has had no recorded issues with Spontaneous Combustion of coal at the Moolarben Coal Complex between January 2013 and December 2015. Complaints received by Moolarben Coal in relation to odour have been investigated and no sources of odour have been identified on the Moolarben Coal Complex site at the time and date of the complaints.

Blast Fume

[Project Approval 05_0117 Schedule 3 condition 13(a)]

[Project Approval 08_0135 Schedule 3 and Condition 14(a)],

Blast fume management at the Moolarben Coal Complex is required to be minimised in Project Approval 05_0117 Schedule 3 condition 13(a) and Project Approval 08_0135 Schedule 3 and Condition 14(a). Management of generation of blast fume is described in the Blast Management Plan (MCO_ENV_PLN_0023) and Blast Fume Management Strategy (MCO_ENV_PLN_033). Refer to section 5.5 of this Independent Environmental Audit.

Effluent Management

Moolarben Coal manage their effluent irrigation to minimise the potential for offsite emissions of offensive odour. The primary controls for this secondary potential odour source involves separation from sensitive receptors (note the closest sensitive receptors are in Ulan village located more than 1.5 km from these potential odour sources) and efficient operation and maintenance of irrigation system and application rates.

5.6.5 Air Quality Monitoring Program

To assess compliance with the Project Approval and EPL 12932 criteria, ambient air quality monitoring is conducted at locations considered to be representative of residential receivers in the areas that may be potentially influenced by mining operations. The air quality monitoring locations are shown in Figure 5.6.5.

Additional air quality monitoring data is available to Moolarben Coal under a data sharing agreement with Ulan Mine and Wilpinjong Mine, with data made accessible upon request from Moolarben Coal.

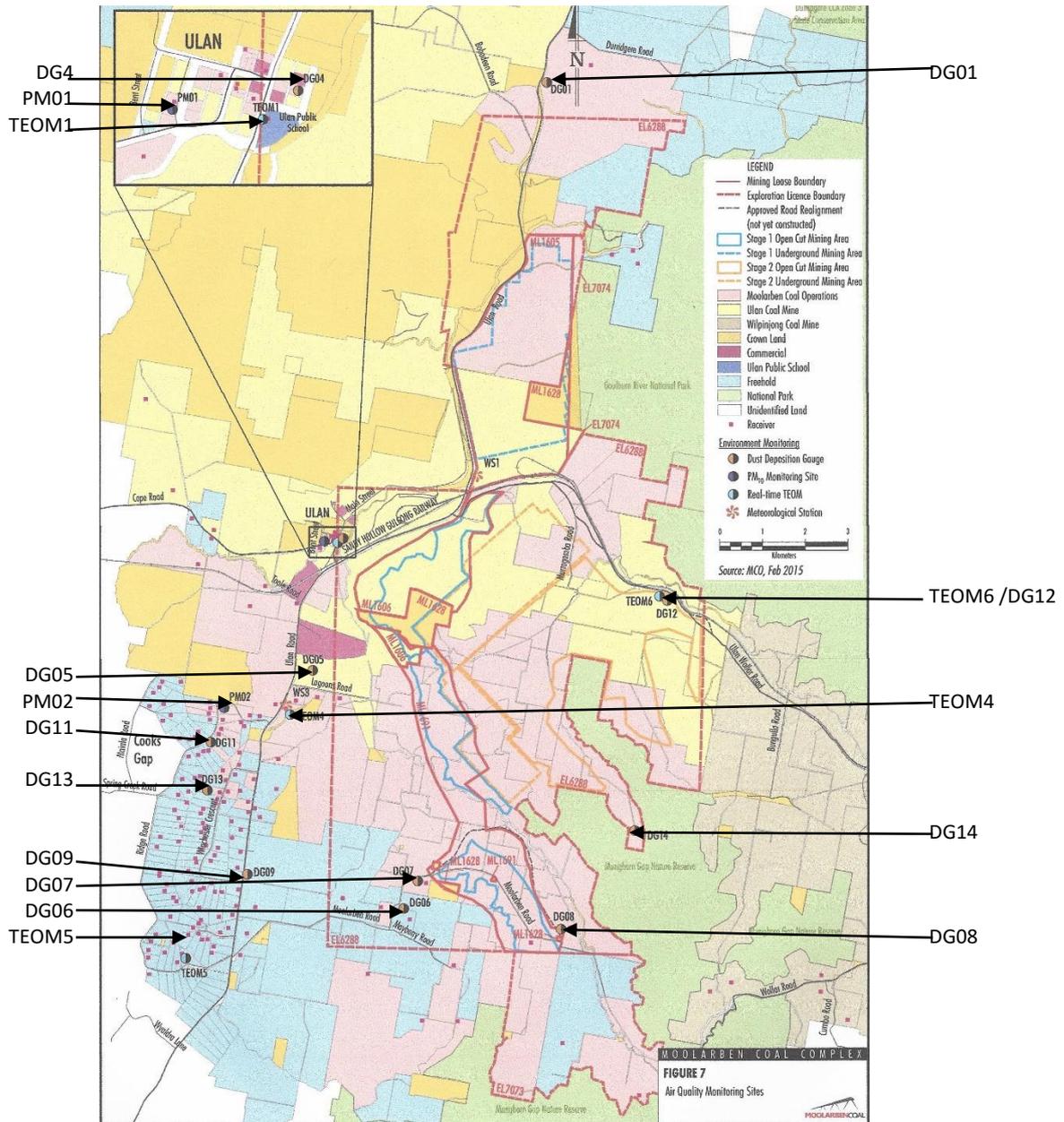


Figure 5.6.5: Air Quality Monitoring Sites

5.6.5.1 Dust Deposition

Dust deposition is monitored at eleven locations around the Moolarben Coal Complex. Deposited dust is 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.

5.6.5.2 PM₁₀ – High Volume Air Sampler

Two HVAS monitors measuring PM₁₀ are operated by Moolarben Coal (one at Ulan Village (PM01) and one south-west of OC1 and west of OC2 (PM02)). PM₁₀ is assessed as defined by AS/NZS 3580.9.6:2003: Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM₁₀ high volume sampler with size selective inlet – Gravimetric method.

5.6.5.3 *PM₁₀ – Real-Time Monitoring*

PM₁₀ is also measured using a Tapered Element Oscillating Mass Balance (TEOM) at four locations around the Moolarben Coal Complex (three permanent locations at a property at Ridge Road, and Ulan School and Ulan Road, and a background unit at Ulan-Wollar Road), and assessed for the purpose of real-time environmental management as defined by AS/NZS 3580.9.8.2008: Methods for sampling and analysis of ambient air – PM₁₀ continuous direct mass method using a tapered element oscillating microbalance analyser.



Air quality monitoring station – Ulan Public School

5.6.5.4 *Total Suspended Particulates (TSP)*

TSP is calculated from the monitored PM₁₀ level based on the relationship that 40% of the TSP is PM₁₀ and that 90µg/m³ of TSP is equivalent to 4g/m²/month of dust deposition. (This relationship of TSP to PM₁₀ is based on a study of co-located TSP and PM₁₀ monitors conducted in the Hunter Valley [Todoroski Air Sciences 2013]).

5.6.6 *Air Quality Monitoring Results*

5.6.6.1 *Dust Deposition*

Dust deposition is monitored at eleven locations (see Figure 5.6.5) around the Moolarben Coal operations in accordance with EPA guidelines and relevant Australian Standards.

Results from dust deposition gauges are expressed as insoluble solids and ash residue. Over the reporting period approximately 8% of records were contaminated with organic matter such as bird droppings compared to 2% last reporting period. Bird deterrent rings have been installed on all dust gauges to minimise contamination by bird droppings.

Dust deposition results annual averages are below the annual average dust limit of 4 g/m²/month ranging from 0.8g/m²/month at sites DG01, DG8, DG11 to 2.2g/m²/month at DG02.

No monitoring site exhibited an increase deposited dust of greater than 2g/m²/month, in compliance with the maximum incremental increase criteria in Project Approval 05_0117 Schedule 3 condition 17 and Project Approval 08_0135 Schedule 3 condition 18.

5.6.6.2 *Particulate Matter <10µg (PM₁₀)*

The average PM₁₀ monitoring results remained below the Project Approval annual average criteria of 30µg/m³ at all sites during 2013 - 2015.

TSP results exhibited levels less than the annual average criteria of 90µg/m³ at all sites during 2013 - 2015.

All real-time PM₁₀ averages were within the levels predicted in the Environmental Assessment Moolarben Coal Project and Modifications.

5.6.7 *Site Inspection Audit Observations*

Interviews site personnel and a site inspection conducted on 7 December 2015 included observation of emission generating activities of the mining operations to assess compliance and environmental performance. The observations and verifiable evidence suggested compliance for each activity assessed:

- Scrapers used for topsoil removal and stockpiling.
- All haulage roads are designated, and road surfaces are watered to manage dust generation.
- Water injection and water curtains are used on drilling rigs to reduce dust generation during drilling operations. Drilling equipment is shutdown if not operating correctly.
- Blast checklists are completed prior to blasting to ensure weather and blast locations/geological conditions conform with best practice blast impact management. Water used on the surface of shot areas to reduce dust dispersion.
- Loading of trucks is observed and if excess dust occurs procedures to reduce dust dispersion are implemented including minimising drop height, reducing excavator/bucket swing rates, slowing production.
- Dust generated by truck haulage is managed with truck operators encouraged to radio directly to the water carts for application affected roads. Fill points for water trucks have been appropriately positioned around haul routes.
- Dumping to hopper. Dust curtains and sprays have been installed inside hoppers to manage dust generation during dumping of ROM coal into the hoppers. The hoppers are enclosed on three sides and roof and transfer points are also covered.
- Overburden dumping to emplacement areas is controlled to dump high or low, depending on the weather conditions and/or nature of the overburden material, to reduce potential dust generation and dispersion.
- Pre-strip areas are minimised to reduce potential for wind erosion. From the visual inspection the pre-strip and dump areas were limited to the minimum practicable sizes. Surface disturbance was commensurate with the currently observed level of mining activity.
- Pre-shift Toolbox Talks include discussion of air quality and dust minimisation. Personnel receive a daily forecast of expected dust conditions and contribution from the site. The forecasts (proactive) are derived from meteorological and air dispersion modelling. Monitoring data are available online (Sentinex system) to provide reactive elements. Forecasts and observations of meteorological conditions were observed to be actively used with operations modified in response to adverse conditions
- Haul route distances are minimised to reduce fuel consumption.
- A Trigger Action Response Plan for dust management is used. Operations are conducted to consider dust impacts, including modifying activities during high winds to target visual dust. (No off-site air pollution was observed during the site inspection).

5.6.8 Improvement Opportunities

During the site inspection visible dust was observed over a 10-minute period due to construction trucks travelling on unsealed surfaces in the site establishment area of OC4. However, no dust was observed leaving the site. The event appeared to coincide with a time that water cart operators were on a break.

Recommendation:

It is recommendation that a procedure be implemented to avoid instances when haul trucks are operating without water cart support.

A review of the existing Energy Savings Action Plan should be conducted to identify energy saving actions that can be introduced in relation to the maintenance and operation of the vehicle fleet and other mining equipment operating at the mine.

5.6.9 Incidents

No dust/air quality incidents were recorded during the 2013 to 2015 period.

5.6.10 Community Complaints

A small number of community complaints related to dust were received by Moolarben Coal between 2013 and 2015. The complaints were investigated and the cause of the complaint was generally related to smoke haze or light haze visible in the distance during inversion or morning foggy conditions. No exceedance of dust criteria, were identified at the time of the complaints.

5.6.11 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 3.3 reports on air quality activities during the AEMR reporting period, air quality monitoring of dust deposition (section 3.3.2.3 and Table 15), HVAS TSP (section 3.3.2.1) and PM₁₀ (section 3.3.2.2 and Figure 11) summarise the HVAS PM₁₀ results for the reporting period including a comparison of the rolling average against the criteria, and real-time PM₁₀ (section 3.3.2.2 Table 13 and Figures 7, 8, 9 and 10) summarise the real-time PM₁₀ results for the reporting period including the rolling average compared to the criteria), comparison and explanation of dust deposition (Table 18), HVAS TSP and PM₁₀ (Table 17) results, comparison of results to previous air quality monitoring and predicted levels for of dust deposition, HVAS TSP and PM₁₀, and PM₁₀ and activities for the next reporting period (where relevant).

The AEMR provides a detailed and valid representation of the status of environmental management and monitoring data and review of environmental performance for the air quality aspect of the Moolarben Coal Complex activities.

5.6.12 Conclusion

<u>Air Quality</u>	<u>Compliance Status</u>	<u>Compliant</u>
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The Air Quality Management Plan for Stage 1 and Stage 2 of the Moolarben Coal Complex was approved by DP&E in July 2015. The implementation of the Air Quality Management Plan addresses management of operations and monitoring of air quality for the Moolarben Coal Complex activities in accordance with best management practices outlined in the Management Plan.

At the time of this Independent Environmental Audit, overburden removal and coal extraction activities were occurring in Open Cut 1 and Open Cut 2. Site establishment for Open Cut 4 commenced in September 2015.

This Independent Environmental Audit of air quality management at the Moolarben Coal Complex indicated that the operations of the Moolarben Coal Project are in compliance with the conditions of Consolidated Project Approval 05_0117, Project Approval 08_0135 and EPL 12932, in relation to air quality requirements and commitments.

5.7 Water Management³

[Project Approval 05_0117 Schedule 3 condition 29 to 33]
[Project Approval 05_0117 Statement of Commitment 3, 13, 14, 15, 18]
[Project Approval 08_0136 Schedule 3 condition 25 to 29]
[Project Approval 08_0136 Statement Commitment 17 to 29]
[Environment Protection Licence 12932 condition P1 and L1]

5.7.1 Water Management Plan

[Project Approval 05_0117 Schedule 3 condition 33]
[Project Approval 08_0136 Schedule 3 condition 29]

To satisfy Project Approval 05_0117 Schedule 3 condition 33, a Water Management Plan was prepared in consultation with NSW Office of Water (NOW) and the EPA, by suitably qualified and experienced persons whose appointment was approved by the DP&I.

A general review and update of the Water Management Plan occurred in June 2013, and Version 3 was developed in July 2015 by MCO, WRM Water & Environment, and Dundon Consulting (whose appointments were approved by the Secretary on 11 February 2015), to address the requirements of Project Approval 05_0117 Schedule 3 condition 33(a) MOD 11 and include Project Approval 08_0135 Schedule 3 condition 29 for Stage 2.

The current Water Management Plan, including associated sub-plans approved on 31 July 2015, comply with the requirements of Project Approval.

5.7.2 Protocol Agreed with Ulan Mine and Wilpinjong Mine

[Project Approval 05_0117 Schedule 3 condition 33(e)(iv)]
[Project Approval 08_0136 Schedule 3 condition 29(e)(iv)]

A Data Sharing Deed signed on 27 March 2012 has been prepared in consultation with the owners of the Ulan Mine and Wilpinjong Mine to satisfy Project Approval 05_0117 Schedule 3 condition 33(e)(iv) and Project Approval 08_0136 Schedule 3 condition 29(e)(iv) and provides the protocol for sharing of environmental monitoring data between the three mines.

Six-monthly meetings are held between the parties to discuss and implement integrated monitoring programs to assess any cumulative water quality impacts, co-ordinate water quality monitoring programs as far as practicable, undertake joint investigations/studies if cumulative impacts are considered likely and co-ordinate modelling programs for validation, re-calibration and re-running of groundwater models.

The data available via the data sharing Agreement is used as required by Moolarben Coal and the results included in the Monthly Environmental Monitoring Reports and AEMR's where relevant.

5.7.3 Environmental Assessment Predictions and Statements of Commitment

[Environmental Assessment Moolarben Coal Project MOD 9 to 11]
[Environmental Assessment -Moolarben Coal Project Stage 2, March 2009]
[Preferred Project Report, Stage 2, January 2012]
[Environmental Assessment - OC4 South-West Modification MOD 1 April 2015]

³ Fiona Robinson, Ramboll

5.7.3.1 Environmental Assessment Moolarben Coal Project, 2006

The Environmental Assessments of the Moolarben Coal Project assessed water management for Stage 1 operational phase. Water Management measures to be implemented during the mine life include:

- Clear identification and delineation of areas that will be disturbed as part of the mining process so that disturbance is limited to those areas;
- Minimising the clearing of vegetation to allow the works to proceed and to minimise machinery disturbance outside of these areas;
- Limiting the number of roads and tracks established;
- Construction of sediment dams to capture, contain and recirculate runoff from disturbed catchment areas; • Construction of drains upslope of areas to be disturbed to convey clean runoff away from most disturbed areas;
- Constructing access road and earthworks cut and fill batters at slopes (of 1V:3H or less, where possible), to maximise long term stability;
- Reshaping, topsoiling and vegetating road and cut and fill batters as soon as practical;
- Progressively stripping and stockpiling topsoil for later use in rehabilitation;
- Diversion of surface and road runoff away from disturbed areas;
- Regular maintenance of erosion control works and rehabilitated areas;
- Progressive stabilisation and revegetation of disturbed areas;
- Placement of oil management systems downslope of high trafficked hardstand areas; and
- Enhancement and stabilisation of existing lands outside the area of the mine foot print.

The MOD 9 assessment concluded that the potential impacts from the proposed modification would be managed under the existing surface water management system and in accordance with the Water Management Plan for the Moolarben Coal Project. The Water Management Plan and sub-plans would be reviewed and updated as required to accommodate the proposed modification.

5.7.3.2 Environmental Assessment Moolarben Coal Project Stage 2

The Environmental Assessment Moolarben Coal Project Stage 2 presented a conceptual Water Management Strategy for the Moolarben Coal Project (inclusive of Stage 2) taking into consideration the guidelines documented in the Hunter-Central Rivers Catchment Action Plan (HCRMA, 2007). The aim of these guidelines is to achieve best practice in natural resource management and to reduce the impacts of mining on the environment. The strategy promotes the use of good quality water to be diverted away from mining areas to be used for maintaining environmental flows, re-use of the increasing volumes of dirty water generated as open cut mining progresses and water sharing with adjacent mines to reduce demand on the production borefield.

5.7.3.2.1 Clean Water Management

Surface runoff upstream of the open cut pit will be diverted and temporarily contained upstream of the mine pit and overburden areas to prevent water contamination. Diverted water will be used as a clean water source for maintaining environmental flows to both Murrumbidgee and Eastern Creeks, and ultimately Wilpinjong Creek (see Section 5.6).

In other undisturbed areas, water will be diverted around mining operations through water swales and trench drains and either discharged directly to the existing creek channels or transferred to one of the clean water storage dams. Water in these storage dams will be piped to a suitable location for discharging into Murrumbidgee or Eastern Creeks. Each dam has been designed to contain the runoff from a 100-year recurrence event from its upstream catchment.

The general location of the clean water storage dams (including indicative capacity), water swales, trench drains and diversion channels for the Stage 2 ROM coal facility and for successive mining years of OC4 is shown in Plan 35, Plan 36, Plan 37, Plan 38 and Plan 39 in Volume 2. The indicative storage capacities of these dams is summarised in Table 5.5.2.

The clean water storage dams will generally be decommissioned as mining and rehabilitation progresses through the Murragamba and Eastern Creek valleys. Some of the dams may be retained in the final post-mining landscape and converted to artificial wetlands to improve habitat and biodiversity potential.

5.7.3.2.2 Dirty Water Management

Rainfall on each mine operational area will be intercepted by drainage swales and catch drains and distributed across the site. Swales and catch drains will be located strategically throughout the Stage 2 ROM coal facility, at the downslope side of each mine operation area, along the top of the OC4 pit wall and at the base of out-of-pit emplacement areas.

Surface runoff collected by these features will be gravity fed (where possible) or pumped to settlement ponds. The settlement ponds will serve as local dirty water storage ponds, with the water being re-used for dust suppression and the irrigation of rehabilitated open cut areas as mine development progresses. The drainage swales, catch drains and settlement ponds will be designed to convey peak discharges based on a design 20year recurrence storm event.

Further controls will be implemented for hard stand, workshop, office, chemical and fuel storage and refuelling areas. This will include dedicated storage areas, appropriately sized containment bunding and oil and water collection areas and separating apparatus, each designed for predicted high rainfall storm events.

As mining in OC4 progresses, the area of disturbance will increase, increasing the total volume of dirty water captured. Additional temporary settlement ponds to be progressively constructed at locations throughout the OC4 footprint as the disturbed area expands. Runoff and groundwater that accumulate in the open cut pit will be collected and either pumped or diverted to these settlement ponds for storage. This water will then be available for dust suppression within the operating areas of the open cut and on the haul roads.

The capacity of each sedimentation pond will be sized to the predicted maximum volume of surface runoff from the disturbed area in which it is located. The sizing of ponds is based on the guidelines outlined in the *'Managing Urban Stormwater Soils and Construction'* (Landcom 2004) for erosion and sediment control (the Blue Book) and generally assumes a maximum depth of 3.0 m and sufficient freeboard for a 20-year recurrence storm event.

Runoff from rehabilitated areas will be collected, conveyed and or pumped to the settlement ponds for use in dust suppression, irrigation of rehabilitated areas and other mine purposes. Selected settlement ponds will continue to operate following the completion of mining and during the rehabilitation phase until a stage where high quality water is being captured from the rehabilitated areas. These will then either be progressively decommissioned or retained in the final land use.

5.7.4 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 3.6 reports on water management during the AEMR reporting period, site water balance (section 3.6.2), surface water monitoring (section 3.6.4 and Figures 14 to 17), comparison of results to previous monitoring and background ranges (section 3.6.5 and Tables 27-30), flow monitoring of creeks (section 3.6.7 and Figures 18-22), effluent monitoring (section 3.6.8), channel stability monitoring (section 3.6.9 and Tables 34 and 35) and activities for the next reporting period (section 3.6.10).

The AEMR provides a detailed and valid representation of the status of environmental management and monitoring data and review of environmental performance of the Moolarben Coal Complex blasting activities.

5.7.5 Incidents

No licensed discharge of water to the environment occurred between 2013 and 2015 and no reportable incidents related to water management were recorded by Moolarben Coal between 2013 and 2015.

5.7.6 Community Complaints

No community complaints related to water were received by Moolarben Coal between 2013 and 2015.

5.7.7 Conclusion

<u>Water Management</u>	<u>Compliance Status</u>	<u>Compliant Ongoing</u>
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The implementation of the Water Management Plan and sub-plans prepared for the Moolarben Coal Complex project and approved by DP&E on 31 July 2015, demonstrate Moolarben Coal is managing surface water generally in accordance with Project Approval, EPL and bore licence requirements. Recent upgrades to the surface water management system, the Water Sharing Agreement with Ulan Coal, and no licensed discharges from the site during January 2013 to December 2015, have demonstrated a high level of performance of water management on the site.

5.8 Site Water Balance

[Project Approval 05_0117 Schedule 3 condition 33(b)(i)]

[Project Approval 08_0135 Schedule 3 condition 29(e)(i)]

5.8.1 Site Water Balance

The Site Water Balance was prepared by WRM Water and Environment and Dundon Consulting (suitably qualified and experienced experts approved by the Secretary of DP&E on 11 February 2015 to satisfy the requirements of Project Approval 05_0117 Schedule 3 condition 33(b)(i) as modified in June 2014 MOD 9) and Project Approval 08_0135 Schedule 3 condition 29(e)(i).

The Site Water Balance document should be updated to include the current Bore Licences and removal of superseded licences.

5.8.2 Environmental Assessment Predictions and Statement of Commitment

[Environmental Assessment Moolarben Coal Project MOD 9 to 11]

[Environmental Assessment -Moolarben Coal Project Stage 2, March 2009]

[Preferred Project Report, Stage 2, January 2012]

[Environmental Assessment - OC4 South-West Modification MOD 1 April 2015]

The Environmental Assessment for Stage 1 stated that the Moolarben Coal Project would require water for washing coal, dust suppression on stockpile areas and to irrigate areas of the site where revegetation and rehabilitation is planned. The projected annual water demand for the Moolarben Coal mine indicated that at the peak of mine production, the water demand for the Moolarben Coal Mine was estimated to be 2500 ML/year. No Statement of Commitment on site water balance was attached to Project 05_0117.

In the Environmental Assessment Moolarben Coal Project Stage 2, Worley Parsons completed water balance modelling using analysis of the site water usage for the Moolarben Coal Complex based on Stage 1 operating conditions. A maximum deficit of 1,990 megalitres (ML) was predicted for the conservative dry weather climate scenario and a maximum surplus of 220 ML is predicted for the above average climate scenario with the inclusion of pumping from the Stage 1 approved Northern borefield.

Moolarben Coal entered a Water Sharing Agreement with Ulan Coal Mines for a minimum transfer of 1,000 ML of mine water per annum from the Ulan Coal Mine to the Moolarben Coal Complex. The Environmental Assessment for the Ulan Continued Operations Project (Umwelt 2009) indicated the minimum predicted annual mine water surplus for the Ulan Coal Mine is 3,001ML. Notwithstanding other demands on this surplus water make, adequate water surplus is available at the Ulan Coal Mine to supplement the water demands of the Moolarben Coal Complex under the Water Sharing Agreement.

When considering all available sources, there is sufficient water in all years under all modelled climate scenarios, for Moolarben Coal to operate to the approved extraction rate for Stage 1 and Stage 2.

Table 5.8.2: Statements of Commitment Project Approval 08_0135

SoC No.	Statement of Commitment Site Water Balance Project Approval 08_0135	Moolarben Coal Actions / Comment	Compliance Status
21	MCM will develop a six monthly water balance for MCC operations to assist in site water management and monitoring protocols. This will be reviewed on a regular basis to account for changing mine water inflows and water management infrastructure as mining progresses. The frequency of this review will be revised after Year 3 of Stage 2 operations to the approval of relevant regulators.	WRM were engaged to review the Water Balance Model to reflect the current operational planning and demands. An interim monthly water balance is currently being developed by Moolarben Coal to provide information between model updates, which will be used to provide a range of likely outcomes for wet and dry conditions. This will be reviewed to account for changing mine water inflows and water management infrastructure as mining progresses.	Compliant Ongoing

5.8.3 Audit Review - Site Water Balance

The Site Water Balance is detailed within the Water Management Plan and includes a comparison of the modelled vs actual site inventories. The site water balance was reported in the AEMR's for the 2012-13 and 2013-14 reporting periods.

A six monthly water balance for the Moolarben operations is required to assist in site water management and monitoring protocols. Moolarben Coal Operations engaged WRM to undertake a review of the Water Balance Model to reflect the current operational planning and demands.

The draft Water Balance Model update prepared by WRM in September 2015 used an OPSIM model, that identified some improvements in the existing model. A monthly water balance program was being developed at the date of this audit to provide forecasted interim information between model updates, which will be used to provide a range of likely outcomes for wet and dry conditions. The monthly water balance program will be reviewed to account for changing mine water inflows and water management infrastructure as mining progresses.

5.8.4 Water Sharing and Water Supply

A Water Sharing Agreement (dated 10 August 2009) exists between Ulan Coal Mines Limited and Moolarben Coal Operations Pty Ltd, to ensure sufficient water for all stages of the Moolarben Coal Project and to minimise groundwater extraction as part of the site water balance for the operation of the project. The Water Sharing Agreement allows for the supply of 1,000ML/year of surplus mine water from the Ulan Coal to Moolarben Coal. The volume of water supplied to Moolarben Coal during the audit period (i.e. January 2013 to December 2015) did not exceed the annual allowance. The supply volume was reported in the Annual Environmental Management Plans for 2012-13 and 2013-14.

If water supply of privately owned land is adversely and directly impacted as a result of Moolarben Coal Complex operations, compensatory water supply measures would be implemented to provide an alternative long-term supply of water, equivalent to the loss attributed to Moolarben Coal. The results of groundwater monitoring showed minimal fluctuations in groundwater levels over the 2013 to 2015 period. There were no impacts on privately owned land during the audit period that required compensatory water supply measures to be implemented.

5.8.5 Site Water Balance Monitoring Program

An annual review of Moolarben Coal Complex operations specifically addresses water management at the Moolarben Coal Complex operations and reviews the site water balance.

WRM Water & Environment (WRM) was engaged by Moolarben Coal Operations to review and update the site water balance model to reflect the existing and proposed operations over the next 5 years. The draft Water Balance Model update prepared by WRM in September 2015 used an OPSIM model, that identified some improvements in the existing model. A monthly water balance program was being developed at the date of this audit to provide forecasted interim information between model updates, to provide a range of likely outcomes for wet and dry conditions. The monthly water balance program will be reviewed to account for changing mine water inflows and water management infrastructure as mining progresses.

The WRM draft Report for Moolarben Coal (dated 25 September 2015) concluded:

“The Moolarben water management system has a chance of accumulating significant volumes of water within both the site storages and pit voids over the next 5 years. This is due to a number of factors, including peak groundwater and the large site catchments generating significant volumes of runoff in the wettest climatic sequences.”

Given the influence of groundwater inflows on the overall site water balance, close monitoring of the pit dewatering volumes is recommended to enable verification (or otherwise) of the adopted pit groundwater inflows.”

The site water balance for 2012-2013 showed an additional 180.3ML of water was stored on site and 2013-2014 site water storages increased by 172ML. Water from rainfall runoff, ROM feed and Ulan Coal Mine (obtained under the Water Sharing Agreement) occurred but no groundwater extraction was necessary.

5.8.6 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The Moolarben Coal Project AEMR's prepared for 2012-2013 and 2013-2014, generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 3.6.1 reports on site water balance during the AEMR reporting period, showing that the site water storages increased by 172ML of water during the 2013-2014 reporting period. The site water balance during the reporting period was shown in Table 19.

Active surface water quality management strategies adopted during the reporting period included the continued installation of clean and dirty water diversion drains; building containment dams throughout the site; and ongoing monitoring of surface water surrounding the Moolarben site.

The AEMR provides a detailed and valid representation of the status of environmental management and monitoring data and review of environmental performance of the Moolarben Coal Complex blasting activities.

5.8.7 Improvement Opportunities

As there is some uncertainty surrounding the magnitude of the site water demands, particularly in relation to net CHPP consumption, WRM recommended monitoring the actual net demand for verification of the model assumptions, and to potentially increase the accuracy of the model (if the current assumptions are not accurate). WRM also recommended monitoring of the pit dewatering volumes to enable verification (or otherwise) of the adopted pit groundwater inflows to enable verification (or otherwise) of the adopted pit groundwater inflows calculated from the site water balance model

5.8.8 Conclusion

Site Water Balance	Compliance Status	Compliant Ongoing
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The review of the Moolarben Coal water management system and draft site water balance model conducted by WRM in September 2015 concluded the water management system has a chance of accumulating significant volumes of water within both the site storages and pit voids over the next 5 years. To verify the current assumptions used in the site water balance model it was recommended by WRM that close monitoring of the pit dewatering volumes to enable verification (or otherwise) of the adopted pit groundwater inflows occur. Pit dewatering volumes are monitored in accordance with the currently approved Water Management Plan. The Site Water Balance document should be updated to include the current Bore Licences and removal of superseded licences.

5.9 Surface Water Management

5.9.1 Surface Water Management Plan

[Project Approval 05_0117 Schedule 3 condition 33(b)(ii)]

[Project Approval 08_0136 Schedule 3 condition 29(e)(ii)]

To satisfy Project Approval 05_0117 Schedule 3 condition 33(b)(ii), a Surface Water Management Plan was prepared for Stage 1 of the Moolarben Coal Project, in consultation with NSW Office of Water (NOW) and the EPA, by suitably qualified and experienced persons whose appointment was approved by the DP&I.

A general review and update of the Surface Water Management Plan occurred in June 2013. A Moolarben Coal Complex wide surface water management plan was developed in July 2015 by Moolarben Coal, WRM Water & Environment, and Dundon Consulting, whose appointments were approved by the Secretary on 11 February 2015, to address the requirements of Project Approval 05_0117 Schedule 3 condition 33(a) MOD 11, and to include Project Approval 08_0135 Schedule 3 condition 29 for Stage 2.

5.9.2 Environmental Assessment Predictions and Statements of Commitment

[Environmental Assessment Moolarben Coal Project MOD 9 to 11]

[Environmental Assessment -Moolarben Coal Project Stage 2, March 2009]

[Preferred Project Report, Stage 2, January 2012]

[Environmental Assessment - OC4 South-West Modification MOD 1 April 2015]

5.9.2.1 Environmental Assessment Moolarben Coal Project

The site for the Moolarben Coal mine is located primarily within the upper Goulburn River catchment. The upper Goulburn River, above the Ulan-Cassilis Road bridge, drains a catchment area of approximately 24,550 hectares. Moolarben Creek is one of many watercourses that drain to the headwaters of the Goulburn River at Ulan. The section of the Moolarben Creek catchment covered by the Moolarben Coal Project, comprises only a small proportion of the total Moolarben Creek catchment. The minor alterations to the catchment hydrology across the mine areas is unlikely to have a significant impact on the broader hydrology of Moolarben Creek.

The Moolarben Coal project activities could adversely impact on the water quality of runoff carried by Bora Creek and subsequently on the water quality of flows carried by the upper reaches of the Goulburn River. However, it should be recognised that the section of the Goulburn River that could be affected is already a highly modified system incorporating a dam, culverts and roadway crossings as well as a significant diversion through the Ulan Coal Mine disturbed area.

The management of surface water impacts described in Environmental Assessment Moolarben Coal Project, will be subject to the implementation of the site Water Management Plan. Surface water management within the mine infrastructure area will be consistent with guidelines outlined in the *'Managing Urban Stormwater Soils and Construction'* (Landcom 2004) for erosion and sediment control.

The potential surface water impacts that result from MOD 9 will be managed under the existing surface water management system and in accordance with the Water Management Plan for the Moolarben Coal Project. The Water Management Plan and relevant sub-plans will be reviewed and updated as required to accommodate the proposed modification.

Table 5.9.2.1: Statements of Commitment - Consolidated Project Approval 05_0117

SoC No.	Statement of Commitment Consolidated Project Approval 05_0117	Moolarben Coal Action / Comment	Compliance Status
7	<p>Mine Water Sharing Plan</p> <p>Moolarben will seek to enter into a mine water sharing plan in respect of mining operations of the Ulan Coal Mine and Wilpinjong Coal Mine under the auspices of the Director General of the Department of Planning and as may be required by any conditions of project approval for the Moolarben Coal Project.</p>	<p>A Water Sharing Agreement between Moolarben Coal and Ulan Coal was signed on 10 August 2009 and implemented. The Agreement provides for Moolarben Coal to receive 1000ML of water per year from Ulan Coal, as required.</p>	Compliant Ongoing
13	<p>Flows in the Goulburn River</p> <p>Co-operative Monitoring Program Moolarben will use its reasonable endeavours to agree and implement a monitoring program in cooperation with the Ulan and Wilpinjong mines (and to the reasonable requirement of the Director General who will consult with the NOW) to identify any potential for any change in the water flows in the Goulburn River due to mining at the Moolarben, Ulan and Wilpinjong mines and as may be required by any conditions of project approval for the Moolarben Coal Project.</p>	<p>A Data Sharing Deed signed on 27 March 2012, provides the protocol for sharing of environmental monitoring data between Moolarben Coal, Ulan Coal and Wilpinjong Coal. Six-monthly meetings are held between the parties to discuss and implement integrated monitoring programs to assess any cumulative water quality impacts, co-ordinate water quality monitoring programs as far as practicable, undertake joint investigations/studies if cumulative impacts are considered likely; and co-ordinate modelling programs for validation, re-calibration and re-running of groundwater models.</p>	Compliant Ongoing
14	<p>Mine Water Management and Salinity</p> <p>Sharing with Ulan and Wilpinjong, Moolarben will use its reasonable endeavours to agree and implement a co-operative arrangement with and enter into a life of mine agreement between the Ulan and Wilpinjong mines (the "Mines") to establish, implement and operate water sharing and use plans and procedures with the objective of minimising the removal by the Mines of water from the environment and the discharge of mine waters by the Mines to the environment and which shall address the ability of the Mines to utilise mine water produced by the Mines between the Mines and as may be required by any conditions of project approval for the Moolarben Coal Project.</p>	<p>The Water Sharing Agreement between Moolarben Coal and Ulan Coal was signed on 10 August 2009 and implemented. The Agreement provides for Moolarben Coal to receive 1000ML of water per year from Ulan Coal, as required. The Data Sharing Deed signed on 27 March 2012, provides the protocol for sharing of environmental monitoring data between Moolarben Coal, Ulan Coal and Wilpinjong Coal.</p>	Compliant Ongoing

SoC No.	Statement of Commitment Consolidated Project Approval 05_0117	Moolarben Coal Action / Comment	Compliance Status
18	Additional Management and Mitigation Modification of Stage 1 Moolarben commits to implementing the following management and mitigation measures to ensure that impacts associated with modifications to the Moolarben Coal Project are minimised.	The Water Management Plan and Surface Water Management Plan provide procedures and mitigation measures to manage impacts from the Moolarben Coal Complex operations	Compliant Ongoing

5.9.2.2 Environmental Assessment Moolarben Coal Project Stage 2 (2009)

A Surface Water Management Strategy was prepared by Worley Parsons as part of the preparation of the Environmental Assessment Moolarben Coal Project Stage 2 section 5.5 (2009) and Preferred Project Report section 4.7 (2012).

The conceptual Water Management Strategy for the Moolarben Coal Complex is based on the following broad strategic objectives:

- Clean surface water runoff is diverted around site and used to maintain environmental flows;
- Runoff from disturbed or operational areas is captured and stored in strategically located sedimentation ponds which will be designed to have a capacity of 1 in 50year rainfall event and used for dust suppression and for the irrigation of rehabilitated disturbed areas;
- Mine water is captured and utilised onsite and is not discharged under Stage 2;
- Water sharing with neighbouring coal mines is undertaken, where possible;
- Development and implementation of a Surface Water Monitoring Program and a Surface Water and Groundwater Response Plan for the MCC incorporating measures and requirements specific to the Preferred Project;
- Re-use of mine water is maximised; and
- Development and implementation of a detailed Creek Rehabilitation Plan for Murragamba and Eastern Creeks.

The surface water management for the Stage 2 operations will be managed under the existing surface water management system in accordance with the Water Management Plan for the Moolarben Coal Project. The Water Management Plan and relevant sub-plans will be reviewed and updated as required to accommodate the Stage 2 works.

Table 5.9.2.2: Statements of Commitment - Project Approval 08_0135 - Stage 2

SoC No.	Statements of Commitment Surface Water Project Approval 08_0135	Moolarben Coal Actions / Comment	Compliance Status
17	MCM will implement the water management and mitigation measures described in the PRP and subsequent supporting documents.	Moolarben Coal has implemented the water management and mitigation measures described in the PRP (Surface Water Management Plan, July 2015).	Compliant
19	MCM will develop a surface water monitoring program to quantify the streamflow and water quality characteristics within Murragamba and	Surface Water Management Plan, section 3 addresses a surface water monitoring program to quantify the streamflow and water quality. Results of surface water monitoring are reported in the Monthly	Compliant Ongoing

SoC No.	Statements of Commitment Surface Water Project Approval 08_0135	Moolarben Coal Actions / Comment	Compliance Status
	Eastern Creeks for existing conditions prior to mining of the creek lines.	Environmental Monitoring Reports and AEMR's.	
20	MCM will manage rainfall run-off from MCC mine disturbed areas to prevent contamination of downstream water sources from sediment laden water, unless otherwise approved under a relevant Environment Protection Licence.	Surface Water Management Plan section 4 addresses rainfall run-off from mine disturbed areas. No incidents related to contamination of downstream water sources caused by runoff from mine disturbed areas occurred between 2012-2015.	Compliant Ongoing
26	MCM will endeavour to implement an integrated monitoring program for the MCC, with UCML and Wilpinjong Coal Mine for data-sharing.	A Data Sharing Deed signed on 27 March 2012 provides the protocol for sharing of environmental monitoring data between Moolarben Coal, Ulan Coal and Wilpinjong Coal. Six-monthly meetings are held between the parties to discuss and implement integrated monitoring programs to assess any cumulative water quality impacts, co-ordinate water quality monitoring programs as far as practicable, undertake joint investigations/studies if cumulative impacts are considered likely; and co-ordinate modelling programs for validation, re-calibration and re-running of groundwater models.	Compliant Ongoing
27	MCM commits to realign and reconstruct the mined sections of Murragamba and Eastern creeks to meet geomorphological, hydraulic and ecological performance and completion criteria developed in consultation with relevant regulators.	Surface Water Management Plan section 8.8 addresses realignment and reconstruction of mined sections of Murragamba and Eastern creeks. Moolarben Coal is progressing the development of detailed creek diversion plans in consultation with relevant government authorities.	Not yet triggered
28	MCM will develop operational criteria for the realigned sections of Murragamba and Eastern creeks in consultation with relevant regulators and install diversions around the realigned sections of creek until such time as they become operational.	Surface Water Management Plan section 8.8 addresses operational criteria for the realigned sections of Murragamba and Eastern creeks in consultation with relevant government authorities.	Compliant Ongoing
29	As a part of its revised Water Management Plan, MCM will prioritise UCML surplus water for use within the MCC, to minimise the need for extraction from the Northern Borefield.	Management of surplus water within the Moolarben Coal Complex will be addressed in the revised Site Water Balance sections 5.6 and 7.3, to minimise the need for extraction from the Northern Borefield.	Compliant Ongoing

5.9.3 Audit Site Inspection - Surface Water Management

During the audit site inspection, it was observed that water storages contained adequate freeboard and upgrades to the surface water management system continue to be undertaken around the complex. A series of clean water diversions and banks have been constructed at Moolarben Coal to prevent rainfall runoff from entering the dirty water management system and to prevent soil erosion and sediment loss. Upgrades to the clean water management system are being undertaken to coincide with the Moolarben Coal Complex development.

Prior to Project Approval 05_0117 MOD 9 approval in June 2014, the 100 year ARI design criteria was not specified. All new clean water dams are now designed to cater for a 100 year ARI flood and mine water storages are designed to store a 100 year ARI 72hour storm event, in accordance with Project Approval 08_0135 Schedule 3 condition 28.

During the audit inspection it was observed that Moolarben Coal manage rainfall runoff from areas disturbed by mining in accordance with regulatory and Project Approval requirements to prevent soil erosion and contamination of downstream water sources from sediment laden water. There have been no licensed or unlicensed discharges of mine water or dirty water from the Moolarben Coal site between 2013 and 2015. There have been no incidents related to contamination of downstream water sources caused by runoff from mine disturbed areas.



Plate 5.9.3: Effluent irrigation system adjacent to the application area.

The irrigation area appeared to be well managed with no evidence of erosion caused by irrigation runoff. Expansion of the irrigation area was occurring at the time of this audit.

The EPA issued a Formal Warning Notice on 18 December 2014 in relation to the non-compliance EPL 12932 conditions L3.1 and M7.1 that required monitoring of volume of effluent to be recorded daily during discharge, from Points 5, 22 and 23 under EPL 12932 conditions L3.1 and M7.1. (Refer to section 5.9.7).

Effluent application to land licensed under the EPL 12932 condition O4 occurs consistently to the approved irrigation areas. Following the Formal Warning Notice, daily readings were taken and a data logger was installed at the discharge locations. A Variation to the EPL 12932 on 28 July 2015 removed the requirement for daily monitoring of the discharge from points 5, 22 and 23.

Since the previous audit (Umwelt 2013), the EPL had been amended to include a Pollution Reduction Program (PRP). The PRP required Moolarben Coal to complete water management system upgrade works in accordance with the Moolarben Coal Operations Pty Ltd Stage 1 Open Cut & CHPP Water Management Assessment and Upgrade Proposal Report.

The works included increasing the capacity of Moolarben Coal settlement ponds and installation of new dams and clean water diversions at the Moolarben Coal Handling Preparation Plant (CHPP). The proposed upgrades were approved by the EPA under the PRP and the majority of works were completed by 18 December 2015. At the time of the audit (December 2015), works to remediate the rail loop were currently ongoing in accordance with the EPL and are due for completion by 18 April 2016.



Increased capacity of Moolarben Coal Sediment Dam 106 to collect 100 year ARI flood



Sediment Dam, new dams and clean water diversions at the Moolarben Coal CHPP rail loop.

Upgrades to the surface water management system surrounding the CHPP were observed to be completed at the time of audit.



Sediment Dam completed on the northern side of the rail loop.

The works included increasing the capacity of Moolarben Coal settlement ponds and installation of new dams and clean water diversions at the Moolarben CHPP. The proposed upgrades were approved by the EPA under the PRP and the majority of works were completed by the 18 December 2015. At the time of the audit (December 2015), works to remediate the rail loop were currently ongoing and in accordance with the EPL are due for completion by 18 April 2016. Upgrades to the surface water management system surrounding the Coal Handling Preparation Plant (CHPP) were observed to be completed at the time of audit.

5.9.4 Water Quality Criteria

Water quality criteria are specified in the EPL 12932 condition L2.4 for EPA licensed discharge points.

Table 5.9.4: Water Quality Criteria – EPL 12932 condition L2.4

Pollutant	Unit of Measure	50%ile Concentration Limit	100%ile Concentration Limit
Discharge Points 1, 2 and 28			
Conductivity (EC)	µS/cm	800	900
pH	pH	-	6.5 – 8.5
Oil and Grease	mg/l	-	10
Total Suspended Solids	mg/l	-	50
Turbidity	NTU	-	25
Discharge Points 24, 26 and 29			
pH	pH	-	6.5 – 8.5
Total Suspended Solids	mg/l	-	50
Turbidity	NTU	-	25

Assessment of all other water quality results is conducted using the ANZECC and ARMCANZ approach recommended for developing site-specific trigger values for slightly to moderately disturbed ecosystems by formulating trigger values based on the 80th percentile of the site specific monitoring data.

Comparison of the baseline monitoring results in the Environmental Assessments for the Moolarben Coal project to the ANZECC (2000) default trigger values indicates that the existing water quality in the creek systems surrounding the Moolarben Coal project have the potential to exceed the ANZECC default trigger values for pH, EC and turbidity.

The baseline data has been analysed to determine the trigger values for pH, EC and turbidity in the surrounding catchments at the Moolarben Coal Complex.

Trigger values for water quality in Goulburn River, Bora Creek, Moolarben Creek and Murragamba Creek have been based on the baseline water quality data and are presented in Table 19. (Where the 80th percentile value is lower than the ANZECC (2000) guidelines, the acceptable limits have been selected as the trigger values for that specific parameter.

Waterway	pH		EC (µS/cm)		Turbidity (NTU)	
	20 th /80 th %ile Trigger Value	ANZECC Guideline	80 th %ile Trigger Value	ANZECC Guideline	80 th %ile Trigger Value	ANZECC Guideline
Goulburn River	6.2 – 7.0	6.5 – 8.0	990	350	11	25
Bora Creek	6.4 – 7.2		144		214	
Moolarben Creek	6.1 – 7.0		1,130		35	
Murragamba Creek	6.0 – 6.8		1,166		206	

5.9.5 Monitoring Program

A monitoring data sharing agreement was established on the 27 March 2012, between Moolarben Coal, Ulan Coal and Wilpinjong Coal Mine for data-sharing. Six monthly meetings related to the data sharing agreement are held between the three sites.

Flow monitoring is carried out by Ulan Coal at Goulburn River and Moolarben Creek and additional flow monitoring in Wilpinjong Creek downstream of the Moolarben Coal Complex is carried out by the WCM for Moolarben Coal. Flow data is accessed as required and Moolarben Coal includes the results in the Annual Review (AEMR) Figures 19 to 22.

Surface water monitoring is conducted generally in accordance with the Surface Water Management Plan and EPL 12392 condition P1.3, L2.4 and L3.1. The location of the EPA Monitoring Sites (EPL 112932 condition 1.3) are shown in the Surface Water Management Plan Figure 14 and the surface water monitoring program sites are shown on Figure 15.

Monitoring results are reported in the Monthly Environmental Monitoring Reports, uploaded to the Moolarben Coal website, and a summary of all results is provided in the AEMR section 3.6.

5.9.6 Monitoring Results

The surface water quality results recorded between January 2013 and December 2015 were generally consistent with the background water quality results. Instances where the surface water quality values exceeded the criteria were influenced by extended dry periods with low or no flow, with were no high results attributable to Moolarben Coal operations.

There were no licenced discharges from the Moolarben Coal Complex site between January 2013 and December 2015 and no reportable environmental incidents related to unauthorised discharges. (It was observed that water storages contained adequate freeboard and upgrades to the surface water management

system continue to be undertaken at Moolarben Coal Complex). The surface water management system is considered to be controlling the surface water quality consistent with the EPL criteria and surface water environmental assessment predictions.

5.9.7 Incidents

EPA Formal Warning Notice

Following a review of the completed 2013/2014 Annual Return for EPL 12932, the EPA noted that average discharge volumes provided for licence points 5, 22 and 23 were reported. The requirement of monitoring the daily volume under EPL 12932 condition M7.1 during discharge was not being met. The EPA considered it likely that volume monitoring at licence points 5, 22 and 23 was only undertaken on a quarterly basis during the 2012/2013 reporting period and this non-compliance was not reported in section C1 of the Annual Return.

The EPA issued a Formal Warning Notice No. 1527400 on 18 December 2014 in relation to the required monitoring of volume of effluent on a daily basis during discharge from Points 5, 22 and 23 under EPL 12932 conditions L3.1 and M7.1. On 28 July 2015, a Variation to EPL 12932 removed the requirement for monitoring the discharge volume limit for points 5, 22 and 23.

No other reportable incidents related to water quality were recorded by Moolarben Coal between 2013 and 2015.

5.9.8 Community Complaints

No community complaints related to water quality were received by Moolarben Coal between January 2013 and December 2015.

5.9.9 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 3.6 reports on water management during the AEMR reporting period, site water balance (section 3.6.2), surface water monitoring (section 3.6.4 and Figures 14 to 17), comparison of results to previous monitoring and background ranges (section 3.6.5 and Tables 27-30), flow monitoring of creeks (section 3.6.7 and Figures 18-22), effluent monitoring (section 3.6.8), channel stability monitoring (section 3.6.9 and Tables 34 and 35) and activities for the next reporting period (section 3.6.10).

The AEMR provides a detailed and valid representation of the status of surface water management and monitoring data review of environmental performance of the Moolarben Coal Complex.

5.9.10 Matters Raised by Relevant Agencies

Department of Primary Industries - Water requested that the surface water management be audited simultaneously with the general site environmental audit:

Table 5.6.5.9: Department of Primary Industries – Surface Water Matters Raised

DPI-Water Matters Raised	Audit Findings
Review Site Water Management Plan/s. The audit should include a review of the currency of plans and compliance with them.	The Moolarben Coal Water Management Plan and sub-plans (Site Water Balance, Surface Water Management Plan and Groundwater Management Plan required under Project Approval 05_0117 Schedule 3 conditions 33(b) and Project Approval 08_0135 Schedule 3 condition 29(e) were approved by DP&E on 31 July 2015. The Water Management Plan and sub-plans have been implemented and the Moolarben Coal operations have demonstrated compliance with the requirements of the plans.
Review of water monitoring (surface water and groundwater). Assess whether water monitoring is being completed in accordance with the project approval and the Site Water Management Plan(s).	Monitoring results presented in AEMRs and monthly monitoring reports demonstrate compliance with the project approval and the Site Water Management Plan(s).

There were no licenced discharges from the Moolarben Coal Complex site between January 2013 and December 2015 and no reportable environmental incidents related to unauthorised discharges.

5.9.11 Conclusion

Surface Water Management	Compliance Status	Compliant Ongoing
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The observation of implementation of the Surface Water Management Plan and desktop review of water management documents, demonstrates Moolarben Coal appear to be managing surface water generally in accordance with Project Approval, EPL and bore licence requirements. Recent upgrades to the surface water management system, the Water Sharing Agreement with Ulan Coal and no licensed discharges from the site, have resulted in a demonstrated high level of performance.

5.10 Groundwater Management

[Project Approval 05_0117 Schedule 3 condition 33(b)(iii)]

[Project Approval 08_0136 Schedule 3 condition 29(e)(iii)]

5.10.1 Groundwater Management Plan

The Groundwater Management Plan was prepared in consultation with NSW Office of Water (NOW) and the EPA, by suitably qualified and experienced persons whose appointment was approved by the DP&I, for Stage 1 of the Moolarben Coal Project to satisfy Project Approval 05_0117 Schedule 3 condition 33(b)(iii).

A general review and update of the Groundwater Management Plan to integrate the Stage 1 MOD 11 occurred in June 2013. A revised version was developed in July 2015 by MCO, WRM Water & Environment, and Dundon Consulting, whose appointments were approved by the Secretary on 11 February 2015. to address the requirements of Project Approval 05_0117 Schedule 3 condition 33(b)(iii) MOD 11, and to include Project Approval 08_0135 Schedule 3 condition 29(e)(iii) for Stage 2.

The Groundwater Management Plan should be updated to include the current Bore Licences (issued in November and December 2015) and removal of superseded licences from the Groundwater Management Plan.

5.10.2 Environmental Assessment Predictions and Statements of Commitment

[Environmental Assessment Moolarben Coal Project MOD 9 to 11]

[Environmental Assessment -Moolarben Coal Project Stage 2, March 2009]

[Preferred Project Report, Stage 2, January 2012]

[Environmental Assessment - OC4 South-West Modification MOD 1 April 2015]

5.10.2.1 Environmental Assessment Moolarben Coal Project, Stage 1

The conceptual groundwater management strategy for the Moolarben Coal Complex described in the Environmental Assessment Moolarben Coal Project is based on the following broad strategic objectives:

- Groundwater inflows to open cut mining areas are used for mining purposes;
- Groundwater from dewatering bores or production bores is used for mining purposes.

The Environmental Assessment for MOD 9 stated that the “groundwater systems within and surrounding the Moolarben Coal Project are well understood, with the Ulan Seam the only geological unit that could be termed an ‘aquifer’ within the sequence that may discharge to, or be impacted by MOD 9”. MOD 9 will result in a negligible increase in seepage rates to the mine and ‘nil’ impact on the surrounding groundwater regime over the approved impacts from Stage 1.

Groundwater will continue to be managed under the existing groundwater management system and in accordance with the Water Management Plan for the Moolarben Coal Project.

Table 5.10.2.1: Groundwater Statements of Commitment - Consolidated Project Approval 05_0117

SoC No.	Statement of Commitment - Groundwater Project Approval 05_0117	Moolarben Coal Actions / Comment	Compliance Status
18 Water	<p>Water</p> <ul style="list-style-type: none"> • Water pressure will be monitored at the inlet and outlet of the water sharing and borefield pipeline network, and the entire length of pipeline be inspected regularly. • In the event that a leak or loss of pressure is detected in the water sharing or borefield pipeline network, pumping in that portion of the pipeline network will cease and the resultant cause investigated and remediated. • Management and monitoring of surface water and groundwater will be undertaken in accordance with an approved Water Management Plan, which will be reviewed and updated, as necessary, to include the Open Cut 1 and Open Cut 2 extension areas and additional surface water management infrastructure. As part of this review, MCO will liaise with the NOW on the water licensing requirements for the open cut extension areas. • MCO is committed to 	<p><i>Project Approval 05_0117 Schedule 3 condition 33(a)</i></p> <p><i>Project Approval 08_0135 Schedule 3 condition 29(e)</i></p> <ul style="list-style-type: none"> • Water pressure is monitored at the inlet and outlet of the water sharing and borefield pipeline network, and the pipeline is inspected regularly. • Management and monitoring of surface water and groundwater is conducted in accordance with the approved Water Management Plan, reviewed and updated, to include the OC1 and OC2 extension areas and additional surface water management infrastructure. As part of this review, MCO will liaise with the NOW on the water licensing requirements for the open cut extension areas. • MCO is committed to mine plan sequencing and the commitment to progressive rehabilitation including returning rehabilitated areas to clean water catchments as soon as practicable 	Compliant Ongoing

SoC No.	Statement of Commitment - Groundwater Project Approval 05_0117	Moolarben Coal Actions / Comment	Compliance Status
	the effective management of water in the modified landform and where required will develop strategies to this effect, including returning rehabilitated areas to clean water catchments as promptly as practically possible. • MCO will abide by the rules of any relevant water sharing plan and return water where required.	• MCO abides by the rules of the Water Sharing Agreement with Ulan Coal.	

5.10.2.2 Environmental Assessment Stage 2 PPR section 4.6

RPS Aquaterra revised the Stage 2 Environmental Assessment Groundwater Impact Assessment for the Preferred Project Report to account recent approvals for the Ulan and Wilpinjong coal mines, the Stage 1 Regional Groundwater and Surface Water Study (Aquaterra 2009), and issues raised in the independent peer review of the Stage 2 Environmental Assessment.

It was concluded that the most significant impacts to groundwater levels are predicted to occur within the Permian coal measures, specifically within the Ulan Seam. Murragamba Creek, Eastern Creek and Wilpinjong Creek are ephemeral systems in which baseflow is insufficient to maintain permanent creek flow.

The groundwater model predicted a decrease in baseflow in both reaches of Wilpinjong Creek in areas adjacent to Open Cut 4. Across the Wilpinjong Creek catchment total predicted baseflow volumes at the start of operations is approximately 364 ML per annum. This is predicted to decrease to approximately 219 ML per annum at the end of MCC activities but is predicted to recover to approximately 370 ML per annum at the end of the post-mining recovering period.

The model also predicted there will be no loss of flows in Wilpinjong Creek due to leakage to the groundwater system as a result of the Moolarben Coal Complex operations.

Goulburn River, Moolarben Creek and Lagoon Creek baseflow impacts were addressed in the Stage 1 Environmental Assessment and no additional baseflow impacts on these streams are predicted to occur as a result of Stage 2.

Most of the springs and groundwater seeps in the Murragamba and Eastern creek valleys have been degraded or modified by intensive agricultural activities or dug out to provide in-line stock watering dams. These GDEs range in size from about 0.01 to 0.2 ha. No additional impacts are predicted to Groundwater Dependent Ecosystems and there will be negligible changes to groundwater inflow to the open cuts to that predicted in the Stage 2 Environmental Assessment.

Table 5.10.2.2: Groundwater Statements of Commitment Project Approval 08_0135

SoC No.	Statements of Commitment - Groundwater Project Approval 08_0135	Moolarben Coal Actions / Comment	Compliance Status
18	MCM will continue to monitor groundwater impacts on surrounding privately owned bores. In the event that it is demonstrated that water levels in existing landholder bores decline as a consequence of the MCC,	Monitoring of surrounding privately owned bores is addressed in Groundwater Management Plan section 6.1.	Compliant Ongoing

SoC No.	Statements of Commitment - Groundwater Project Approval 08_0135	Moolarben Coal Actions / Comment	Compliance Status
	leading to an adverse impact on groundwater supply, MCM will: • engage an appropriately qualified and experienced hydrogeologist to investigate the cause of the impact and recommend an appropriate action response plan; and • provide an alternate interim water supply or commensurate compensation as agreed to with the landholder.	RPS Aquaterra (2011) predicted drawdown impacts from the Moolarben Coal Complex development on privately owned bores within 10km of the mine would not exceed 0.6m, therefore the Molaben Coal Complex would have a negligible effect on groundwater users. No requests for compensatory water supply were received by Moolarben Coal between 2013 and 2015.	
22	Collated groundwater monitoring data will be reviewed annually to assess the impacts of the MCC on the groundwater environment and to compare observed impacts with those predicted from groundwater modelling.	Groundwater monitoring data is reviewed annually and reported in the AEMR's comparing observed impacts with those predicted from groundwater modelling.	Compliant Ongoing
23	The groundwater monitoring program will be revised to include additional piezometers in alluvial areas, including palaeochannel areas, potentially affected by the MCC.	The groundwater monitoring program will be revised to include additional piezometers in alluvial areas, including palaeochannel areas, potentially affected as the mining operations progress.	Compliant Ongoing
24	A groundwater modelling post-audit and model re-calibration (where required) will be carried out 2 years (and 5 yearly thereafter) after commencing Stage 2 coal extraction. Should any groundwater review or post-audit indicate a significant variance from the model predictions, an appropriate response will be implemented in consultation with NOW and DP&I.	Stage 2 site development only commenced in September 2015.	Not triggered
25	MCM will acquire relevant licences under the Water Act 1912 and Water Management Act 2000 as required (or implement other such ameliorative measures as agreed with relevant regulators, such as return flows or other such reasonable and feasible mitigation measures to reduce the total direct and indirect water take of the MCC from alluvial and connected surface water sources).	A Regional Water Supply and Monitoring Investigation was undertaken and submitted to DPI in 2009. Water extraction licences for the site are current. Water Licences Report prepared for 2014-15. A Water Sharing Agreement between Ulan Coal and Moolarben Coal for the supply of 1,000ML/year of surplus mine water from the Ulan Coal. Site Water Balance reported in AEMR's.	Compliant Ongoing

SoC No.	Statements of Commitment - Groundwater Project Approval 08_0135	Moolarben Coal Actions / Comment	Compliance Status
26	MCM will endeavour to implement an integrated monitoring program for the MCC, with UCML and Wilpinjong Coal Mine for data-sharing.	A Data Sharing Deed signed on 27 March 2012 provides the protocol for sharing of environmental monitoring data between Moolarben Coal, Ulan Coal and Wilpinjong Coal. Six-monthly meetings are held between the parties to discuss and implement integrated monitoring programs to assess any cumulative water quality impacts, co-ordinate water quality monitoring programs as far as practicable, undertake joint investigations/studies if cumulative impacts are considered likely; and co-ordinate modelling programs for validation, re-calibration and re-running of groundwater models.	Compliant Ongoing

5.10.3 Groundwater Dependent Ecosystems

The Environmental Assessment for Stage 1 MOD 9 identified 'The Drip', as an important local seepage feature located to the north of the Goulburn River, representing the only significant seep/spring Groundwater Dependant Ecosystems within the Moolarben Coal locality, with vegetation reliant on this surface expression of groundwater. 'The Drip' is located approximately 6 km to the north of the Moolarben Coal OC 1 and OC2 extension areas. The groundwater impact assessment (AGE 2013) prepared for MOD 9 concluded that there would be negligible change in flows to surface water features and no change to 'The Drip'.

There were scattered individuals of River Red Gums, known for their groundwater dependence, recorded approximately 500 m west of the proposed Open Cut 2 extension along Moolarben Creek. The groundwater impact assessment (AGE 2013) prepared for MOD 9 concluded that there would be negligible change in flows to surface water features including Moolarben Creek and there will be no impact on the River Red Gums along Moolarben Creek.

As there are no other identified GDEs within or in the relative vicinity of the proposed extension areas, MOD 9 will not impact on GDEs.

The Environmental Assessment of potential for Groundwater Dependant Ecosystems (GDEs) in Stage 2 occurring within the Moolarben Coal Project boundary was investigated by Ecovision Consulting, with mapping of biological values against groundwater resources for the Environmental Assessment Stage 2.

Most of the springs and groundwater seeps in the Murrumbidgee and Eastern Creek valleys have been degraded or modified by intensive agricultural activities or dug out to provide in-line stock watering dams. These GDEs range in size from about 0.01 to 0.2 ha. These small degraded GDEs do not support species of conservation interest.

Eastern Creek valley hosts two larger spring-fed GDEs, one at the head of the valley, the other along the lower reaches of Eastern Creek. The GDE located at the head of the valley comprises vegetation species similar to that

found at other GDEs in the Murrumbidgee and Eastern creek valleys. This GDE will not be impacted by mining. The other spring-fed GDE along the lower reaches of Eastern Creek will be impacted by mining in OC4.

The assessment of riparian vegetation did not indicate any specific riparian plant communities that could be considered GDEs. The groundwater assessment has indicated that there is negligible baseflow to Murrumbidgee and Eastern creeks. However, there are pools and soaks along the creeks that indicate some of the tree cover along Murrumbidgee, Eastern and Wilpinjong creeks is potentially supported by a locally present shallow water table.

No additional impacts are predicted to Groundwater Dependent Ecosystems and there will be negligible changes to groundwater inflow to the open cuts to that predicted in the Stage 2 Environmental Assessment.

5.10.4 Audit Findings - Groundwater

Moolarben Coal is licensed to extract and monitor groundwater under the *Water Act 1912* and *Water Management Act 2000*.

A Water Licences Report was prepared for 2014-15 addressed current licenses, existing groundwater conditions, and extraction and monitoring methodologies. Groundwater extraction is monitored by flow meters attached to the bore headworks or along the extraction pipelines. Extraction of groundwater has rarely been required due to the altered groundwater gradient associated with dewatering at nearby mining operations.

The volume of groundwater extracted between 2013 and 2015 did not exceed the approved extraction limit of 2,950ML in any 12month period.

Groundwater monitoring is undertaken at borehole locations in accordance with the Groundwater Management Plan, Bore Licences and Project Approvals. Monitoring results show that groundwater quality and levels have been generally consistent over the 2013 to 2015 period with only minor fluctuations often attributed to nearby mining operations or natural groundwater variation.

The record of water take is provided in the annual site water balance, reported in the AEMR's. Actual pumping records were not available at the time of the audit. The Water Licensing Report 2014-15 outlines water extraction licenses for Moolarben Coal Complex. Bore Licences 20BL172002 (Mining) and 20BL173923 (Mining/Industrial) were issued for the site under the *Water Act 1912* section 115 consolidating the production and monitoring bores. There are three licences issued under the *Water Management Act 2000* (WAL36340, 20AL213310 and 20AL213311) that are current and exist in perpetuity.

5.10.5 Groundwater Quality Criteria

Baseline groundwater monitoring results indicate that baseline values of pH and electrical conductivity in the vicinity of the Moolarben Coal Complex, vary across a wide range and can be outside of the ANZECC (2000) values for ecosystem protection.

Site specific trigger levels based on the baseline data have therefore been developed to monitor the impact of the Moolarben Coal Complex. The NSW Aquifer Interference Policy (NOW, 2012) sets out the minimal impact considerations for aquifer interference activities for less productive groundwater sources:

'Any change in the groundwater quality should not lower the beneficial use category of the groundwater source beyond 40m from the activity.'

5.10.6 Groundwater Monitoring Program

The Water Management Plan and Groundwater Management Plan monitoring program (groundwater) have been implemented in accordance with relevant approvals and licences. Groundwater monitoring is undertaken 6 monthly with pH and EC recorded at the time of sampling each bore and samples sent to a NATA registered laboratory for analysis (refer to Table 5.10.5).

Moolarben Coal has installed hard rock and alluvial monitoring piezometers associated with water extraction with each of the monitoring bores fitted with an automatic data logger set to record water levels.

Table 5.10.6: Groundwater Quality Monitoring Program

Parameters	Groundwater Quality Monitoring
Physical	EC, TDS, TSS and pH
Major cations	Calcium, magnesium, sodium, potassium
Major Anions	Carbonate, bicarbonate, chloride and sulphate
Dissolved Metals	Aluminium, arsenic, boron, cobalt, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver and zinc
Nutrients	Ammonia, nitrate, phosphorus, reactive phosphorus
Other	Fluoride

Moolarben Coal have also established a program to validate the groundwater model for the operations and to compare the monitoring results with modelled predictions. Re-calibration of the groundwater model occurred in 2012. The groundwater model is required to be validated 2 years from commencement of coal extraction for Stage 2 and each 5 years thereafter. Validation of the groundwater model will next be required in June 2018. Groundwater extraction and monitoring results continue to be reported in the site water balance, Monthly Environmental Monitoring Reports, and in the AEMR.

5.10.7 Monitoring Results

Groundwater monitoring bore hydrographs have not shown consistent groundwater levels over the 2013 to 2015 period, and groundwater extraction to date has not indicated impact to the creeks in the area of the Moolarben Coal mine activities.

Groundwater quality monitoring has exhibited generally consistent results within each bore with some variations in quality noted in the groundwater samples from the Upper, Middle and Lower Permian bores for EC levels.

5.10.8 Incidents

No incident related to groundwater levels or quality was recorded by Moolarben Coal between 2013 and 2015.

5.10.9 Community Complaints

No complaints related to groundwater were received by Moolarben Coal between 2013 and 2015.

5.10.10 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 3.7 reports on groundwater management, monitoring and trigger levels during the AEMR reporting period, (section 3.7.2 and Tables 36 and Figures 24 to 50), comparison of results to previous groundwater monitoring (section 3.7.3 and Tables 39 to 41) and activities for the next reporting period (section 3.13.4).

The AEMR provides a detailed and valid representation of the status of groundwater management and monitoring data review of environmental performance of the Moolarben Coal Complex.

5.10.11 Matters Raised by Relevant Agencies

Department of Primary Industries - Water requested that the site water licenses be audited simultaneously with the general site environmental audit, as well as:

Table 5.10.11: Department of Primary Industries – Water Consultation

DPI-Water Matters Raised	Audit Findings
Review Site Water Management Plan/s. The audit should include a review of the currency of plans and compliance with them.	The Moolarben Coal Water Management Plan and sub-plans (Site Water Balance, Surface Water Management Plan and Groundwater Management Plan required under Project Approval 05_0117 Schedule 3 conditions 33(b) and Project Approval 08_0135 Schedule 3 condition 29(e) were approved by DP&E on 31 July 2015. The Water Management Plan and sub-plans have been implemented and the Moolarben Coal operations have demonstrated compliance with the requirements of the plans.
Review metering of water take and assess whether metering complies with license and approval requirements, and any requirements specified in the Site Water Management Plan(s).	Site water balance is reported in AEMRs. Metering was not reviewed on site. The Auditor has no reason to believe that this operation would be non-compliant. WRM conducted a review of the Water Balance Model to reflect the current operational planning and demands. A monthly water balance is currently being developed by Moolarben Coal to provide information between model updates, to provide a range of likely outcomes for wet and dry conditions, to account for changing mine water inflows and water management infrastructure as mining progresses.

DPI-Water Matters Raised	Audit Findings
Review of water monitoring (surface water and groundwater). Assess whether water monitoring is being completed in accordance with the project approval and the Site Water Management Plan(s).	Monitoring results presented in AEMRs and monthly monitoring reports demonstrate compliance with the Project Approval and the Site Water Management Plan(s).
License/Approval status – ensure all licenses and approvals held under the Water Act 1912 and Water Management Act 2000 are current.	Information detailed in Water Management Plan and Water Licence Report 2014-15, listed all water extraction and groundwater monitoring licences that were current until November 2015. Licences 20BL173923 and 20BL172002 were issued on 26 November 2015 consolidating all previous extraction licences. all monitoring and test bores were amalgamated into one licence (20BL173935) issued 15 December 2015.
Review licence and approval conditions and ensure compliance, particularly in relation to the following groundwater licenses: o 20BL172002 (Mining) o 20BL173923 (Mining/Industrial)	Licences 20BL173923 and 20BL172002 are both current (issued in November 2015) and Moolarben Coal was compliant with all conditions.
Reconcile records of take of water with the relevant Water Access Licenses and Property Accounts to determine if take of water from each water source is within the licensed entitlement for each water source	Water used from borefields over last six years has less than allocation (average use 12.1 ML/year over last six years). Data viewed was reported in the 2013-2104 AEMT and 2014-2015 Water Licensing Report. Open cut groundwater make was not reported in the AEMR or Water Licensing Report. Actual pumping records were not sighted.

5.9.12 Conclusion

Groundwater Management	Compliance Status	Compliant Ongoing
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The Groundwater Management Plan has been implemented and the monitoring programs conducted. The groundwater Bore Licenses have been consolidated by DPI-Water and the new licenses (20BL172002 (Mining) And 20BL173923 (Mining/Industrial) issued in November 2015.

Based on observations and desktop review of documents, Moolarben Coal appear to be managing groundwater generally in accordance with Project Approval, EPL and Bore Licence requirements. Groundwater management and monitoring, including minimisation of the need for extraction, is being undertaken at Moolarben Coal and impacts related to the operations are considered within the impacts predicted in the Environmental assessment.

5.11 Biodiversity

[Project Approval 05_0117 Schedule 3 condition 34 to 37]

[Project Approval 05_0117 Statement of Commitment 12, 18]

[Project Approval 08_0136 Schedule 3 condition 30 to 40]

[Project Approval 08_0136 Statement Commitment 30 to 33]

5.11.1 Biodiversity Management Plan

[Project Approval 05_0117 Schedule 3 condition 34]

[Project Approval 08_0136 Schedule 3 condition 30]

A Biodiversity Offset Strategy to address the areas and offset types outlined in Project Approval (05_0117) Schedule 3 Conditions 34 and Project Approval (08_0135) Schedule 3 Conditions 30, outlines the offset objectives to be implemented for the Moolarben Coal Complex project. The biodiversity offset areas described in the conditions include areas of remnant vegetation adjacent to existing conservation areas including the Munghorn Gap Nature Reserve (MGNR) and Goulburn River National Park (GRNP).

Implementation of the Biodiversity Offset Strategy is described in detail in the Moolarben Coal Complex Biodiversity Management Plan.

The Biodiversity Management Plan prepared by MCO with input from EcoLogical Australia in consultation with OEH, has been prepared to satisfy the requirements of Project Approval 05_0117 Schedule 3 condition 34 and Project Approval 08_0135 Schedule 3 condition 36. The Biodiversity Management Plan was approved by DP&E on 31 July 2015.

The development of the Biodiversity Management Plan and offsets management will be staged in accordance with Project Approval 05_0117 Schedule 2 condition and Project Approval 08_0135 Schedule 2 condition 13(a) as approved by the DP&E on 20 July 2015, to obtain approval for the security mechanism to be applied to the arrangements for the long term security of the offset areas.

Key objectives of the Biodiversity Management Plan for the Moolarben Coal Complex are to integrate rehabilitation of the site with surrounding biodiversity values that include:

- Creating a self-sustaining and ecologically diverse post-mining landscape that includes areas compatible with the conservation values of the adjacent MGNR and GRNP; and
- Creating effective wildlife corridors and habitat links between existing remnant vegetation in the MGNR, GRNP and other surrounding areas by increasing the continuity of woodland vegetation.

In accordance with, Project Approval (08_0135) Schedule 3 Condition 55, prior to relinquishing the mining leases associated with Stage 2 of the Moolarben Coal Complex, suitable arrangements will be made to protect the rehabilitation areas with conservation value in perpetuity.

5.11.2 Environmental Assessment and Statements of Commitment

[Environmental Assessment Moolarben Coal Project MOD 9 to 11]

[Environmental Assessment -Moolarben Coal Project Stage 2, March 2009]

[Preferred Project Report, Stage 2, January 2012]

[Environmental Assessment - OC4 South-West Modification MOD 1 April 2015]

The Moolarben Coal Project is located in a transitional zone between the western slopes and coastal areas of New South Wales within the Great Dividing Range. Many plant species and communities' representative of these areas intergrade at this locality and are at their range limits.

The Moolarben Coal Project area has been classified in terms of its ecological value (i.e. High, Moderate, Low) using the following matters of significance to define the extent of mining related impacts on local biodiversity values:

- Threatened species, populations, EECs and their habitats;
- Woodland habitats of likely value for declining woodland birds;
- Native vegetation and habitats of importance due to their strategic location, corridor values, and critical or unique resources (i.e. riparian and aquatic zones); and

- The adjoining conservation reserve network.

Areas of high ecological value are generally associated with vegetated lands belonging to the following Terrestrial Stratification Units (TSU):

TSU No.	TSU Description
10	Disturbed Vegetation (unimproved grasslands located close to remnant stands of vegetation).
30	Box Woodlands (vegetation associations classified as EEC).
30	Box Woodlands (non-EECs containing woodland bird habitat).
40	Tableland Redgum Woodlands (vegetation association 40 which is classified as EEC).
60	Apple Alluvial Forests

Areas of moderate ecological value are generally associated with vegetated lands belonging to the following TSU's:

TSU No.	TSU Description
20	Sedimentary Ironbark Forests.
40	Tableland Redgum Woodlands (other than vegetation association 40 which is classified as EEC).
50	Sedimentary Scribbly Gum Woodlands.

The preferred mitigation strategies developed to deliver a net positive benefit for local biodiversity are:

- Avoidance of ecologically important values;
- Dedication of significant ecological values to the conservation reserve network; • Increase the net native vegetation cover within the locality;
- Enhance the contained ecological values within existing native vegetation;
- Conserve important ecological habitats through the salvage of fauna habitats contained within the open cuts and consequential emplacement throughout rehabilitated/ revegetated landscapes; and
- Enter into a Voluntary Conservation Agreement over existing native vegetation and revegetated/ rehabilitated landscapes to provide a secure long term beneficial outcome for local biodiversity

Table 5.11.2.1: Statements of Commitment - Consolidated Project Approval 05_0117

SoC No.	Statement of Commitment Project Approval 05_0117	Moolarben Coal Actions/ Comment	Compliance Status
18	<p>Biodiversity</p> <ul style="list-style-type: none"> • Management and monitoring of ecology will continue to be undertaken in accordance with an approved Landscape Management Plan (or equivalent), which will be reviewed and updated as required to incorporate the Open Cut 1 and Open Cut 2 extension areas. 	<ul style="list-style-type: none"> • Management and monitoring of ecology will continue in accordance with the approved Landscape Management Plan, Biodiversity Management Plan and Rehabilitation Management Plan for the OC1 and OC2 extension areas (and the Stage 2 development). 	<p>Compliant Ongoing (Progressive)</p>

SoC No.	Statement of Commitment Project Approval 05_0117	Moolarben Coal Actions/ Comment	Compliance Status
	<ul style="list-style-type: none"> • Pre-clearing fauna surveys will be undertaken prior to ground clearing disturbance. • One of two hollow bearing trees within the rail loop alignment will be retained (where possible). • Tree hollows and other habitat features will be salvaged for use as compensatory habitat, in rehabilitation areas. • The cleared area along the mining lease boundary will be rehabilitated and revegetated to enable cleared EEC to re-establish. • Disturbed areas not required for ongoing access and maintenance will be rehabilitated. Endemic species will be used to supplement natural vegetation regeneration, where required. • Groundcover will be maintained to minimise the risk of soil erosion, wherever practicable. Feral animals, weeds and pests will be controlled. • MCO further commits to: - Undertake a detailed flora and fauna inventory and mapping of the vegetation types and threatened species for properties proposed to offset the clearing impacts of the Open Cut 1 and Open Cut 2 extension areas. - Manage offset and rehabilitation areas in accordance with a Rehabilitation and Offset Management Plan (ROMP or equivalent plan) to improve biodiversity outcomes. - Provide adequate funds to implement the management measures described in the ROMP. - Implement the management actions specific to each property and report annually on the implementation of the plan to relevant stakeholders. - Arrange for the independent review of the adequacy and implementation of the ROMP every three years. - Provide long-term security of offset areas through an appropriate 	<ul style="list-style-type: none"> • Pre-clearing fauna surveys are conducted prior to any vegetation clearing or surface disturbance. • Hollow bearing trees are retained (where practicable). • Tree hollows and other habitat features are salvaged for use as compensatory habitat, in rehabilitation areas. • The cleared area along the mining lease boundary is progressively rehabilitated and revegetated to enable re-establishment of cleared EEC. • Disturbed areas not required for ongoing access and maintenance are rehabilitated with endemic species to supplement natural vegetation regeneration. • Groundcover is established to minimise the risk of soil erosion. Feral animals, weeds and pests control is scheduled on an annual basis. • Moolarben Coal conducts flora and fauna inventory and mapping of the vegetation types and threatened species for properties proposed to offset the clearing impacts of the OC1 and OC2 extension areas. - Offset and rehabilitation areas are managed in accordance with a Vegetation Clearance Protocol and Landscape Management Plan, Rehabilitation Management Plan and Biodiversity Management Plan. Moolarben Coal implements the management actions specific to each property and report annually on the implementation. - The Landscape Management Plan, Biodiversity Management Plan and Rehabilitation Management Plan are reviewed regularly and the adequacy and implementation of the Plans is assessed by independent experts. Moolarben Coal are progressing the mechanisms for long-term security of 	

SoC No.	Statement of Commitment Project Approval 05_0117	Moolarben Coal Actions/ Comment	Compliance Status
	<p>mechanism (such as a conservation covenant) agreed to with relevant stakeholders.</p> <ul style="list-style-type: none"> - Provide an alternative secure offset property of at least equivalent biodiversity value where long-term security of a nominated offset property is not achievable. - Investigate potential roosting sites for bat activity on properties proposed to offset the impacts of Open Cut 1 and Open Cut 2 extension areas. - Investigate use of artificial roosting sites for microbat habitat augmentation where offset areas are determined not to have sufficient roosting habitat. - Carry out targeted spring surveys for <i>Diuris Tricolor</i> in potential habitat areas within Open Cut 1 and Open Cut 2 extension areas. Where <i>Diuris Tricolor</i> plants are identified in disturbance areas, these will be translocated to suitable offset property habitat areas consistent with the monitoring and reporting requirements of the Australian Network for Plant Conservation translocation guidelines (ANPC, 2004). - Review land use history of Derived Native Grassland offset areas (including, where possible, cultivation, fertiliser application, soil nutrient levels and ground cover species) to inform appropriate management and performance and completion criteria. Where monitoring indicates these areas are not recovering as expected within the first five years of management alternative management measures will be investigated. - Maintain existing third party access arrangements on offset properties, where required. - Progressive rehabilitation of disturbed areas and re use of habitat features (e.g. hollow logs, rocks) in rehabilitation areas to minimise the habitat resource 	<p>offset areas in consultation with the OEH and DP&E.</p> <p>Investigation of potential roosting sites for bat activity on properties proposed to offset the impacts of OC1 and OC2 extension areas and establishment of artificial roosting sites for microbat habitat augmentation is occurring with the placement of habitat tree stumps in rehabilitated areas on the site.</p> <p>Targeted Spring surveys in September, October and November 2013 were conducted by EcoLogical Australia for the Pine Donkey Orchid (<i>Diuris tricolor</i>), in potential habitat areas within Open Cut 1 and Open Cut 2 extension areas. <i>Diuris tricolor</i> was not recorded during the targeted searches.</p> <p>Review of land use history of Derived Native Grassland offset have been conducted to determine appropriate management and performance and completion criteria.</p> <p>Progressive rehabilitation of disturbed areas and re use of habitat features (e.g. hollow logs, rocks) in rehabilitation areas to minimise the habitat resource competition in adjoining conservation reserves is occurring as rehabilitation progresses (Noted on rehabilitated areas on the overburden emplacements along the boundary of OC2, during the site inspections).</p>	

SoC No.	Statement of Commitment Project Approval 05_0117	Moolarben Coal Actions/ Comment	Compliance Status
	competition in adjoining conservation reserves.		

Table 5.11.2.1: Statements of Commitment - Project Approval 08_0135

SoC No.	Statement of Commitment Project Approval 08_0135	Moolarben Coal Actions/ Comment	Compliance Status
	Ecology		
30	MCM will implement the ecological management and mitigation measures described in the PPR and subsequent supporting documents.	The implementation of the ecological management and mitigation measures scribed in the Preferred Project Report, Biodiversity Management Plan and Biodiversity Offset Management Plan will occur as the Stage 2 development progresses.	In progress
31	MCM will establish the Biodiversity Offset Strategy as described in the PPR and subsequent supporting documents to initially maintain and ultimately improve ecological values. Where ownership or the controlling interest of any proposed offset property is not able to be held by MCM it will either provide an alternate property of equal biodiversity value as a replacement, or make other such alternate arrangements as agreed to with relevant regulators. Management of offset properties for conservation purposes will be described in a Rehabilitation Offset Management Plan (or equivalent).		
32	MCM will implement appropriate security mechanisms to ensure that offset areas and rehabilitated areas (at the completion on mining) are protected in the long-term.	The long term security of offset areas is being progressed by Moolarben Coal through consultation with OEH and DP&E re the mechanisms for security of the land.	Compliant Ongoing
33	MCM will continue to consult with OEH on the inclusion of relevant Moolarben owned properties into the existing Avisford Nature Reserve.	Moolarben Coal continues to consult with the OEH re Avisford Nature Reserve in relation to dedicating the Avisford 1 biodiversity offset area to the national park estate under the NPW Act; and registering a Voluntary Conservation Agreement (VCA) under the NPW Act on the relevant portion of the Avisford 2 biodiversity offset area.	Compliant Ongoing

5.11.2.1 *Threatened Ecological Communities*

The Moolarben Coal Project area is characterized by six native and one exotic vegetation type communities and one disturbed landscape, each containing a variety of vegetation associations dominated by various tree and shrub canopy species. These comprise:

- Shrubby White Box Forest,
- Grassy White Box Woodland,
- Ridgetop Broad-leaved Ironbark – Black Cypress Pine Forest on shallow sands,
- Ridgetop Broad-leaved Ironbark Grey Gum Forest,
- Rough-barked Apple Alluvial Woodland,
- Rough-barked Apple – Cypress Pine Woodland on slopes, and
- Exotic pasture

Of the six native vegetation communities recorded at the Moolarben Coal Complex in various assessments conducted for the Moolarben Coal Complex area (Biota, 2006; Ecovision Consulting, 2008 and 2009; EMM, 2013a and b; and Cumberland Ecology, 2012), one meets the description of White Box Yellow Box Blakely's Red Gum Woodland endangered ecological community under the *Threatened Species Conservation Act 1995* (TSC Act) and the White Box-Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland recorded within both the surface disturbance and underground mining areas at the Moolarben Coal Complex is listed as critically endangered ecological community under the *Environment Protection and Biodiversity Act* (EPBC Act).

Five threatened flora species were also recorded at the Moolarben Coal Complex (in reports Moolarben Biota, 2006; Ecovision Consulting, 2008; EMM, 2013a and b) including:

- *Diuris tricolor* (Pine Donkey Orchid) – vulnerable under the TSC Act.
- *Eucalyptus cannonii* (Capertee Stringybark) – vulnerable under the TSC Act.
- *Eucalyptus scoparia* (Wallangarra White Gum) – endangered under the TSC Act and vulnerable under the EPBC Act.
- *Leucochrysum albicans var tricolor* (Hoary Sunray) – endangered under the EPBC Act.
- *Pomaderris queenslandica* (Scant Pomaderris) – endangered under the TSC Act and vulnerable

5.11.2.2 *Fauna Habitat*

A range of broad fauna habitat classes occur within the Moolarben Coal Complex area, (Moolarben Biota, 2006; Ecovision Consulting, 2008; EMM, 2013a and b) including:

- Woodland and open forest dominated by eucalypt species of dry sclerophyll environs.
- Open to dense shrublands.
- Sparse to open ground cover dominated by grasses and woody herbs of dry environs.
- Semi-permanent to ephemeral open/closed depressions dominated by a mix of native and exotic sedges and herbs.
- Exotic grasses and herbs of disturbed cleared environs.

These habitat classes contain numerous microhabitat features including abundant tree hollows within the woodland and open forest habitat located on the mid-slopes and fallen timber mainly occurring on steeper slopes. Flowering trees and shrubs abundant across the ridge tops of the Moolarben Coal Complex area. Isolated rock outcrops and bush rock, isolated accumulations of water and ephemeral to semi-permanent streams and pools of water were also noted across the Moolarben Coal Complex (Moolarben Biota, 2006; Ecovision Consulting, 2008). No threatened fauna populations were identified as present across the Moolarben Coal Complex.

5.11.2.3 Aquatic Fauna

Most of the creeks and drainages in the Moolarben Coal Complex area are ephemeral or exhibit intermittent flow. Literature reviews and aquatic ecology studies undertaken at the Moolarben Coal Complex indicate that there are no threatened aquatic plants, fish or macroinvertebrate species or populations (as listed under EPBC Act or under the NSW Fisheries Management Act, 1994) listed or found in the upper Goulburn River (Ecovision Consulting, 2008).

5.11.3 Biodiversity Criteria

5.11.3.1 Regent Honeyeater Offset Calculation

Project Approval 08_0135 Schedule 3 condition 35 requires the impacts generated by the Moolarben Coal Project on the Regent Honeyeater be calculated in species credits and the species credits that would be generated for the Regent Honeyeater from implementation of the biodiversity offset strategy developed and implemented under Project Approval 08_0135 Schedule 3 condition 30.

Moolarben Coal commissioned EcoLogical Australia to address the requirements of Project Approval 08_0135 Schedule 3 conditions 35 and 36, consistent with the OEH - NSW Biodiversity Offsets Policy for Major Projects (2014) and Framework for Biodiversity Assessment (FBA) (2014). The Regent Honeyeater Offset Calculation Report dated 28 July 2015 concluded that *"the offset requirements for potential Regent Honeyeater habitat, as calculated by the FBA, are met by the Moolarben Coal Biodiversity Offset Strategy and mine site rehabilitation. Therefore, additional offsets consistent with Condition 36 of Schedule 3 of Project Approval 08_0135 are not required."*

5.10.3.2 White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

The protection and revegetation of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland ecological community is specified in the EPBC Approval 2008/3297 and EPBC Approval 2013/6296. The offset areas and protection measures are outlined in the approved Biodiversity Offset Management Plan, December 2014.

5.11.4 Monitoring Program

[Biodiversity Management Plan, section 8]

[Biodiversity Offset Management Plan section 6]

Flora and fauna monitoring was undertaken during Spring and Autumn in 2013, 2014 and 2015 for flora (floristic and Landscape Function Analysis) and fauna (amphibians, diurnal birds, nocturnal birds, mammals, microbats and reptiles). The flora component including associated analogue sites.

All monitoring during the reporting period was undertaken in accordance with the methods and survey techniques prescribed in the Landscape Management Plan section 3.25, Biodiversity Management Plan, section 8 and Biodiversity Offset Management Plan section 6 (See Figure 5.11.4).

The following areas were targeted during the Spring and Autumn ecological monitoring:

- Offset Area 1 (Red Hills) – located off Ulan-Wollar Rd, comprising an area of approximately 441 ha;
- Offset Area 2 – located off Ulan Rd, to the north of current mining operations and incorporates an area of approximately 725 ha. The area includes the approved Underground (UG) 4;
- Offset Area 3 – this offset area is located off Lagoons Rd, to the southwest of the current mining operations and incorporates an area of approximately 473 ha;
- Bora Creek – Riparian vegetation along Bora Creek located off Ulan Rd; and

- Modification 9 Offset Areas 4 to 11 (monitoring commenced in 2015).

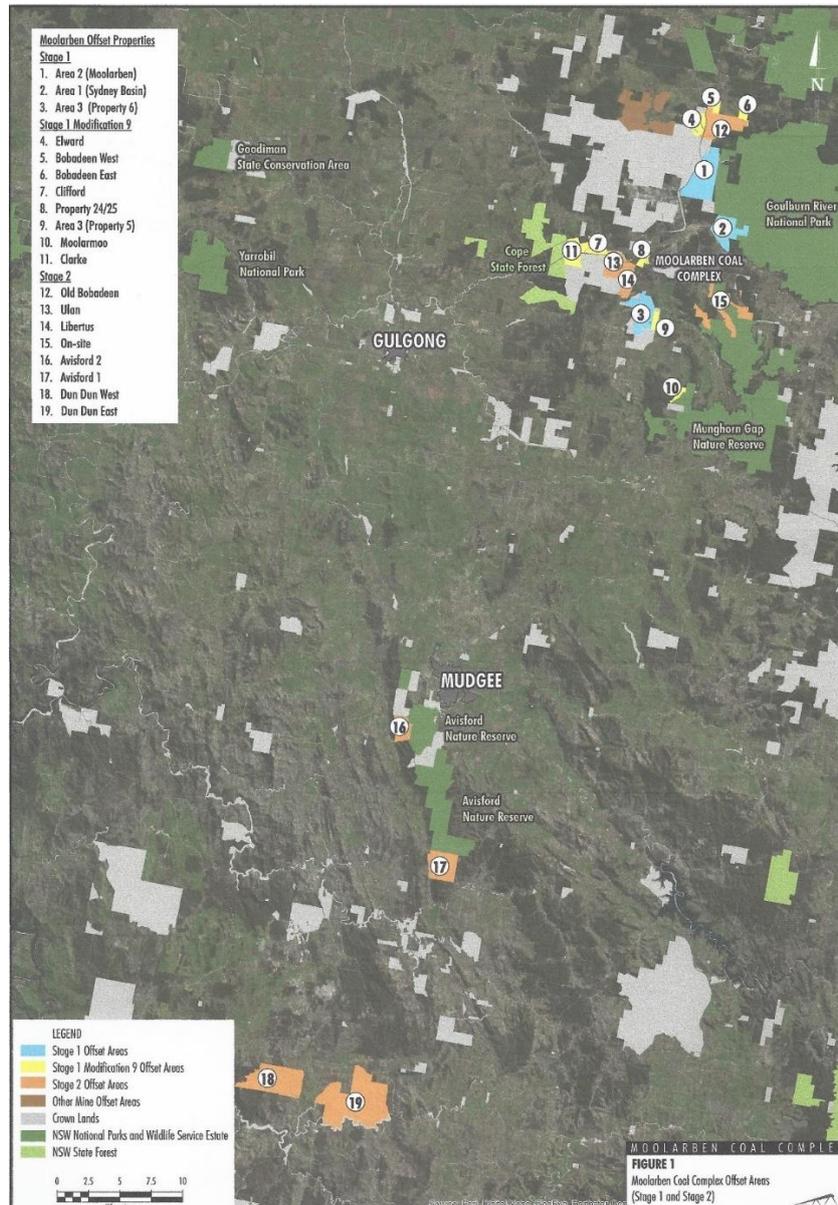


Figure 5.11.4: Biodiversity Offset Areas for Moolarben Coal Project.

5.11.5 Monitoring Results

Flora and fauna monitoring undertaken during Spring and Autumn in 2013, 2014 and 2015 was conducted for flora (floristic and Landscape Function Analysis) and fauna (amphibians, diurnal birds, nocturnal birds, mammals, microbats and reptiles) with the flora component including associated analogue sites.

Monitoring Location	Flora and Fauna Survey Results
Offset Area 1 (Red Hills)	<p>Thirteen (13) bird and 3 microchiropteran bat species listed as vulnerable under the NSW Threatened Species Conservation Act 1995 (TSC Act) were observed during the Spring 2013 and Spring 2014 monitoring periods.</p> <p>The Large-eared Pied Bat, migratory bird species (Rainbow Bee-eater) and one mammal (New Holland Mouse) are listed as vulnerable under the EPBC Act. One endangered bird species listed under the TSC Act (Swift Parrot) was also sighted.</p>

Monitoring Location	Flora and Fauna Survey Results
Offset Area 2	Five (5) bird species and 3 microchiropteran bat species listed as vulnerable under the TSC Act were recorded during Spring 2013 and Spring 2014 monitoring. One of these species - the Large-eared Pied Bat - is also listed as vulnerable under the EPBC Act. One migratory bird species (Rainbow Bee-eater) listed under the EPBC Act was also recorded opportunistically within this Offset Area.
Offset Area 3.	Three bird and 3 microchiropteran bat species listed as vulnerable under the TSC Act were recorded. One of these species - the Large-eared Pied Bat - is also listed as vulnerable under the EPBC Act. One migratory bird species (Rainbow Bee-eater) listed under the EPBC Act was also recorded opportunistically within this Offset Area.
Bora Creek	One bird species and 2 microchiropteran bat species listed as vulnerable under the TSC Act recorded during the Spring 2013 and Spring 2014 monitoring. One of these species - the Large-eared Pied Bat - is also listed as vulnerable under the EPBC Act.
Offset Areas 4 to 11 (MOD 9)	Monitoring commenced Spring 2015. Reporting in progress at time of audit.

*NSW Threatened Species Conservation Act 1995 (TSC Act)

*Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Targeted Spring surveys in September, October and November 2013 were conducted by EcoLogical Australia for the Pine Donkey Orchid (*Diuris tricolor*), in potential habitat areas within Open Cut 1 and Open Cut 2 extension areas of suitable habitat (grassy areas within Dry Sclerophyll Forest often with Cypress Pine or Ironbark's with sandy soils, either on flats or small rises). The Pine Donkey Orchid (*Diuris tricolor*) was not recorded during the targeted searches and it was concluded by EcoLogical Australia that the potential for further occurrence of the Pine Donkey Orchid (*Diuris tricolor*) at the Moolarben Coal Complex was low.

5.11.6 EPBC Approvals

An EPBC Approval 2007/3297 was granted by the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) on the 24 October 2007 for the establishment of a coal mine and associated infrastructure as described in the EPBC Referral dated 16/02/2007.

An independent audit of compliance required under EPBC Approval condition 5 was conducted by GHD during 2012. The EPBC Approval Independent Environmental Audit dated February 2013 concluded that Moolarben Coal Operations Pty Ltd demonstrated a high level of compliance with the requirements of the Approval in particular, Moolarben Coal had:

- transferred at least 130 hectares of the White Box-Yellow Box-Blakely's Red Gum Woodland and Derived Native Grassland listed ecological community to the NSW Minister for Climate Change Environment and Water;
- provided the NSW DECCW with funds to cover any reasonable costs associated with the transfer and ongoing management of this land;
- set aside and commenced to revegetate at least 38 hectares of disturbed land on the "Red Hills" property with Yellow Box-White Box-Blakely's Red Gum vegetation;
- set aside and commenced to revegetate at least 143 hectares of cleared land on the "Red Hills" and other adjoining or adjacent properties with suitable native vegetation to improve wildlife corridor linkages; and
- set aside to conserve and enhance at least 1262 hectares of existing native vegetation onsite.

Two non-conformances were recorded against the requirements of the EPBC Approval related to the timeframe in which the transfer of land occurred; and that arrangements had not been finalised to protect offset areas

from development. Moolarben Coal Operations progressed the requirements for the securing the biodiversity offset areas and the arrangements to protect the offset areas in perpetuity, in consultation with OEH and the DP&E under Project Approval 05_0117 Schedule 3 condition 35 and Project Approval 08_0135 Schedule 3 condition 38. Moolarben Coal provided a detailed letter to DP&E on 19 August 2015 describing the mechanisms considered to be acceptable for the long-term security of biodiversity offset areas. The mechanisms available under the NSW *Conveyancing Act 1919* outlined in the letter, for 17 of the 19 biodiversity offset areas, provide a reasonable, feasible and time efficient approach for securing all the biodiversity offset areas and meet the objectives of the 2014 NSW *Biodiversity Offsets Policy for Major Projects* for offsets being secured during its transitional implementation.

5.11.7 Offset Areas

[Project Approval 05_0117 Schedule 3 conditions 34 and 35]

[Project Approval 08_0135 Schedule 3 conditions 30 and 31]

The Biodiversity Offset Strategy for Moolarben Coal Complex is being developed progressively with additions and revision inserted into the Biodiversity Management Plan to address the requirements of Project Approval 05_0117 Schedule 3 Conditions 34 and Project Approval 08_0135 Schedule 3 condition 30. Subsequent revisions of the Biodiversity Management Plan will incorporate the Biodiversity Offset Strategy requirements under Project Approval 05_0117 Schedule 3 Condition 36 and Project Approval 08_0135 Schedule 3 Condition 39 including detailed monitoring programs, performance measures, completion criteria and remedial actions.

Each Biodiversity Offset Area has been divided into two distinct zones of management based on pre-existing vegetation and habitat condition and assessed resilience. Each management zone has strategic ecological management objectives which have informed the development of relevant management actions necessary to achieve a sustainable landscape with improved overall ecological quality in the long-term.

5.11.7.1 Management Zone 1 – Remnant Vegetation

Management Zone 1 (MZ1) covers an area of 657.3 ha and is characterised by intact vegetation with good native species richness, all strata present and remnant vegetation in generally good condition.

The primary management objective of MZ1 is to maintain vegetation structure and species diversity. This will be achieved through (inter alia) minimising stock and unauthorised human impacts, removal of threats to biodiversity and monitoring,

5.11.7.2 Management Zone 2 – Regeneration of Grassland to Forest/Woodland

Management Zone 2 (MZ2) covers an area of 158.8 ha and includes areas of native grassland, exotic grassland and cleared areas. MZ2 requires implementation of management actions to improve native species richness and structural diversity.

Arrangements to provide long-term security for the offset areas described in Project Approval 05_0117 Schedule 3 condition 34 - Table 12 and Project Approval 08_0135 Schedule 3 condition 30 Table 15, have been developed in consultation with OEH (NWPS) and the documentation prepared and submitted to the Secretary for approval in December 2015.

5.11.8 Community Complaints

No community complaints related to biodiversity were received by Moolarben Coal between January 2013 and December 2015.

5.11.9 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 3.9 reports on flora and fauna management during the AEMR reporting periods, flora and fauna monitoring and surveys (section 3.9.2, Table 41 and Figures 51 to 54), Landscape Function Analysis (section 3.9.2.1) and activities for the next reporting period (section 3.9.3).

The AEMR provides a detailed and valid representation of the status of environmental management and monitoring data and review of environmental performance of the Moolarben Coal Complex biodiversity management practices.

5.11.10 Conclusion

<u>Biodiversity Management</u>	<u>Compliance Status</u>	<u>Compliant Ongoing</u>
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The Biodiversity Management Plan and its integration with the Rehabilitation Management Plan are being implemented and will be progressively refined as the restoration of disturbed areas is undertaken and the mechanism for management of the offset areas is confirmed through consultation with the OEH and DP&E. Arrangements to provide long-term security for the offset areas described in Project Approval 05_0117 Schedule 3 condition 34 - Table 12 and Project Approval 08_0135 Schedule 3 condition 30 Table 15, have been developed in consultation with OEH (NWPS) and the documentation prepared and submitted to the Secretary for approval in December 2015.

Biodiversity values are being managed through the implementation of a range of strategies and monitoring to minimise impacts and conserve and enhance biodiversity values both within the mining lease areas and in the proposed offset areas.

It was noted during this Independent Environmental Audit that the Moolarben Coal environmental personnel and the Company management had a sound understanding of biodiversity issues by Moolarben Coal and the staged development of the Biodiversity Management Plan and offset management is considered to be progressing in a logical way to meet the long term security requirements of the conditions of Project Approval and the EPBC Approvals.

5.12 Heritage⁴

[Project Approval 05_0117 Schedule 3 condition 38 and 39]

[Project Approval 05_0117 Statement of Commitment 4, 18]

[Project Approval 08_0136 Schedule 3 condition 41 to 46]

[Project Approval 08_0136 Statements of Commitment 34 to 37]

5.12.1 Heritage Management Plan

[Project Approval 05_0117 Schedule 3 condition 39]

[Project Approval 08_0136 Schedule 3 condition 46]

The Heritage Management Plan was prepared on behalf of MCO by Dr Andrew Sneddon and Dr Matthew Whincop of the University of Queensland Culture and Heritage Unit (whose appointment has been approved by

⁴ Doug Williams, Access, Archaeology and Heritage

the NSW Department of Planning & Environment [DP&E] [letter dated 11 February 2015] as “suitably qualified and experienced persons”), to satisfy the requirements under Project Approval (05_0117) Schedule 3 condition 39 and Project Approval 08_0136 Schedule 3 condition 46]

The Heritage Management Plan was updated between 2-013 and 2015 to cover all of the approved mining operations in Stage 1 and the requirements for Stage 2 development. Consultation on the revision of the Heritage Management Plan was undertaken with the registered Aboriginal stakeholder organisations.

5.12.2 Environmental Assessment Predictions and Statements of Commitment

[Environmental Assessment Moolarben Coal Project MOD 9 to 11]

[Environmental Assessment -Moolarben Coal Project Stage 2, March 2009]

[Preferred Project Report, Stage 2, January 2012]

[Environmental Assessment - OC4 South-West Modification MOD 1 April 2015]

5.12.2.1 Environmental Assessment Moolarben Coal Project Stage 1 Aboriginal Heritage

Archaeological Risk Assessment Services Pty Ltd (ARAS) conducted an aboriginal heritage assessment of the Moolarben Coal Project area in accordance with the DEC guidelines including consultation with the aboriginal community Mudgee Local Aboriginal Land Council, Murong Gialinga Aboriginal and Torres Strait Islander Corporation and the Warrabinga Native Title Claimants Aboriginal Corporation.

The archaeological field survey of the Moolarben Coal Project footprint and surrounding lands was carried out between June 2005 and January 2006.

A total of 302 aboriginal sites were recorded as a result of the survey assessment. This cultural record involved 219 individual stone artefact isolated finds, 63 open stone artefact scatter sites of varying densities, 18 rock shelter sites with artefacts and/or art, a scarred tree site, a grinding groove site and 14 potential archaeological deposits.

The most concentrated occupation areas located within the Moolarben Coal Project area are:

- Moolarben Creek near Open Cut 3 (no development of this open cut area had occurred at the date of this audit – December 2015);
- The northern ridge Lines of Underground No.4 (no underground mining of UC4 had occurred at the date of this audit – December 2015); and
- Bora Creek near the Moolarben Coal main infrastructure area.

Management recommendations developed for specific aboriginal sites and objects likely to be affected by the Moolarben Coal Project include:

- Conservation and preservation from likely mine construction impacts;
- Archaeological salvage and test excavations;
- Surface collection of aboriginal objects;
- Intensive in situ recording;
- Ongoing monitoring and assessment of subsidence impacts.

The Aboriginal Cultural Heritage Assessment prepared for the Moolarben Coal Project Stage 1 MOD 9 determined that the impacts from the proposed modification, subject to management and monitoring, will be low within a local context and very low within a regional context. Management and monitoring of

Aboriginal cultural heritage i conducted in accordance with the Heritage Management Plan which will be reviewed and updated to include the management of any additional sites within the Stage 1 area.

Table 5.12.2.1: Statement of Commitment – Consolidated Project Approval 05_0117.

SoC No.	Statement of Commitment - Heritage Consolidated Project Approval 05_0117	Moolarben Coal Actions / Comment	Compliance Status
<p>18 Cultural Heritage</p>	<p>Cultural Heritage</p> <ul style="list-style-type: none"> • Cultural heritage sites will be monitored and managed according to the measures described in an approved Aboriginal Cultural Heritage Management Plan. • Cultural heritage sites adjacent to and outside construction, mining and general disturbance areas will have appropriate controls in place to prevent potential disturbance. • Cultural heritage monitoring and salvage will be undertaken by a qualified archaeologist and members of the Aboriginal Stakeholder community groups (Mudgee Local Aboriginal Land Council based in Mudgee; North-East Wiradjuri Pty Ltd, based in Ulan; Murong Gialinga Aboriginal and Torres Strait Islander Corporation, based in Mudgee; and Warrabinga Native Title Claimants Aboriginal Corporation, based in Kandos). • Where additional cultural heritage sites are identified, these sites will be managed in accordance with the measures described in the Aboriginal Cultural Heritage Management Plan. • Local Aboriginal community representatives will be involved in the recording, salvaging and storing of cultural heritage objects impacted by site works. • The Aboriginal Cultural Heritage Management Plan will be updated to include: - Additional registered parties as necessary. - Sub-surface testing and potential salvage of S1MC343-345 and S1MC352 where blasting is assessed to adversely impact these sites. - Test 	<ul style="list-style-type: none"> • Cultural heritage sites are monitored and managed in accordance with the measures described in the approved Heritage Management Plan section 5. • Cultural heritage sites adjacent to and outside construction, mining and general disturbance areas are protected with appropriate controls to prevent potential disturbance. • Cultural heritage monitoring and salvage is undertaken by qualified professional archaeologists and members of the Aboriginal Stakeholder community groups (Mudgee Local Aboriginal Land Council based in Mudgee; North-East Wiradjuri Pty Ltd, based in Ulan; Murong Gialinga Aboriginal and Torres Strait Islander Corporation, based in Mudgee; and Warrabinga Native Title Claimants Aboriginal Corporation, based in Kandos). • Where additional cultural heritage sites are identified, the new sites are recorded, added to the site database, and managed in accordance with the measures described in section 5.10 and 5.12 of the Heritage Management Plan. • Local Aboriginal community representatives are actively involved in the recording, salvage and storage of cultural heritage objects impacted by site works. • The Heritage Management Plan has been updated to include additional registered parties as 	<p>Compliant Ongoing</p>

SoC No.	Statement of Commitment - Heritage Consolidated Project Approval 05_0117	Moolarben Coal Actions / Comment	Compliance Status
	excavation and potential salvage of S1MC231 and S1MC334.	necessary, sub-surface testing and potential salvage of S1MC343-345 and S1MC352 and test excavation and potential salvage from S1MC231 and S1MC334 (undertaken by AECOM in 2015 - report in progress).	

European Heritage

Veritas Archaeology and History Service (Veritas) conducted a European heritage assessment for the Environmental Assessment Moolarben Coal Project (2006). Fifty-four (54) heritage sites were located within or in close proximity to Moolarben Coal Project area. Numerous house and farm sites were located, former school sites, graves, surveyor marks, the old Lagoon Inn and retaining walls associated with the road to Wollar via Carr's Gap Road.

Negative aspects for European heritage within the MCP area:

- Site 14 within Open Cut 1 will be impacted (House site selected by Henry Archer in 1899. Exotic trees and posts. Archival recording of this site was completed in September 2009);
- Sites 3, (burial site of Roberts Family), 4 (house and burial site), 29 (House site Andrew Delaney 1896), 30 (Scholl site 1897), and 32 (House site John Smith 1879), all located within Open Cut 3. No works commenced on OC3 at the date of this audit;
- Site 18 (Foundations of road to Wollar via Carr's Gap. Rough dry stone retaining wall) could be impacted by Open Cut 2 development.

No Statements of Commitment were developed for European heritage.

5.12.2.2 Environmental Assessment Moolarben Coal Complex Stage 2

Aboriginal Heritage

An Aboriginal Archaeological and Cultural Heritage Impact Assessment was carried out by Archaeological Risk Assessment Services as part of the Stage 2 Environmental Assessment.

A search of the Aboriginal Heritage Information Management System determined there were 415 archaeological sites within the Stage 2 Project Boundary and 56 in the immediate vicinity. As the Moolarben Coal Project boundary encompasses part of Stage 1, 144 of these sites were identified during the Stage 1 assessment and are managed through the existing approved Stage 1 Aboriginal Heritage Management Plan. The Preferred Project will have a direct impact on 148 archaeological sites (including ten identified Stage 1 archaeological sites) and has the potential to indirectly impact a further 11 sites. A total of 312 sites will be preserved, with 62 of these located in four proposed Management Areas, including a high significance grinding groove site (S2MC261), a high significance grinding groove and artefact scatter site (S2MC151), and a high significance artefact scatter site with potential archaeological deposit (S2MC200).

Moolarben Coal will develop an Aboriginal Heritage Management Plan in consultation with Aboriginal community stakeholders.

Table 5.12.2.2: Statement of Commitment – Project Approval 08_0135

SoC No.	Statement of Commitment – Heritage Project Approval 08_0135	Moolarben Coal Actions / Comment	Compliance Status
	Aboriginal Archaeology and Cultural Heritage		
34	The salvage and the protection of all known Aboriginal objects within the Project Boundary will be managed in accordance with the measures described in the PPR, subsequent supporting documents and an approved Aboriginal Cultural Heritage Management Plan for the MCC which has been prepared in consultation with local Aboriginal community stakeholders and the OEH. Prior to finalisation and approval of the Aboriginal Cultural Heritage Management Plan, the description of significance, development area, potential impacts, management strategies and current management status for all sites in the Stage 2 area will be reviewed by a suitably experienced and qualified archaeologist.	The salvage and the protection of all known Aboriginal objects within the Moolarben Coal Project Boundary has occurred in accordance with the approved Heritage Management Plan section 5.	Compliant Ongoing
35	Site S2MC229 will be described as being a directly impacted site with a management strategy of 'detailed recording and surface collection, including closer inspection of the drip line' in the approved Aboriginal Cultural Heritage Management Plan.	Site has been salvaged by Niche Environmental, report to be completed by June 2016.	Compliant Ongoing
36	Unsurveyed areas such as the Powers Management Area will be assessed and managed in accordance with the procedures agreed to with local Aboriginal community stakeholders and approved in the Aboriginal Cultural Heritage Management Plan for the MCC.	Survey for Aboriginal sites is regularly undertaken for areas previously undisturbed. The surveys are conducted with involvement of Aboriginal community stakeholders.	Compliant Ongoing
37	MCM will manage the Aboriginal conservation zones as outlined in the PPR and subsequent supporting documents in consultation with local Aboriginal community stakeholders.	Local Aboriginal community is engaged with the Aboriginal heritage site management process and Heritage Management Plan provisions are enacted.	Compliant Ongoing

5.12.3 Heritage Management Plan Commitments

The management of Aboriginal archaeological sites on the Moolarben Coal Complex area has been divided into several cultural heritage management zones. Each zone is linked to a proposed development type (e.g. open cut mine, underground mine, potential ancillary disturbance, heritage conservation area) and the expected impacts of that development type. The management response for the sites in each zone is also arranged according to site type. For example, the management response for an impacted isolated find is different to the management response for an impacted rock shelter or Potential Archaeological Deposit (PAD).

The categories of impact considered in the Heritage Management Plan are:

- direct impact;
- indirect impact (e.g. sites may be potentially subject to subsidence and/or blasting impacts);
- no scheduled impact (although potentially subject to ancillary works); and
- conservation (protected from impact).

The Management Commitments for all Aboriginal Archaeological Sites at the Moolarben Coal Complex (sorted by location and impact) is presented in the Heritage Management Plan Appendix D Table D-1. The audit confirmed that the implementation of the requirements in Appendix D occurs in advance of any disturbance of land on which the Aboriginal site or artefact has been recorded.

5.12.4 Heritage Monitoring Program

[Heritage Management Plan section 5.9]

Monitoring of potential subsidence or blasting (vibration) impacts will be conducted for rock shelter and open grinding groove sites (unless previously salvaged), to identify and document any impacts that have arisen from mining.

Monitoring for potential subsidence impacts will involve inspecting and recording the condition of these specific Aboriginal archaeological heritage sites within three to six months after undermining has occurred. (Note: no underground mining had occurred at the date of this so subsidence monitoring had not been triggered).

Monitoring of potential blasting impacts (vibration) will be undertaken for rock shelter sites using a portable blast monitor for the purposes of structural integrity monitoring, to confirm that blast vibration has not resulted in impact to the site(s). Prior to blasting within 500 m of the listed sites, detailed baseline data will be used to measure potential change to the sites. If blasting vibration levels are recorded at >75% of the relevant limit(s) then:

- Moolarben Coal will engage an appropriately qualified expert to monitor the Aboriginal rock shelter sites against the baseline record.
- Monitoring will be focussed on the features of the site that make it significant (e.g. the artefacts and/or PAD).
- Results of monitoring for the above Aboriginal archaeological sites will be reported in the Annual Review.

5.12.5 Monitoring Results

Field work undertaken by the registered Aboriginal stakeholder organisations during 2013 to 2015 have included:

- Due diligence surveys for exploration activities;
- Surveys and salvage of the areas included in Stage 2;
- Salvage works in Open Cut 2;
- Surveys of the areas included in the Stage 1 Optimisation Modification (Mod 9);
- Surveys and salvage works for the Ulan-Wollar road diversion; and
- Surveys for the proposed Temporary Workers Accommodation.

Moolarben Coal engaged a Native Title Cultural Heritage Officer (NTCHO) as an outcome of the negotiated Ancillary Deed Agreement with the Native Title Party (North East Wiradjuri). The role of the NTCHO is to co-ordinate the implementation of the Ancillary Deed that includes planning, co-ordinating and implementing

various activities required by the Implementation Committee, co-ordinating liaison with the Aboriginal Stakeholder Groups, and undertaking other cultural heritage activities at Moolarben Coal.

Moolarben Coal hold regular meetings with the registered Aboriginal Stakeholder Groups regarding Aboriginal heritage matters. Training of the workforce on Aboriginal heritage occurs during site inductions. Specialised presentations on Cultural Heritage are presented at tool box talks and induction sessions for mine personnel and contractors to the mine.



Keeping Place at Moolarben Coal for salvaged artefacts.

A Care and Control Agreement was developed between Moolarben Coal and OEH for all artefacts salvaged from the Stage 1 operations area.

A secure Keeping Place was established on Moolarben Coal land with the approval of all registered Aboriginal stakeholder organisations, to house salvaged artefacts.

The Keeping Place was inspected during the site audit and found to be secure and satisfactory for the long term storage of salvaged artefacts.

5.12.6 Audit Site Inspection Comments

The audit site inspection and document review showed that Moolarben Coal is meeting the requirements of the Project Approval 05_0117 and Project Approval 08_0135 conditions and Statement of Commitments related to heritage matters.

The Heritage Management Plan outlines the provision for controlled salvage excavation (section 5.6.2) including specifically for rock shelter site S2MC231 (section 5.6.3). Test excavation of sites S1MC231, S1MC343 and S1MC344 (Project Approval 05_0117 Schedule 3 condition 39(d)) were undertaken by AECOM with report being prepared at the date of this audit.

The DP&E required particular comment on Aboriginal heritage associated with the development of the OC4 area (Stage 2). Aboriginal heritage surveys and salvage were undertaken progressively in advance of OC4 construction activities in consultation with the Registered Aboriginal Parties and qualified Archaeologists. The Ground Disturbance Process ensures that heritage management actions are completed prior to the approval of disturbance. Survey and salvage activities were well in advance of disturbance activities at the time of the audit. During interviews with Moolarben Coal Environment personnel, archaeological survey results of the area where development had been prioritised, and inspected areas were in the process of being fenced to create barriers between development and archaeological heritage sites. It was clear during the audit site inspection and document review, that due diligence and process had been followed during the Stage 1 development and operation, and was being followed in the development of the Stage 2 OC4 area.

5.12.7 Community Complaints

No community complaints related to heritage issues were recorded by Moolarben Coal between January 2013 and December 2015.

5.12.8 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 3.16 reports on Aboriginal heritage and section 3.17 reports on European heritage. The AEMR provides a satisfactory representation of the status of environmental management and monitoring of the Moolarben Coal Complex, with heritage matters.

5.12.9 Matters Raised by Relevant Agencies

No specific matters related to heritage management were raised by the government agencies in response to consultation correspondence.

5.12.10 Conclusion

<u>Heritage Management</u>	<u>Compliance Status</u>	<u>Compliant Ongoing</u>
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The Heritage Management Plan prepared to satisfy the Project Approval conditions is comprehensive and was current at the time of audit. The Heritage Management Plan addresses each of the requirements of the Project Approval adequately for the Moolarben Coal Complex operations. Moolarben Coal has implemented the Heritage Management Plan and is compliant with the commitments in the Plan and Project Approval conditions. This conclusion was reached on the basis of review of documentation, interviews with Moolarben Coal staff and field inspections. It is considered that Moolarben Coal is achieving conservation of a range of heritage sites on the Moolarben Coal Complex periphery, with the salvage of artefacts and retention of information and cultural material of a high standard and conformance with relevant statutory guidelines.

5.13 Visual Amenity

[Project Approval 05_0117 Schedule 3 condition 61 and 62]

[Project Approval 05_0117 Statement of Commitment 4, 18]

[Project Approval 08_0136 Schedule 3 condition 50]

[Project Approval 08_0136 Statements of Commitment 43 to 47]

5.13.1 Visual Impact Management – Rehabilitation Management Plan

Visual impact mitigation is outlined in the Rehabilitation Management Plan section 4.8. The Plan states that in accordance with rehabilitation objective requirements of Project Approval 05_0117 Schedule 3 condition 65 and Project Approval 08_0135 Schedule 3 condition 53, visual impact of final landforms rehabilitated with vegetation consistent with the post-mining land use for the landform.

5.13.2 EA Predictions and Statements of Commitment

[Environmental Assessment Moolarben Coal Project MOD 9 to 11]

[Environmental Assessment -Moolarben Coal Project Stage 2, March 2009]

[Preferred Project Report, Stage 2, January 2012]

[Environmental Assessment - OC4 South-West Modification MOD 1 April 2015]

5.13.2.1 Environmental Assessment Report, September 2006

The sequential nature of mining, overburden emplacement, rehabilitation and the location of infrastructure was assessed over the life of the Moolarben Coal Project.

The following measures if implemented will reduce the overall daytime impacts of the open cut mining areas, the overburden emplacement works and the infrastructural elements from various viewpoints:

Table 5.13.2.1a: Visual Impact Mitigation Measures

Visual Impact Mitigation Measures	Moolarben Coal Actions	Compliance Status
Create a 6m high bund along the north and northwest edge of Open Cut 1 adjacent to the final void as part of initial works and landscape in the first 6 months;	A vegetated bund along the north and northwest edge of Open Cut 1. has been established and reduces the visual aspect of OC1 from Wollar Road.	Compliant Ongoing
Create a mixed vegetative screen 4 rows (10 metres) of quick growing acacia species and eucalypts along the north edge of the realignment of Wollar Road as close as reasonable to the road alignment. This will reduce the impacts of the infrastructure area to moderate within 5 years. Plants to be selected relative to final road levels and adjacent topography to screen at eye level between 1m and 2.5m above road level;	 <p>Mixed vegetative screen along the north edge of the realignment of Wollar Road.</p>	Compliant Ongoing
Where the Open Cut 1 acoustic bund is not screened by trees, modify the face of the bund by creating a deep gully or an extended toe to create a more natural landscape element;	The OC1 bund and rehabilitation is showing an established screen of trees along the northern boundary of the open cut.	Noted
Modify the tree removal and emplacement strategy along the mid slopes of the east-southeast ridgeline to prevent the removed tree line from forming a horizontal line when viewed from similar elevations. This is relevant along the east edge of Open Cut 1, the east edge of Open Cut 2 and the west edge of Open Cut 3;	 <p>Looking towards OC2 with natural tree line along the ridge above the open cut.</p>	Compliant Ongoing
When a land access agreement is reached with the land owner plant an advanced tree screen (5-6 rows deep) around the proposed facilities area for Open Cut 3. This will form a screen to viewers in the east and along Moolarben Road when operations commence in this area;	OC3 development had not commenced at the date of this audit (December 2015)	Not triggered

Visual Impact Mitigation Measures	Moolarben Coal Actions	Compliance Status
Consider re-contouring or increasing density of vegetation of rehabilitated bench areas in Open Cuts 1, 2 and 3 to reduce the apparent flatness of the benches long term. This reduces potential long term impacts when viewed from elevated locations. This is particularly relevant for Open Cut 3 where long term development or users in Munghorn Gap Nature Reserve may overlook the final rehabilitation from viewing locations around RL 500 to RL 600	 <p>Vegetation of rehabilitated areas in Open Cuts 1 and 2 and 3 reduce the apparent flatness of the benches long term. OC3 development had not commenced at the date of this audit (December 2015)</p>	Noted
Implement a revegetation strategy for each rehabilitation area to mirror the existing vegetation removed from the rehabilitated areas.	Rehabilitation and vegetation structure is occurring in accordance with the MOP and Rehabilitation Management Plan.	Compliant Ongoing

Table 5.13.2.1b: Statements of Commitment – Consolidated Project Approval 05_0117

Soc No.	Visual Amenity Statement of Commitment	Moolarben Coal Actions / Comment	Compliance Status
18	<p>Visual</p> <ul style="list-style-type: none"> Trees and shrubs will be planted to provide a visual screen: - To the switch and bore pads located adjacent to Saddlers Creek Road, where required. - Along the southern edge of Cope Road, where views of OC1 extension areas will be possible, subject to landowner consent. The Landscape Management Plan (or equivalent) will be reviewed and updated to describe the measures that will be implemented to manage visual impacts associated with the OC1 and OC2 extension areas, such as: - Vegetation screen planting, subject to land owner's consent, along the southern edge of Cope Road, in areas visually affected by direct views of the OC1 extension area. - Investigating the feasibility of targeted vegetation screen planting for affected properties along Ridge Road (with direct views from the 	<ul style="list-style-type: none"> Trees and shrubs have been planted to provide a visual screen where views of OC1 extension areas are visible to passing traffic or residences. The Rehabilitation Management Plan was reviewed and updated to describe the measures to be implemented to manage visual impacts associated with the OC1 and OC2 extension areas, Targeted vegetation screening is considered for affected properties along Ridge Road (with direct views from the residence to OC1 and OC2 extension areas), to mitigate the visual and lighting impacts. Out of pit emplacements were constructed as a priority for OC1 and OC2. These areas were seeded as soon as practical after construction. Progressive rehabilitation is undertaken. 	Compliant Ongoing

<p>residence to both OC1 and OC2 extension areas), to mitigate the visual and lighting impacts of OC1 and OC2 extension areas, subject to landowner consent. - Building-up out-of-pit embankments first so that continued operations are obscured by the embankment. Wherever possible out-of-pit emplacements around the perimeter will be established first, providing a visual screen while work is undertaken in the central part of the emplacement. - Seeding and grassing embankment outer faces visually exposed to private residents as soon as practically possible to soften the view. - Where possible, maintaining a strip of vegetation along the leading face of the ridgeline associated with the OC1 extension area to provide a visual screen to workings for as long as practical. - Use of operational screening measures such as landform re-establishment sequencing and lighting management.</p> <ul style="list-style-type: none"> • As far as practically possible, and where mine safety allows, management protocols will be established and implemented to: - Locate mobile lighting plant to be directed away from private residences. - Design lighting systems and direct stationary lighting sources below the horizontal to minimise potential light spill. 	<ul style="list-style-type: none"> • Increasing the height of out-of-pit embankments is increased where practicable to obscure operations to provide a visual screen. • Grassing of out-of-pit embankment faces visually exposed to private residents to soften the view. • A strip of vegetation has been maintained along the leading face of the ridgeline associated with the OC1 extension area. • Operational screening measures such as landform re-establishment sequencing and lighting management are implemented where practicable. Disturbed areas are progressively rehabilitated where mine safety allows and management protocols have been established for the location of mobile lighting plant to ensure it is directed away from private residences. • Stationary lighting sources are directed below the horizontal to minimise potential light spill. • Lighting requirements for the operational areas of Moolarben Coal are included in design tender specifications. Lighting systems are designed / managed to minimise light spillage. 	
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5.13.2.2 Environmental Assessment Report, Stage 2, 2009

A visual and landscape assessment was carried out by O'Hanlon Design Pty Ltd as part of preparation of the Environmental Assessment for Stage 2. The southern and south-western out-of-pit emplacements have been relocated to a single northern out-of-pit emplacement, reducing potential visual impacts from the Munghorn Gap Nature Reserve.

Mining within the Stage 2 Project Area will be visible only to people travelling along Ulan-Wollar Road. There are no sensitive 'viewers' that look into or over the area, as all properties in the vicinity of the project are mine-owned. The development of Stage 2 will not affect views from the surrounding nature reserve and national park as there is no readily accessible public access to areas overlooking the MCP.

The following measures will be implemented by Moolarben Coal to reduce the visibility of the open cut mining areas, the out-of-pit emplacement areas and the infrastructure elements of Stage 2 from the various publicly accessible viewpoints:

- Rehabilitation will be progressively undertaken to replace the existing native vegetation removed as part of the mining process;
- Other cleared and degraded areas within Moolarben Coal owned land will be revegetated to create a post-mining landscape with a greater proportion of native vegetation;
- A Landscape Management Plan will be prepared to guide rehabilitation and revegetation efforts, and a Final Void Management Plan will be prepared to guide the final landform of the OC4 void;
- Existing vegetation will be retained around the new infrastructure areas and on road fringes of OC4 where it is not required to be thinned / cleared for safety purposes.

Moolarben Coal will implement measures to mitigate adverse night lighting impacts from the Stage 2 OC4:

- Light columns and low brightness floodlights will be installed at a height of less than 15 m within the infrastructure areas. These will have horizontal floodlight bodies with floodlight reflectors designed to provide sharp light cut-off and restrict stray light;
- Horizontal wall mounted lights with low brightness will be used to light areas around the workshop and adjacent hardstand areas;
- All floodlights will be shielded in the open cut area to the maximum extent practicable; and
- Lighting will be screened to viewers where possible but will always be selected to initially meet safe working practices.

Table 5.13.2.2: Statements of Commitment – Project Approval 08_0135

SoC No.	Visual Amenity Statements of Commitment	Moolarben Coal Actions / Comment	Compliance Status
Visual 44	Infrastructure lighting will be designed to control light spill with directional lighting in elevated and exposed areas and will utilise low intensity lights to the level necessary for operational and safety requirements to minimise adverse night lighting impacts.	Infrastructure lighting uses directional lighting and low intensity lights to control light spill in elevated and exposed areas of the operations.	Compliant Ongoing

5.13.3 Community Complaints

No community complaints related to visual amenity were recorded by Moolarben Coal between January 2013 and December 2015. One complaint related to lighting was received during 2015 and the offending light tower was repositioned.

5.13.4 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 3.15 reports on visual / stray light during the AEMR reporting periods.

5.13.5 Matters Raised by Relevant Agencies

No matters related to visual amenity were raised by the agencies in response to the consultation request.

5.13.6 Conclusion

The implementation of the measures proposed in the Environmental Assessments have adequately managed visual impact of the Moolarben Coal Complex project on the surrounding area and transport corridors.

5.14 Waste

[Project Approval 05_0117 Schedule 3 condition 64]

[Project Approval 05_0117 Statement of Commitment 4]

[Project Approval 08_0136 Schedule 3 condition 52]

[Environment Protection Licence 12932 condition L4]

5.14.1 Waste Management Plan

A Waste Management Plan was prepared for the Moolarben Coal Project in accordance with the requirements with Project Approval 05_0117 Schedule 3 condition 64. The Waste Management Plan was developed in November 2009 prior to the commencement of mining operations at Moolarben Coal.

The Waste Management Plan addresses the requirements of the Project Approval and includes recycling targets, identifies waste management controls including the identification of waste and details the reporting processes that apply to waste management.

Waste generated by the Moolarben Coal project (including overburden and coal rejects) is managed in accordance with Project Approval 05_0117 Schedule 3 condition 64 and Project Approval 08_0135 Schedule 3 condition 52.

Moolarben Coal is committed to the waste hierarchy management approach - avoidance, reduction, reuse, recycling or reclamation, waste treatment and disposal. Stage 2 waste management actions will build on the Stage 1 Waste Management Plans to ensure an integrated approach to waste management. Waste from Stage 2 is not predicted to have any significant impact on the environment.

Sewage effluent is treated on-site and irrigated on site in accordance with EPL 12932 condition O4.

Potentially acid forming (PAF) overburden materials identified on the site are mainly associated with the Moolarben Coal Seam, and roof and floor of the Ulan Seam. Most of the PAF overburden and floor material in the Stage 2 Project Area will be managed through operational mixing, strategic placement in pit voids below long term groundwater levels, and/or treatment with limestone. Routine testing will be carried out to ensure all potential acid-generating material is properly identified and appropriately managed to reduce any risk of long-term or off-site acid rock drainage.

5.14.2 Waste Criteria

Waste is classified in accordance with the Waste Classification Guideline – Part 1 Classification of Waste (EPA November 2014) and managed in accordance with *Protection of the Environmental Operations Act* and regulations.

5.14.3 Waste Monitoring Program

A waste management contractor manages all waste streams generated on the Moolarben Coal Complex site and monitors the volume and type of wastes generated. This includes general waste, cardboard and paper recycling, co-mingled recycling, waste oil, and steel. Total Integrated Waste Management Service provide Moolarben

Coal with a monthly report on the volume and segregation of waste materials and the recycling, reuse or disposal of each waste type.

Recycling of Moolarben Coal segregated waste target is to achieve at least 70% recycled. (During the 2012-2013 AEMR period 78.47% of all waste removed from site was recycled, and during the 2013-2014 AEMR period, 88.98% of all waste removed from site was recycled).

5.14.3 Incidents

No incidents related to waste management were recorded between January 2013 and December 2014

5.14.4 Community Complaints

No community complaints related to waste have been received by Moolarben Coal between January 2013 and December 2015.

5.14.5 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 3.8 reports on waste management during the AEMR reporting period, presenting total waste removed from the site, waste recycling percentages and comparison with results of previous annual waste volumes (Table 42 and Figure 53).

The AEMR's provides a valid representation of the status of waste management for Moolarben Coal Complex over the annual reporting period.

5.14.6 Conclusion

<u>Waste Management</u>	<u>Compliance Status</u>	<u>Compliant Ongoing</u>
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The management of waste materials at the Moolarben Coal Complex occurs with the target of recycling 70% of waste generated by segregation at the source to maximise the potential for reuse / recycling and reducing the amount of waste required to be disposed of to landfill. The recycling target of greater than 70% has been achieved between January 2013 and December 2015.

5.15 Rehabilitation⁵

[Project Approval 05_0117 Statement of Commitment 4, 18]

[EPBC 2007/3297 condition 3]

[Project Approval 08_0135 Schedule 6 condition 53 to 56]

[Project Approval 08_0135 Statements of Commitment 38 to 40]

[Project Approval 05_0117 Schedule 3 condition 68]

[Project Approval 08_0135 Schedule 6 condition 53 to 56]

⁵ Michael Frankcombe, WPS Parsons Brinkerhoff

5.15.1 Rehabilitation Management Plan

The Rehabilitation Management Plan (RMP) was prepared to satisfy Project Approval 05_0117 Schedule 3 condition 65 to 69 and Project Approval 08_0136 Schedule 6 condition 53 to 56 for Stage 1 and Stage 2, and peer reviewed by Dr David Freudenberger of the Australian National University (an experienced and qualified ecological expert) in March 2015. The Rehabilitation Management Plan also addressed the requirements of Commonwealth EPBC 2007/3297 Approval conditions relevant to rehabilitation. The Rehabilitation Management Plan was updated on 1 May and 11 August 2015 and submitted to the Executive Director, Mineral Resources for approval.

The Rehabilitation Management Plan supersedes relevant components of the previously approved Stage 1 Landscape Management Plan (dated 25 November 2013) and the Stage 1 Rehabilitation Management Plan submitted to the Executive Director, Mineral Resources for approval on 31 March 2015.

5.15.2 Environmental Assessment Commitments

[Environmental Assessment Report Moolarben Coal Project, September 2006]

[Environmental Assessment Moolarben Coal Project MOD 9 to 11]

[Environmental Assessment -Moolarben Coal Project Stage 2, March 2009]

[Preferred Project Report, Stage 2, January 2012]

[Environmental Assessment - OC4 South-West Modification MOD 1 April 2015]

The rehabilitation of the Moolarben Coal Complex disturbed areas will occur in accordance with the Mining Operations Plans, Rehabilitation Management Plan and Biodiversity Management Plans prepared for the project. Moolarben Coal is committed to progressively rehabilitating all areas disturbed by mining to achieve specific post-mining land uses (Environmental Assessment Stage 1 Optimisation Modification, May 2013).

The Environmental Assessments for the project have generally expressed the following commitments:

Table 5.15.2: Environmental Assessments - General Commitments

Environmental Assessment Commitments	Moolarben Coal Actions (Dec 2015)	Compliance Status
The Mining Operations Plan (MOP) for the Moolarben Coal Complex will describe site activities and the progress toward environmental and rehabilitation outcomes required under the ML conditions and the Project Approvals (05_0117) and (08_0135).	Mining Operations Plan dated September 2015 presents Rehabilitation Planning and Management (section 5) and Rehabilitation Implementation (section 7) for the Moolarben Coal Complex, to progress toward environmental and rehabilitation outcomes required under the ML conditions and the Project Approvals 05_0117 and 08_0135.	Compliant Ongoing
Rehabilitation of the Moolarben Coal Complex Stage 1 has been undertaken in accordance with the Rehabilitation Management Plan and Biodiversity Offset Management Plan.	Observations during the audit site inspection verified that rehabilitation was occurring progressively on-site with rehabilitation in accordance with the MOP and Rehabilitation Management Plan, on completed disturbed areas well established.	Compliant Ongoing
Ongoing monitoring and maintenance is to be undertaken in accordance with the Rehabilitation	Rehabilitation monitoring is being conducted with results reported and assessed in the AEMR (section 5 Rehabilitation) annual rehabilitation monitoring	Compliant Ongoing

Environmental Assessment Commitments	Moolarben Coal Actions (Dec 2015)	Compliance Status
Management Plan and Biodiversity Offset Management Plan.	report. The annual Ecosystem Function Analysis is used to assess the progress of rehabilitation sites against relevant reference sites located outside the disturbance footprint and is used to assess whether rehabilitation areas are satisfying rehabilitation objectives	
Rehabilitation of the Moolarben Coal Complex Stage 2 would be undertaken in accordance with a Rehabilitation Management Plan to be prepared for the Moolarben Coal Complex incorporating Stage 2. The proposed Stage 2 rehabilitation strategy is outlined in Appendix K of the Stage 2 PPR.	Not yet triggered as the site establishment works for Stage 2 OC4 only commenced in September 2015.	Compliant Ongoing

5.15.2.1 Environmental Assessment Moolarben Coal Project, 2006

The Environmental Assessment Moolarben Coal Project, 2006 presented the following general commitment to progressive rehabilitation:

- Design of mine plan to minimise final voids;
- Use of final voids during future mining operations including water storages within Open Cut 1 void;
- Shaping of landforms to seek compatibility with existing topography;
- Rehabilitation objectives to comprise agricultural lands and biodiversity offsets;
- Battering of final voids slopes;
- Benching and revegetation of final void slopes.

The Statement of Commitment presented in the Environmental Assessment Moolarben Coal Project, 2006 is shown in Table 5.14.2.1.

Table 5.15.2.1: Statements of Commitment - Consolidated Project Approval 05_0117

SoC No.	Statements of Commitment - Rehabilitation Consolidated Project Approval 05_0117t	Moolarben Coal Actions / Comment	Compliance Status
18	<p>Rehabilitation</p> <ul style="list-style-type: none"> • Soils will be stockpiled and used to rehabilitate areas not required for ongoing operations. • MCO is committed to progressively rehabilitating mined areas as soon as practical following disturbance, in accordance with an approved Landscape Management Plan (or equivalent Rehabilitation Plan), including returning areas disturbed by mining to their pre-mining land use (unless otherwise agreed with relevant stakeholders). The plan will be updated, as required, to include the Open Cut 	<ul style="list-style-type: none"> • Top-soil is stripped and reused for rehabilitation, or stockpiled and used to rehabilitate areas not required for ongoing operations. • Progressive rehabilitating of mined areas and overburden emplacements occurs as soon as practical in accordance with the Landscape Management Plan, Rehabilitation Management Plan and MOP. The Plan are reviewed and updated, as required. 	Compliant Ongoing

SoC No.	Statements of Commitment - Rehabilitation Consolidated Project Approval 05_0117t	Moolarben Coal Actions / Comment	Compliance Status
	<p>1 and Open Cut 2 extension areas and use of terrestrial riparian buffers.</p> <ul style="list-style-type: none"> The majority of the Open Cut 1 and Open Cut 2 extension areas will be rehabilitated for biodiversity outcomes. The 15.7 ha area of Class 3 agricultural land directly impacted by the Open Cut 1 and Open Cut 2 extension areas will be reinstated for agricultural purposes post mining. 	<ul style="list-style-type: none"> The 15.7 ha area of Class 3 agricultural land directly impacted by the OC1 and OC2 extension areas will be progressively reinstated for agricultural purposes when mining is completed. 	

5.15.2.2 Environmental Assessment Moolarben Coal Project, Stage 2

Rehabilitation of Stage 2 does not aim to return land disturbed by mining to its pre-mining state, but rather to rehabilitate the site with a mosaic of native open woodland, grassland and shrubland, improving the ecological value of the site in the long term. Areas of native vegetation and cleared lands disturbed by mining will be progressively rehabilitated and revegetated with native species. A Rehabilitation and Offset Management Plan will be developed for Stage 2 to guide the rehabilitation and revegetation of cleared lands under the control of Moolarben Coal, both within and outside the mine footprint. This plan will be integrated with a similar plan for Stage 1, and will consider the rehabilitation and offset objectives for the entire Moolarben Coal Complex.

Table 5.15.2.2b: Statements of Commitment - Project Approval 08_0135

SoC No.	Statements of Commitment - Rehabilitation Project Approval 08_0135	Moolarben Coal Actions / Comment	Compliance Status
38	MCM will rehabilitate the Stage 2 project area to restore forest and woodland across the valley landscape, including rehabilitating 631 ha of currently degraded secondary grasslands. Areas of derived native grassland, secondary grassland and exotic grassland will be rehabilitated to treed landscapes.	Moolarben Coal will rehabilitate the Stage 2 project area to restore forest and woodland across the valley landscape, including rehabilitating 631 ha of currently degraded secondary grasslands, as disturbed areas become available for rehabilitation.	Not yet triggered for Stage 2
39	MCM will implement best practice environmental management to progressively rehabilitate mined and degraded non-mined areas with a focus on the re-establishment of C/EEC Box Gum Woodland and threatened species habitat.	Progressive rehabilitation of mined and degraded non-mined areas will focus on the re-establishment of Box Gum Woodland and threatened species habitat, in the Stage 2 development areas.	Not yet triggered for Stage 2
40	The gradients of final landform slopes will be generally designed to be no more than 10 to 14 degrees. However, where the out-of-pit (OOP) emplacement area is spatially constrained the final gradients of these slopes will be limited to a maximum of 20 degrees, provided it is agreed to by the relevant regulators.	The gradients of out-of-pit (OOP) overburden emplacement area final landform slopes for OC4 development are being designed to be no more than 10 to 14 degrees, where practicable. The design of the gradients is dynamic and restricted to 10 to 14 degrees where	Not yet triggered for Stage 2

SoC No.	Statements of Commitment - Rehabilitation Project Approval 08_0135	Moolarben Coal Actions / Comment	Compliance Status
		the emplacement areas are not spatially constrained.	

5.15.3 Rehabilitation Objectives

[Moolarben Coal Complex Mining Operations Plan, September 2015]

[Rehabilitation Management Plan, Sep 2015]

[Biodiversity Management Plan, July 2015]

The overall rehabilitation objective for the Moolarben Coal Complex is to restore mine-disturbed land to a naturally vegetated state including biodiversity enhancement areas and areas suitable for grazing. In addition, the rehabilitation will improve existing degraded and cleared land within the Moolarben Coal Operations area, outside the mine disturbance footprint.

The specific rehabilitation objectives for the Moolarben Coal Complex include:

- Creating natural looking, stable and adequately drained post-mining landforms that are visually consistent with surrounding areas.
- Creating a self-sustaining and ecologically diverse post-mining landscape that includes areas compatible with the conservation values of the adjacent MGNR and GRNP and areas suitable for sustainable grazing, which are comparable to selected analogue sites.
- Revegetating and enhancing remnant vegetation on non-mined MCO-owned land with endemic native species so as to increase the amount and diversity of native woodlands.
- Creating effective wildlife corridors and habitat links between existing remnant vegetation in the Munghorn Gap Nature Reserve, Goulburn River National Park and other surrounding areas by increasing the continuity of woodland vegetation.
- Maintaining the diversity and genetic resource of flora currently existing within the locality.
- Maintaining and enhancing habitat for native fauna, including threatened fauna.
- Realigning and rehabilitating Murragamba and Eastern Creeks to be hydraulically and geomorphologically stable and ecologically diverse.
- Rehabilitating degraded riparian areas along Wilpinjong Creek, Moolarben Creek and along Murragamba and Eastern creeks downstream from mined areas within MCO-owned land.
- Reinstating subsidiary surface drainage.
- Improving soil condition and the native soil seed bank.
- Minimising soil erosion and sedimentation.
- Providing access for monitoring and adaptive management, control of competitive native and exotic flora and fauna species and suppression of fires.
- Progressing towards meeting closure and post-mining land use objectives (to be developed in consultation with stakeholders and described in a Mine Closure Plan) in a timely and cost effective manner.

5.15.3.1 Final Landform Concepts

Key features of the Moolarben Coal Complex final landform will include:

- One final void in OC1, a final void in the southern extent of OC3, and a final void at the eastern extent of OC4. The open cut pits behind the active mine area will be progressively backfilled with excavated overburden and progressively rehabilitated;
- Backfilled and rehabilitated open cut pits OC1, OC2, OC3 and OC4 (excluding final void areas);

- Out-of-pit overburden emplacements adjacent to OC1, OC2, OC3 and OC4 will also be progressively constructed and rehabilitated, as soon as practicable following dumping to the final height. Where steep slopes are constructed, suitable erosion control structures such as sediment dams, spillways, drainage and diversion channels, rock armouring and drop structures, contour banks, drop structures and rock armouring may be used to provide long-term stability;
- Infrastructure areas will be decommissioned and infrastructure removed from the site at the completion of mining at the Moolarben Coal Complex;
- Rehabilitated diversions of Murragamba Creek and Eastern Creek;
- Rehabilitated riparian areas along Wilpinjong Creek, Moolarben Creek and along Murragamba and Eastern Creeks south of OC4 on MCO-owned land will involve progressive diversion, realignment and rehabilitation of Murragamba Creek and Eastern Creek. The creeks will be rehabilitated and revegetated to maintain and enhance creek aquatic and riparian ecological function and connectivity; and
- Permanent constructed surface water management features including drainage and diversion channels and water storages will be managed to minimise erosion, potential for off-site sediment release and increasing water availability for uptake by vegetation in rehabilitated areas.

It was noted during the audit site inspections that the progressive rehabilitation that is occurring on the Moolarben Coal Complex site is being undertaken to meet the above general concepts.

No underground mining had yet occurred at the Moolarben Coal site, but the plans for the completion of underground mining operations associated with UG1, UG2 and UG4, is that all underground infrastructure (e.g. conveyors and dewatering systems) that can be recycled or reused will be removed. The various drift accesses and portals will be sealed and access restricted in accordance with requirements of the *Mine Design Guideline [MDG] 6001 Guideline for the Permanent Filling and Capping of Surface Entries to Coal Seams* [NSW DTIRIS Mine Safety Operations, 2012).

Rehabilitation of land above the underground mines subject to subsidence will be undertaken progressively during mine operations in accordance with the Moolarben Coal Complex Extraction Plans required under Project Approval 05_0117 Schedule 3 Condition 77 and Project Approval 08_0135 Schedule 4 condition 5.

5.15.3.2 Post Mining Land Use

The principal post-mining land use for the Moolarben Coal Complex is to:

- enhance biodiversity by providing a net increase in native vegetation and improving connectivity with adjacent woodland and forest communities at MGNR and GRNP. Native vegetation will be established across the majority of OC1 and OC4 footprints and along the eastern boundary of OC2 (including the OC2 eastern extension area), to integrate with remnant stands of vegetation and enhance habitat connectivity; and
- reinstate the pre-mining land use on areas of OC2 and OC3 by re-establishing agricultural land.

5.15.4 Rehabilitation Management Plan Commitments

A Vegetation Clearance Protocol (VCP) was developed and implemented to minimise impacts on threatened fauna species during native vegetation clearing at the Moolarben Coal Complex. (A detailed description of the VCP is provided in the Biodiversity Management Plan. Key components of the protocol include:

- delineation of areas to be cleared;
- pre-clearing procedures involve a Ground Disturbance Permit (GDP) process and pre-clearance surveys to identify:

- potential habitat features located within proposed disturbance areas (such as hollow bearing trees);
 - habitat features that can be salvaged for reuse in rehabilitation areas;
 - active nesting/roosting sites that may require active management prior to or during disturbance to minimise impacts on the fauna species;
 - weed management and/or treatment prior to or during disturbance; and
 - control of pest species prior to disturbance.
- fauna management measures; and
 - vegetation clearance measures.

Where practical and feasible, habitat features such as large hollows and rock identified during the pre-clearance surveys will be salvaged and stockpiled for reuse in rehabilitation areas or relocated to adjoining areas of remnant vegetation. (This practice was observed during the site inspection of rehabilitated areas where hollow bearing timber have been successfully reused and vertically placed for use by avian species, arboreal mammals, and microbats, and, placement of hollow logs and rocks creating cavities for habitat on rehabilitation areas by small ground dwelling mammals and reptiles).

Moolarben Coal is committed to progressively rehabilitating all areas disturbed by mining to achieve specific post-mining land uses (Environmental Assessment Stage 1 Optimisation Modification, May 2013).

5.15.4.1 Soil Stripping and Stockpile Management

Soil resources for rehabilitation were identified and characterised for the Moolarben Coal Project Stage 1 Environmental Assessment Report (Wells Environmental Services, 2006), Moolarben Coal Project Stage 1 Optimisation Modification Environmental Assessment (EMM, 2013b) and Moolarben Coal Project Stage 2 Environmental Assessment Report (Wells Environmental Services and Coffey Natural Systems, 2009).

Field and laboratory tests indicate that the soils are mainly acid in nature, have low organic matter content, are deficient in all major nutrients (such as phosphorus, sulphur and nitrogen) and are highly erodible (Wells Environmental Services and Coffey Natural Systems, 2009).

Soil resources are stripped at the relevant depth for the soil type and all suitable soil resources salvaged for re-use in rehabilitation. Soil and other organic matter are removed from cleared areas and either directly re-spread on rehabilitation areas or stockpiled for future reuse. Where practicable, some cleared vegetation not retained for habitat augmentation on rehabilitation areas may be mulched on site and mixed into topsoil during the stripping process to provide a soil conditioner.

Soil stockpile management strategies preserve the soil resource and improve overall soil health.

Topsoil is re-spread on contoured areas typically at a depth of 10 cm deep, or at a depth to match the pre-mining topsoil depth. Once re-spread, ameliorants (e.g. lime, gypsum, fertiliser and organics) will be applied (if necessary) and the area then ripped on the contour to assist incorporating the ameliorants. The use of soil ameliorants is designed to prevent surface crusting, increase organic content, infiltration and moisture retention and buffer surface temperatures to improve germination.

5.15.5 Rehabilitation Criteria

[Rehabilitation Management Plan, September 2015]

[Biodiversity Management Plan, July 2015]

[Water Management Plan, July 2015]

[Mining Operations Plan, September 2015]

Development of the rehabilitation performance indicators and completion criteria for the Moolarben Coal Complex project is an iterative process, whereby monitoring results are used to refine the completion criteria

for ongoing revisions of this Rehabilitation Management Plan. Rehabilitation performance will be considered to be satisfactory when monitoring data indicates the completion criteria have been met.

Water Management and erosion control procedures have been developed for the Moolarben Coal Complex in the Water Management Plan prepared to satisfy the requirements of Project Approval (05_0117) and Project Approval (08_0135).

Surface water runoff is managed to minimise erosion, prevent off-site sediment release and increase water availability for uptake by vegetation in rehabilitated areas. Drainage of rehabilitation areas is developed in accordance with best practice guidelines *including Managing Urban Stormwater: Soils and Construction* Volume 1 (Landcom 2004) and *Managing Urban Stormwater: Soils and Construction* Volume 2 (DECC 2008).

Run-off from rehabilitation areas will be managed via the inclusion of drainage and diversion channels and sediment dams and retention basins. Drainage and diversion channels and swales are installed to divert run-off and carry surface water away from erodible surfaces, particularly during construction and seed emergence stages of rehabilitation.

Sediment dams and ponds are designed and constructed to accommodate critical storm events. The inclusion of sediment dams and ponds into the final landform will increase potential water availability in the post-mining landscape.

Drainage from OC4 rehabilitation areas will be directed to the reconstructed and rehabilitated Murrumbidgee Creek and Eastern Creek away from the final void.

Erosion and sediment control measures implemented to protect the quality of surface water and reduce the potential for soil loss through erosion and are constructed in accordance with the Water Management Plan.

5.15.6 Integration with the Biodiversity Management Plan

The Biodiversity Offset Strategy developed in accordance with Project Approval (05_0117) Schedule 3 conditions 34 and 36, and Project Approval 08_0135 Schedule 3 conditions 30 and 39, addresses offset impacts associated with development of the Moolarben Coal Complex. The biodiversity offset areas include areas of remnant vegetation adjacent to existing conservation areas (including Mughorn Gap Nature Reserve and Goulburn River National Park).

Key rehabilitation objectives for the Moolarben Coal Complex are described in the Biodiversity Management Plan section 4.2, to integrate rehabilitation of the site with surrounding biodiversity values.

Prior to relinquishing the mining leases associated with Stage 2 of the Moolarben Coal Complex, Moolarben Coal Operations will make suitable arrangements in consultation with the OEHS and to the satisfaction of the Secretary of the DP&E to protect the rehabilitation areas with conservation value in perpetuity.

5.15.7 Audit Inspection of Rehabilitation

The site inspection of the rehabilitation status of the Moolarben Coal Stage 1 activities was conducted on 7 December 2015. The majority of the Project Approval No. 05_0117 rehabilitation conditions have been triggered.

The Stage 2 site establishment for OC4 only commenced in September 2015, and at the date of this (December 2015), only the Project Approval No. 08_0135 management plan preparations were active as no rehabilitation requirements had been triggered.

There was a high level of awareness and interest amongst site personnel from discussions, with evidence of rehabilitation initiatives from Moolarben Coal mine operations personnel (i.e. non-environmental personnel) being implemented to enhance the rehabilitation of completed areas (e.g. erection of stag trees and placement of rock habitat to provide fauna refuge on completed rehabilitated overburden emplacements).

Topsoil testing and amelioration is undertaken on site to address the chemical limitations of the site topsoil, however, routine testing and amelioration of subsoils/spoil is not undertaken.

The Environmental Assessment Moolarben Coal Project - section 5.10 Soils, dated September 2006 and Rehabilitation Management Plan section 5 - Table 6), identify the presence of dispersive subsoils across the Moolarben site. There is a high risk of tunnel and subsequent gully erosion risk where water is able to pond or in engineered drainage structures such as diversion banks and rock drop structures. Untreated dispersive subsoils/spoils also demonstrate poor water infiltration and water holding capacity limiting plant available water potentially resulting in premature wilting of vegetation and increased run-off.

The current landform design uses diversion banks (channel banks) as permanent drainage features. The channel banks on site are well constructed however they pose a long term tunnel and gully erosion risk where dispersive soils/spoils are present (Loch, 2004). Diversion banks are used to reduce slope length and therefore run-off velocity where the velocity is likely to exceed the maximum permissible velocity of the exposed soil. Once sufficient soil surface cover has been achieved using grasses, the diversion banks can be removed and sheet flow conditions returned.

The conceptual designs for Murragamba Creek and Eastern Creek diversions are provided in the Rehabilitation Management Plan (Appendix C: Moolarben Coal Project – Stage 2 Preferred Project Concept Design for Proposed Diversions of Murragamba and Eastern Creeks, Worley Parsons - May 2011). The design report does not discuss the erosion and revegetation risk posed by dispersive spoil that may be used to construct the diversions. (It is not discussed in section 5.2.3 of the design report that deals with erosion and sediment control).

When the final design of the creek diversions is being developed, the design should consider the dispersive characteristics of the soils and amelioration to minimise the potential for tunnel erosion occurring in the final stabilised channels.

5.15.8 Rehabilitation Monitoring Program

Annual rehabilitation monitoring of rehabilitated area of the Moolarben Coal Complex site includes:

- measurement of the progress and success of the rehabilitation against performance indicators and completion criteria (Rehabilitation Management Plan section 6 Performance Indicators);
- continuous improvement process to refine rehabilitation methodologies and completion criteria (Rehabilitation Management Plan section 9 Intervention, Adaptive Management and Continual Improvement); and
- identify when rehabilitation is not trending toward completion criteria in an appropriate timeframe, triggering adaptive management (Rehabilitation Management Plan section 7 – Rehabilitation Monitoring Program).

Rehabilitation monitoring program results are reported and assessed in the AEMR (section 5 Rehabilitation) annual rehabilitation monitoring report providing a summary of the monitoring results, including any trend analysis and proposed modifications to the program.

5.15.8.1 Monitoring Site Selection

Permanent transects at a number of representative monitoring sites have been established in the rehabilitation areas and corresponding analogue sites across OC1 rehabilitation areas (Figure 7). Rehabilitation transects will continue to be established on rehabilitation areas within 24 months of the rehabilitation areas being seeded. Analogue Sites representative of Box Gum Grassy Woodland, Sedimentary Ironbark Forest and riparian rehabilitation areas have been established in the Durrigere State Conservation Area and Goulburn River National Park (A1A and A1B, A5A and A5B and A2A and A2B), Analogue sites have also been established in woodland areas relevant to potential subsidence areas associated with UG4 (i.e. sites A6A and A6B). A baseline assessment of agricultural lands associated with the OC2 footprint was undertaken prior to mining. These baseline results will be used to determine representative performance indicators and completion criteria for agricultural rehabilitation areas.

5.15.8.2 Ecosystem Function Analysis

The Ecosystem Function Analysis (EFA) (Tongway and Ludwig, 2004; 2011) will be used to assess rehabilitation success and comprises the following components:

- Landscape Function Analysis (LFA);
- Landscape Organisation Index (LOI);
- Soil Surface Assessment (producing Stability, Infiltration and Nutrient Indices); and
- Vegetation Dynamics including assessment of: - canopy cover for over-storey components; - ground cover components (plant basal cover, bare ground and leaf litter); - woody species density; - woody species richness; - woody species function/health; - habitat complexity; and - disturbance factors.

Flora monitoring will also be undertaken in permanent quadrats established along the EFA transects. At least three transects will be established in a rehabilitation area (where possible). All visible ground cover plants within each quadrat is recorded to determine the species abundance and diversity. Dominant species present are compared to those of analogue sites to determine if rehabilitation is progressing toward the targeted vegetation community.

5.15.8.3 Monitoring Program Frequency

The flora component of the monitoring program will be undertaken as follows:

- Annual LFA monitoring will be conducted generally in the lead up to spring (August – September) for areas of active regeneration.
- Vegetation dynamics (i.e. densities, height and cover) sampling will be undertaken every four years in areas of established vegetation (starting no sooner than Year 5 [2020]);
- Immediately after an event such as intense rainfall events or a bushfire, LFA will be implemented reactively to sample any changes in landscape scores;
- Annual ground cover floristic quadrat monitoring will be undertaken one year during spring and the next year during autumn to note seasonal species and growth rates and impacts from adverse weather conditions. The DECCW guidelines for assessing Box Gum Woodlands recommends autumn survey, as one of the key criteria for assessing the presence of the community is the dominance of native perennials in the ground layer.

Moolarben Coal record the details of each rehabilitation campaign (including mapping) to provide context for rehabilitation monitoring results and assist the continuous improvement process. The key monitoring parameters to be included in the program include:

- landform design details;
- drainage design details;
- substrate geology (i.e. geology of overburden directly below topsoil);

- site preparation techniques (e.g. topsoil and source, time of sowing, soil ameliorants used etc.);
- revegetation methodologies (e.g. rate and type of fertiliser, cover crop species, seeding rates, native seed viability, native seed sources/location, seedling sources, revegetation contractors);
- weather conditions;
- photographic records; and
- initial follow-up care and maintenance works and any ongoing maintenance works required.

5.15.9 Rehabilitation Status – December 2015

At the time of development of the Rehabilitation Management Plan (September 2015) approximately 172 hectares (ha) of rehabilitation primarily associated with completed portions of the OC1 environmental bund and overburden emplacement had been undertaken to reduce the disturbance footprint. In addition, interim/temporary rehabilitation in the form of landscaping and planting was completed around the main offices and entry to the operational areas. External batters on dam walls and rail loop embankments were rehabilitated by topsoiling and establishing fast growing cover crop/pasture species.

Consistent with the rehabilitation principles and objectives (Sections 4.1 and 4.2) and in accordance with Project Approval (05_0117) Schedule 3 conditions 66 and 67, and Project Approval (08_0135) Schedule 3 condition 54, areas disturbed by mining (including the environmental bunds) are progressively rehabilitated following completion of active mine operations.

Progressive rehabilitation of overburden emplacements has occurred as soon as practicable following construction of the emplacements to the final height.

Progressive rehabilitation including interim / temporary rehabilitation (such as seeding with sterile cover crops) of overburden emplacement areas and infrastructure areas that are expected to be inactive for a period of time, has also occurred to temporarily mitigate visual impacts, minimise dust generation and erosion and to contribute organic matter for future rehabilitation.

5.15.10 Community Complaints

No community complaints related to rehabilitation were received by Moolarben Coal between 2013 and 2015.

5.15.11 Annual Review (AEMR)

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 5 reports on rehabilitation activities during the AEMR reporting period related to:

- Rehabilitation of Disturbed Land -Open Cuts (AEMR section 5.2);
- Revegetation of Disturbed Land – Offset Areas (AEMR section 5.3);
- Rehabilitation Trials and Research (AEMR section 5.4); and
- Rehabilitation Summary (AEMR section 5.6) that provides a comparison of activities/progress and
- Activities Proposed for the Next AEMR Period (AEMR section 6)

The AEMR provides a detailed and valid representation of the status of rehabilitation, environmental management and monitoring, and review of environmental performance of the Moolarben Coal Complex rehabilitation activities.

5.15.12 Matters Raised by Relevant Agencies

No specific matters related to rehabilitation were raised by the agencies during consultation.

5.15.13 Improvement Opportunities

The following improvement opportunities have been prepared by the Rehabilitation expert (who was endorsed by the DP&E for the conduct of this Independent Environmental Audit), to assist in reducing potential risk to rehabilitation activities at the Moolarben Coal site:

As development of rehabilitation performance indicators and completion criteria is an iterative process, the completion criteria should be reviewed and revised where necessary using monitoring results to refine the completion criteria in future revisions of the Rehabilitation Management Plan and the Mining Operations Plan in accordance with clause (i) Explanatory Note 2 – Rehabilitation and Mine Closure in *ESG3: Mining Operations Plan (MOP) Guidelines September 2013* NSW Trade and Investment.

The testing of subsoil and spoils should be refined to identify reactive soils and guide amelioration requirements to reduce the risk of tunnel and gully erosion in rehabilitated areas and creek line restoration.

As the final design of the Murragamba and Eastern Creek diversions are being developed, consideration of removing the channel banks from rehabilitated areas once adequate grass cover has been established ($\geq 70\%$), to re-establish sheet flow conditions to minimise the potential for tunnel and subsequent gully erosion. Landform stability using this approach can be verified via spoil characterisation, the use of an erosion prediction model and landform evolution models (such as WEPP and SIBERIA) can be useful relatively low cost tools for assisting landform design planning.

In future revisions of the Rehabilitation Management Plan, Biodiversity Management Plan and Mining Operations Plan the management and mitigation measures to be undertaken on site should be refined to provide clear direction as to what management and mitigation measures will be implemented to the various areas of the site as the nature of the rehabilitation and restoration of the final landform and land uses are determined.

5.15.14 Conclusion

<u>Rehabilitation</u>	<u>Compliance Status</u>	<u>Compliant Ongoing</u>
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The rehabilitation conditions of Project Approval No. 05_0117 have been triggered for the Stage 1 works and operations. As the Stage 2 site establishment commenced in September 2015, only the management plan requirements of Project Approval 08_0135 had been specifically triggered for the Stage 2 works at the date of this audit.

Rehabilitation of the Stage 1 Moolarben Coal development was observed to be undertaken progressively on-site with the areas available for rehabilitation stabilised and contoured satisfactorily and surface drainage structures established on the finished areas. No significant erosion was observed on the rehabilitated slopes. There was a high level of awareness and interest amongst site personnel from passing discussions with evidence of rehabilitation initiatives from non-environmental personnel such as the erection of stag trees to provide fauna refuge.

5.16 Subsidence

[Project Approval 05_0117 Schedule 3 condition 26 to 28]

[Project Approval 08_0136 Schedule 4 condition 1 to 10]

The subsidence conditions in the Project Approval 05_0117 Schedule 3 condition 26 to 28 and Project Approval 08_0136 Schedule 4 conditions 1 to 10 had not been triggered at the date of this audit (December 2015) as no underground mining had occurred at the Moolarben Coal Complex site.

Prior to commencement of first workings for the Stage 1 Underground Mine UG4, the Subsidence Management Plan (Project Approval 05_0117 Schedule 3 condition 27) will be prepared and submitted to the DRE for approval.

Prior to commencement of first workings for the Stage 2 Underground Mine UG2, the Extraction Plan (Project Approval 08_0136 Schedule 4 condition 5) will be prepared and submitted to the DRE for approval.

5.17 Community Consultation and Complaints

[Project Approval 05_0117 Schedule 5 condition 6]

[Project Approval 08_0136 Schedule 6 condition 6]

[Environment Protection Licence 12932 condition M5 and M6]

5.17.1 Community Complaints Procedure

[Environment Protection Licence 12932 condition M5 and M6]

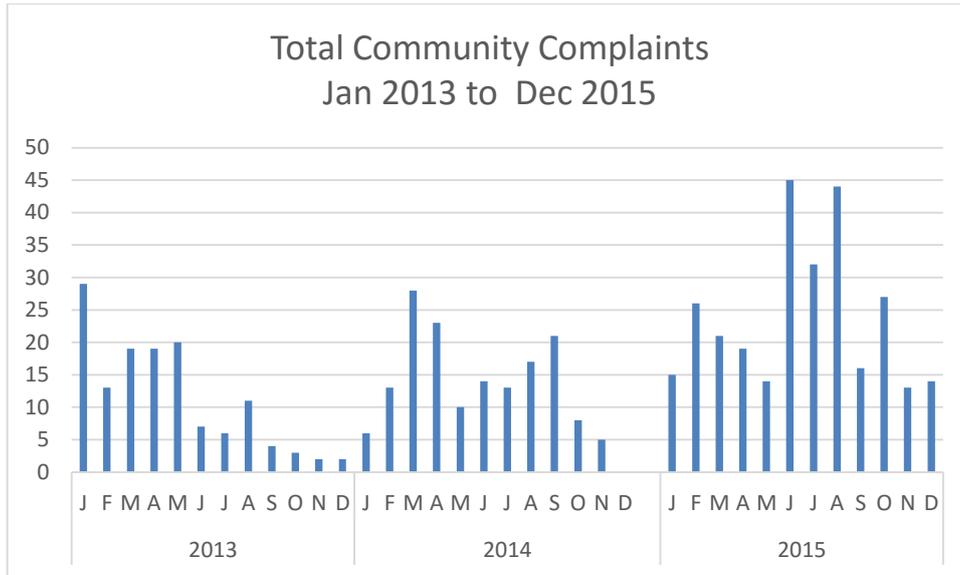
Moolarben Coal Operations has a developed Community Complaints Procedure that details how to receive, respond to, and record and action any community complaints. Specific details recorded relating to any community complaint include:

- location of the complaint;
- nature of the complaint;
- method of the complaint, e.g. telephone;
- monitoring results, including meteorological conditions at the time of the complaint;
- site investigation outcomes;
- site activity and activity changes; and
- any actions assigned.

Moolarben Coal maintains a 24hour Community Hotline (1800 556 484) to respond to complaints from neighbouring residents or interested stakeholders. The Community Complaints Hotline is advertised in the local media and available on the Moolarben Coal website and in community newsletters

5.17.2 Community Complaints Review

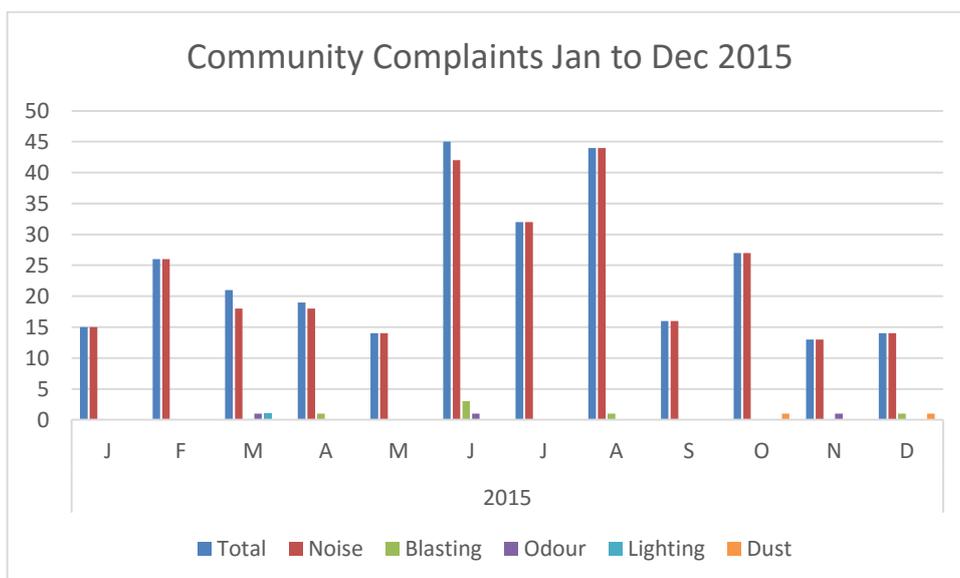
The majority of the total complaints received during the January 2013 to December 2015 period were related to noise with the complaints received from the Ridge Road / Winchester Crescent/ Moolarben Road / Ulan Road area to the south and west of the Moolarben Coal operations. Less than 1% of all complaints received between January 2013 to December 2015 were related to blasting (12 complaints in 2013-2014 and 6 complaints in 2015), odour (3 complaints in 2015), and lighting (1 complaint in March 2015).



The complaints during the 2012-2013 AEMR reporting period came from 18 residents, with 55% of the complaints received from one resident. This was a significant decrease in total complaints compared to the previous reporting period (i.e. 2011-2012), attributable to Moolarben Coal introducing DuraTray trucks to the mining fleet, the use of dedicated Mining and Production Environmental Assistants (MPEA) to provide real-time feedback on complaints to the mining operations, and mine planning when complaints are lodged. The MPEA report directly to the mine operators to enable protected work areas to be developed and provide response to complaints for changes to operations where practicable or necessary if monitoring indicates noise impact exceeds the predicted or regulatory criteria at the complainant’s residence.

The complaints during 2013-2014 reporting period came from 33 residents, with 37% of the complaints received from one resident. During this period the increase in noise complaints can be attributed to the increase in mining activity in the south, particularly in Open Cut 2.

The majority of complaints lodged during January to December 2015 were related to noise, with 32% received from one resident. Small numbers of complaints in relation to dust (2), blasting (6), odour (3) and lighting (1) were received during 2015.



Moolarben Coal respond to all complainants and have dedicated Mining and Production Environmental Assistants who respond to and report in real time on noise emissions and mine operations at the time of the complaints. Noise emissions, blast vibration and overpressure from the Moolarben Coal operations have not exceeded the Project Approval criteria.

Independent noise reviews were undertaken at the request of DP&E and these reviews demonstrated sustained compliance. (Jeff Parnell Senior Noise Specialist D&PE indicated no current issues).

Acquisitions in accordance with the Project Approvals and ongoing community consultation by Moolarben Coal has continued to manage the response to community complaints. None of the complainants have Acquisition upon Request rights under Project Approval 05_0117 Schedule 3 condition 1A or 1B, or Schedule 4, or under Project Approval 08_0135 Schedule 3 condition 1 or Schedule 5.

The introduction of the 24hour 7day a week role of Mining and Production Environmental Assistants for the Moolarben Coal Complex in March 2013 is considered a positive response by the company for the investigation of complaints with immediate feedback to the mining operations personnel to implement mitigation measures where required, specifically to address the nature of the complaint(s).

5.17.3 Community Consultative Committee

[Project Approval 05_0117 Schedule 5 condition 6]

[Project Approval 08_0136 Schedule 6 condition 6]

The Community Consultative Committee (CCC) was established for the Moolarben Coal Project under Project Approval 05_0117 Schedule 5 condition 6. The CCC includes members of the local community, representatives from Mid-Western Regional Council, and representatives of Moolarben Coal. The meetings are chaired by an Independent Chairperson (Garry West until Meeting 29 in December 2013) and John Turner between April 2014 and November 2015. All meetings are minuted with the CCC Minutes available publicly on the Moolarben Coal website (www.moolarbencoal.com.au).

The CCC was reconstituted under Project Approval 08_0135 Schedule 6 condition 6 in 2015 after approval of the Moolarben Coal Complex Stage 2. The first meeting held under Project Approval 08_0136 Schedule 6 condition 6 occurred on 6 May 2015.

Community Consultative Committee (CCC) meetings were held on a quarterly basis during 2012 and 2013, and each 4 months in 2014 and 2015.

5.17.3 Annual Review

[Project Approval 05_0117 Schedule 5 condition 4]

[Project Approval 08_0135 Schedule 6 condition 4]

The AEMR's prepared for the Moolarben Coal Project in 2012, 2013 and 2014 generally address the elements of Project Approval 05_0117 Schedule 5 condition 4 for Stage 1 of the Moolarben Coal Project.

(Note: Stage 2 site establishment only commenced in September 2015 so initial annual review of the Stage 2 activities under Project Approval 08_0135 Schedule 6 condition 4 will be presented in the 2015 AEMR).

The AEMR section 4 reports on community relation during each AEMR reporting period, with a summary of community complaints (section 4.1 and Table 90), community liaison, sponsorships and donations (section 4.2) and the Community Consultative Committee (section 4.3).

The AEMR provides a detailed and valid representation of the status of community consultation related to environmental performance of the Moolarben Coal Complex.

5.17.4 Conclusion

The Community Consultative Committee (CCC) established for the Moolarben Coal Project includes members of the local community, representatives from Mid-Western Regional Council, and representatives of Moolarben Coal. CCC meetings were held on a quarterly basis during 2012 and 2013, and each 4 months in 2014 and 2015.

The majority of the total complaints received during the January 2013 to December 2015 period were related to noise with the complaints received from the south and west of the Moolarben Coal operations. Moolarben Coal respond to all complainants and have dedicated Mining and Production Environmental Assistants who respond to and report in real time on noise emissions and mine operations at the time of the complaints. Noise emissions, blast vibration and overpressure from the Moolarben Coal operations have not exceeded the Project Approval criteria.

The introduction of the role of Mining and Production Environmental Assistants for the Moolarben Coal Complex is considered a positive response by the company for the investigation of complaints with immediate feedback to the mining operations personnel to implement mitigation measures where required, specifically to address the nature of the complaint(s).

6. Conclusion and Recommendations

The Independent Environmental Audit of the Moolarben Coal Project activities and operations between January 2013 and December 2015 was conducted in December 2015 to satisfy the Project Approval 05_0117 and Project Approval 08_0135 conditions of approval.

The findings of the audit indicated that the management of environmental performance of the Moolarben Coal Project Stage 1 and Stage 2 activities has been generally compliant with the Project Approvals, Environment Protection Licence, Bore Licences and Mining Lease environmental conditions, during the period of January 2013 to December 2015.

The Project Approval 05_0117 Modification 9 granted in June 2014 made significant changes to the conditions of approval for Stage 1 of the Moolarben Coal Project and these conditions and the subsequent minor Modifications 10 and 11 were assessed during this audit for the Stage 1 operations.

The Project Approval 08_0135 was granted on 30 January 2015 for Stage 2 of the Moolarben Coal Project and site preparation and establishment for the Stage 2 Open Cut 4 commenced in September 2015, therefore the activation of many of the Project Approval 08_0135 conditions had not occurred at the date of this audit (December 2015). Management plan preparation and approval were the main conditional requirements that had been triggered prior to commencement of surface works for Open Cut 4.

The following audit findings summarise the conditional aspects where potential improvement opportunities are provided for consideration by Moolarben Coal Operations in relation to environmental management of the project operations:

Annual Review

The format and content of the annual review, titled Annual Environmental Management Report, prepared by Moolarben Coal to satisfy Project Approval 05_0117 Schedule 5 condition 4 and Project Approval 08_0135 Schedule 6 condition 4, presents a detailed annual review of the environmental performance of the project that generally conforms with the format required by the Project Approvals. The content of the Annual Environmental Management Report provides an accurate reporting of the status and data for the operations of the project for the periods covered by the documents. The format and content of the annual reviews should consider the Annual Review Guideline (DP&E October 2015).

Recommendation – Annual Review:

It is recommended that future Annual Reviews be prepared with consideration of the format and content of the recently released Annual Review Guidelines (October 2015).

Blasting

The implementation of the Blast Management Plan for the Moolarben Coal Complex describes the management of blasting associated with the open cut operations (including management of overpressure, vibration, and fly-rock management) and generally conforms with best practice. The blast monitoring between January 2013 and December 2015 demonstrated compliance with the blast overpressure and vibration criteria at all monitored locations for all blasts. Generation of blast fume that occurred between 2013 and 2015 was reported in accordance with the Pollution Incident Response Management Plan. The fume generation was generally due to the presence of water in the blast drill-holes and/or the quality of the product used for blasting.

Recommendation:

It is recommended that management of blasts to reduce potential of fume generation should be reviewed in relation to the Blast Fume Management Strategy by ensuring the quality of product used for the blasts is checked before the blast is initiated and meets the gassing specifications provided by the supplier.

Energy Savings Plan

The Energy Savings Action Plan (ESAP) for Moolarben Coal developed in December 2008 was approved by DP&I on 17 December 2008. No update of the Energy Savings Action Plan program to reduce energy use on the site has occurred since 2008. A review of the existing Energy Savings Action Plan should be conducted to identify energy saving actions that can be introduced in relation to the maintenance and operation of the vehicle fleet and other mining equipment operating at the mine since the preparation of the initial Energy Savings Action Plan in 2008.

Recommendation:

It is recommended that the Energy Savings Action Plan be reviewed to identify any energy saving measures which may be implemented on site to reduce the energy use in relation to the mining operations. The ESAP is also to include a program to monitor the effectiveness of the measures to reduce energy use.

Biodiversity Management

The Biodiversity Management Plan and its integration with the Rehabilitation Management Plan are being implemented and will be progressively refined as the restoration of disturbed areas is undertaken and the mechanism for management of the offset areas is confirmed through consultation with the OEH and DP&E. Arrangements to provide long-term security for the offset areas described in Project Approval 05_0117 Schedule 3 condition 34 - Table 12 and Project Approval 08_0135 Schedule 3 condition 30 Table 15, have been developed in consultation with OEH (NWPS) and the documentation prepared and submitted to the Secretary for approval in December 2015. Biodiversity values are being managed through the implementation of a range of strategies and monitoring to minimise impacts and conserve and enhance biodiversity values both within the mining lease areas and in the proposed offset areas.

Recommendation – Biodiversity Offsets:

It is recommended that the staged development of the Biodiversity Management Plan and offset management to meet the long term security requirements of the Project Approval and the EPBC Approvals conditions, be progressed in general accordance with the correspondence submitted to DP&E on 4 December 2015 to secure the biodiversity offset areas.

Rehabilitation

The rehabilitation conditions of Project Approval No. 05_0117 have been triggered for the Stage 1 works and operations. As the Stage 2 site establishment commenced in September 2015, only the management plan requirements of Project Approval 08_0135 had been specifically triggered for the Stage 2 works at the date of this audit.

Rehabilitation of the Stage 1 Moolarben Coal development was observed to be undertaken progressively on-site with the areas available for rehabilitation stabilised and contoured satisfactorily and surface drainage structures established on the finished areas. No significant erosion was observed on the rehabilitated slopes. There was a high level of awareness and interest amongst site personnel from passing discussions with evidence of rehabilitation initiatives from non-environmental personnel such as the erection of stag trees to provide fauna refuge.

As the rehabilitation activities are progressive as mining areas become available for completion, the following improvement opportunities are provided to assist in reducing potential risk to rehabilitation activities at the Moolarben Coal site:

- As development of rehabilitation performance indicators and completion criteria is an iterative process, the completion criteria should be reviewed and revised where necessary using monitoring results to refine the completion criteria in future revisions of the Rehabilitation Management Plan and the Mining Operations Plan in accordance with clause (i) Explanatory Note 2 – Rehabilitation and Mine Closure in *ESG3: Mining Operations Plan (MOP) Guidelines September 2013* NSW Trade and Investment.
- The testing of subsoil and spoils should be refined to identify reactive soils and guide amelioration requirements to reduce the risk of tunnel and gully erosion in rehabilitated areas and creek line restoration.
- As the final design of the Murrumbidgee and Eastern Creek diversions are being developed, consideration of removing the channel banks from rehabilitated areas once adequate grass cover has been established ($\geq 70\%$), to re-establish sheet flow conditions to minimise the potential for tunnel and subsequent gully erosion. Landform stability using this approach can be verified via spoil characterisation, the use of an erosion prediction model and landform evolution models (such as WEPP and SIBERIA) can be useful relatively low cost tools for assisting landform design planning.
- In future revisions of the Rehabilitation Management Plan, Biodiversity Management Plan and Mining Operations Plan the management and mitigation measures to be undertaken on site should be refined to provide clear direction as to what management and mitigation measures will be implemented to the various areas of the site as the nature of the rehabilitation and restoration of the final landform and land uses are determined.

Attachment A

Project Approval 05_0117 Conditions Table

Attachment B

Statements of Commitment – Environmental Assessment 2006

Attachment C

Project Approval 08_0135 Conditions Table

Attachment D

Statements of Commitment – Environmental Assessment 2009

Attachment E

Environment Protection Licence 12932

Attachment F

Mining Leases – Environmental Condition Table

Attachment G

Water Licence 20BL172002 (Mining)

Water Licence 20BL173923 (Mining/Industrial) Condition Tables

Moolarben Coal Project - Compliance Tables

This Independent Environmental Audit assessed the Moolarben Coal Project activities for compliance with the intent of the Consolidated Project Approval 05_0117, Project Approval 08_0135, Environment Protection Licence 12932, Mining Leases 1605, 1606, 1628, 1691 and 1715, and Bore Licences 20BL172002 and 20BL173923 environmental conditions via site inspections, document review and verification of relevant documentation related to the conditions of approval, expressed in the Attachments to this report as:

Status	Description
Compliant	Where verifiable evidence demonstrates the intent of the elements of the requirements of the regulatory approval and appropriateness of implementation against the Project Approval Condition has occurred.
Compliant Ongoing	The intent and specific requirements of the condition have been met (as above) and the requirements are ongoing for the operation of project.
Administrative Non-compliance	A technical non-conformance with a Project Approval condition that would not result in material harm to the environment (e.g. the submission of a report to government later than required under the approval conditions).
Non-Compliant (Low Risk)	Non-compliance with the potential for moderate environmental consequences, that is unlikely to occur, or, potential for low environmental consequence but is likely to occur.
Non-Compliant (Moderate Risk)	Non-compliance with the potential for serious environmental consequences but unlikely to occur, or, potential for moderate environmental consequence but likely to occur.
Non-Compliant (High Risk)	Non-compliance with the potential for significant environmental consequences, regardless of the likelihood of occurrence.
Not active / Not triggered	A regulatory approval requirement / condition that has an activation or timing that had not been triggered at the time of the audit.
Noted	A statement or note where no assessment of compliance is required.

Attachment A

Project Approval 05_0117

Red type represents the November 2008 modification (MOD 1)

Blue type represents the December 2008 modification (MOD 2)

Green type represents the June 2009 modification (MOD 4)

Purple type represents the October 2009 modification (MOD 5)

Orange type represents the January 2010 modification (MOD 6)

Pink type represents the May 2010 modification (MOD 8)

Violet text represents the January 2011 modification (MOD 7)

Aqua text represents the June 2014 modification (MOD 9)

Maroon text represents the January 2015 modification (MOD3)

Olive green type represents the April 2015 modification (MOD 10)

Brown type represents the July 2015 modification (MOD 11)

Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	Schedule 2 - Administrative Conditions			
	Obligations to Minimise Harm to the Environment			
1	In addition to meeting the specific performance criteria established under this approval, the Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the project.			Noted
2	The Proponent shall carry out the project generally in accordance with the: (a) EA; (b) EA (MOD 1); (c) EA (MOD 2); (d) EA (MOD 4); (e) EA (MOD 5); (f) EA (MOD 6); (g) EA (MOD 7); (h) EA (MOD 8); (i) EA (MOD 9);	<ul style="list-style-type: none"> Environmental Assessment, Moolarben Coal Project Sep 2006 Modifications to the Project Approval - Moolarben Coal Project, MOD 1, Aug 2008. Environmental Assessment - Section 75W MOD 2, Dec 2008 Environmental Assessment Moolarben Coal Project Stage 2 Environmental Assessment Report MOD 3, Mar 2009 Balloon Loop Modification - MOD 4, Apr 2009 	The Moolarben Coal Project Stage 1 is being developed generally in accordance with the <i>Environmental Assessment Report Moolarben Coal Project September 2006</i> and Modifications 1 to 11.	Compliant Ongoing

Independent Environmental Audit - December 2015

Moolarben Coal Project

Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	<p>(j) EA (MOD 3); (k) EA (MOD 10); (l) EA (MOD 11); (m) statement of commitments; and (n) the conditions of this approval.</p> <p><i>Note</i></p> <ul style="list-style-type: none"> • The general layout of the project is shown in Appendix 2; and • The statement of commitments is shown in Appendix 3. 	<ul style="list-style-type: none"> • Environmental Assessment - Section 75W Modification Application – MOD 5, Jul 2009 • Environmental Assessment - Section 75W Modification Application – MOD 6, Dec 2009 • Environmental Assessment – Section 75W Modification Application, MOD 7, Mar 2010 • Environmental Assessment – Section 75W Modification Application – MOD 8, Apr 2010 • Environmental Assessment - Moolarben Coal Project Stage 1 Optimisation Modification – MOD 9, May 2013 • Modification Application 05_0117 - MOD 10, 24 Feb 2015 • Environmental Assessment Modification Application 05_0117 MOD 11 Apr 2015 		
3	<p>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 approval shall prevail to the extent of any inconsistency</p>			Noted
4	<p>The proponent shall comply with any reasonable requirement/s of the Secretary arising from the department's assessment of: (a) any reports, plans, programs, strategies, reviews, audits or correspondence that are submitted in accordance with this approval; and (b) the implementation of any actions or measures contained in these documents.</p>			Noted
	LIMITS ON APPROVAL			
	Mining Operations			
5	<p>The Proponent may carry out mining operations on the site until 31 December 2038.</p> <p><i>Note: Under this approval, the Proponent is required to rehabilitate the site and perform additional undertakings to the satisfaction of both the Secretary and the Executive Director Mineral Resources. Consequently, this approval will continue to apply in all other respects other than the right to conduct mining operations until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily</i></p>		<p>Moolarben Coal Project mining operations may be conducted on the site until 31 December 2038.</p>	Compliant Ongoing

Independent Environmental Audit - December 2015

Moolarben Coal Project

Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	Coal Extraction			
6	<p>The Proponent shall not extract more than:</p> <p>(a) 8 million tonnes of ROM coal from the open-cut mining operations of the project in any calendar year except 2015 and 2016;</p> <p>(b) 9 million tonnes of ROM coal from the open-cut mining operations of the project in the calendar years 2015 and 2016; and</p> <p>(c) 4 million tonnes of ROM coal from the underground mining operations of the project in any calendar year.</p>	<ul style="list-style-type: none"> 2012-2013 AEMR section 2.10 2013-2014 AEMR section 2.4 	<p>Coal extraction from the Moolarben Coal open cuts has not exceed 9Mtpa between January 2013 and December 2015.</p> <p>Coal extraction from the Moolarben Coal Stage 1 open cuts between 1 September 2012 and 30 August 2013 was 7.886 million tonnes (AEMR 2012-2013).</p> <p>Coal extraction from the Moolarben open cut mines did not exceed 9 million tonnes per annum between 1 September 2013 and 31 December 2015. For the 16-month period (1 September 2013 to 31 December 2014), 10.95 Mt of run-of-mine (ROM) coal was mined (AEMR 2013-2014).</p>	Compliant Ongoing
	Coal Processing			
7	The Proponent shall not process more than 13 million tonnes of coal from the Moolarben mine complex in any calendar year.		Coal processing through the Moolarben Coal CHPP has not exceeded 13 Mtpa between January 2013 and December 2015.	Compliant Ongoing
	Coal Transport			
8	<p>The Proponent shall ensure that:</p> <p>(a) all product coal is transported from the Moolarben mine complex by rail; and</p> <p>(b) no more than 5 laden trains leave the Moolarben mine complex each day.</p>	<ul style="list-style-type: none"> 2012-2013 AEMR section 2.4 2013-2014 AEMR section 2.4 	<p>All product coal is transported from the Moolarben mine complex by rail.</p> <p>Less than 5 laden trains a day leave the Moolarben mine complex.</p>	Compliant Ongoing
	STRUCTURAL ADEQUACY			
9	<p>The Proponent shall ensure that all 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.</p> <p><i>Notes: • Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.</i></p>		All buildings designed and erected for the Stage 1 works were constructed in accordance with the requirements of BCA. Construction Certificates and Occupation Certificates were obtained prior to occupation of the buildings	Compliant Ongoing
	DEMOLITION			
10	The Proponent shall ensure that all demolition work is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version.	<ul style="list-style-type: none"> AS 2601-2001: The Demolition of Structures 	Demolition of accommodation/administration buildings occurred during 2015 in accordance with AS 2601. The development of additional Moolarben Coal Project infrastructure also involved the removal and relocation of some demountable buildings during the site development for Stage 2.	Compliant

Independent Environmental Audit - December 2015

Moolarben Coal Project

Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	PROTECTION OF PUBLIC INFRASTRUCTURE			
11	<p>Unless the Proponent and the applicable authority agree otherwise, the Proponent shall:</p> <p>(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the project; and</p> <p>(b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the project.</p> <p><i>Note: This condition does not apply to any damage to public infrastructure subject to compensation payable under the Mine Subsidence Compensation Act 1961, or to damage to roads caused as a result of general road usage.</i></p>		<p>Power lines in the Murmgamba Valley were decommissioned during the commencement of construction works for Stage 2of the Moolarben Coal Project.</p> <p>No other public infrastructure has required to be repaired or relocated as a result of development of the Stage 1 Moolarben Coal Project.</p>	Compliant
	OPERATION OF PLANT AND EQUIPMENT			
12	<p>The Proponent shall ensure that all plant and equipment used at the site, or in connection with the project, is:</p> <p>(a) maintained in a proper and efficient condition; and</p> <p>(b) operated in a proper and efficient manner</p>		<p>All plant and equipment used at the site in connection with the project, is maintained in the on-site workshops in proper and efficient condition; and is operated on the mine site in a proper and efficient manner.</p>	Compliant Ongoing
	STAGED SUBMISSION OF STRATEGIES, PLANS OR PROGRAMS			
13	<p>With the approval of the Secretary, the Proponent may:</p> <p>a) submit any strategy, plan or program required by this approval on a progressive basis; and</p> <p>(b) combine any strategy, plan, program, review, audit or report required by this approval with any similar strategy, plan, program, review, audit or report required under Project Approval 08_0135 for the Moolarben Coal Project Stage 2.</p>	<ul style="list-style-type: none"> • Letter to DP&E re Staging of Biodiversity Management Plan, 17 Jul 2015 • Letter from DP&E re Staging of Biodiversity Management Plan, 20 Jul 2015 • Aboriginal Cultural Heritage Management Plan • Air Quality Management Plan • Blast Management Plan, • Blast Fume Management Strategy • Environmental Management Strategy • Heritage Management Plan • Landscape Management Plan • Noise Management Plan • Waste Management Plan • Water Management Plan • Biodiversity Offset Management Plan 	<p>DP&E approved the Staging of the Biodiversity Management Plan, to progressively address the biodiversity offset strategy requirements in Schedule 3 condition 30.</p> <p>(a) All other strategies, plans or programs required to be prepared for the operation of the project have been developed and submitted to the DP&E in accordance with the Project Approval.</p> <p>(b) The strategies, plans or programs have been developed for both the Stage 1 and Stage 2 development in a single document, where practicable following approval of the Stage 2 project in January 2015.</p>	Compliant Ongoing

Independent Environmental Audit - December 2015

Moolarben Coal Project

Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	VOLUNTARY PLANNING AGREEMENT			
14	<p>Within 12 months of this approval, the Proponent shall enter into a planning agreement with Council in accordance with:</p> <p>(a) Division 6 of Part 4 of the EP&A Act; and</p> <p>(b) the terms of the Proponent's offer to the Minister on 4 September 2007, which includes the matters set out in Appendix 4.</p>	<ul style="list-style-type: none"> Project Approval 05_0117 Appendix 4 Voluntary Planning Agreement 	<p>The matters set out in Project Approval 05_0117 Appendix 4 are being paid in accordance with the Voluntary Planning Agreement:</p> <p>Coal product transport - \$1,000,000 in three equal instalments paid over a 3year period, following first loading and dispatch of coal produced from the open cut operations from the Project.</p> <p>Road Maintenance Contribution – Cope Road and Ulan Road - \$1,000,000 in three equal instalments over a 3year period, from commencement of project construction</p> <p>Road Maintenance Contribution – General - \$62,500 each year for a period of 20 years with the first instalment paid on the first anniversary of the first loading and dispatch of coal produced from the operations of the Project.</p> <p>Community Infrastructure Contribution - \$100,000 each year for of 10 years with the first instalment to be paid on the first anniversary of the first loading and dispatch of coal produced from the operations of the Project.</p>	Compliant
14			As no Stage 1 underground mining had occurred at the date of this audit (December 2015) the monetary contribution of one instalment of \$300,000 following first loading and dispatch of coal produced from the underground operations of the Project has not been triggered.	Not triggered
	SCHEDULE 3 ENVIRONMENTAL CONDITIONS - GENERAL			
	NOISE			
	Noise Criteria			
	Acquisition Upon Request			
1A	<p>Upon receiving a written request for acquisition from an owner of the land listed in Table 1A, the Applicant shall acquire the land in accordance with the procedures in conditions 10 and 11 of Schedule 4.</p> <p><i>Table 1A: Land subject to acquisition upon request</i></p> <p>Receiver ID - 32</p>		No written requests for acquisition were received between 2013 and 2015.	Not triggered

Independent Environmental Audit - December 2015

Moolarben Coal Project

Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance																																																	
	Transitional Acquisition and Mitigation Arrangements																																																				
1B	<p>Any receiver that had made a written request for acquisition or mitigation prior to the determination of Modification 3, on 30 January 2015 shall be granted the acquisition or mitigation options in accordance with the condition that applied at the date of that request.</p> <p><i>Note: Receivers 30, 63, 70, 75 and 31 were granted mitigation on request rights with the approval of Modification 9 in June 2014. A new Voluntary Land Acquisition and Mitigation Policy was gazetted on 19 December 2014, consequently the conditions have been updated to reflect the new policy, however transitional arrangements are provided for the owners of any privately owned land, if a written request for acquisition or mitigation had already been made, prior to the determination of Modification 3.</i></p>		Letters were sent to residents Moolarben Coal Operations Pty Ltd informing them of condition 1B and their rights was sent by MCC.	Compliant																																																	
1	<p>The Proponent shall ensure that the noise generated by the Moolarben mine complex does not exceed the noise criteria in Table 1 at any residence on privately-owned land or the other specified locations.</p> <p><i>Table 1: Noise criteria dB(A)</i></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2" style="width: 20%;">Land No.</th> <th style="width: 10%;">Day</th> <th style="width: 10%;">Evening</th> <th colspan="2" style="width: 20%;">Night</th> </tr> <tr> <th colspan="2">LAeq(15min)</th> <th colspan="2">LA1(1min)</th> </tr> </thead> <tbody> <tr> <td>30,63</td> <td>39</td> <td>39</td> <td>39</td> <td>45</td> </tr> <tr> <td>70</td> <td>37</td> <td>37</td> <td>37</td> <td>45</td> </tr> <tr> <td>75</td> <td>36</td> <td>36</td> <td>36</td> <td>45</td> </tr> <tr> <td>31</td> <td>36</td> <td>36</td> <td>36</td> <td>45</td> </tr> <tr> <td>All other privately owned residences</td> <td>35</td> <td>35</td> <td>35</td> <td>45</td> </tr> <tr> <td>Ulan Primary School</td> <td colspan="2">35 (internal) when in use</td> <td colspan="2">-</td> </tr> <tr> <td>Ulan Anglican Church Ulan Catholic Church</td> <td colspan="2">35 (internal) when in use</td> <td colspan="2">-</td> </tr> <tr> <td>Goulburn River National Park Munghorn Gap Nature Reserve</td> <td colspan="2">50</td> <td colspan="2">-</td> </tr> </tbody> </table> <p><i>Note: To interpret the land referred to in Table 1 see the applicable figures in Appendix 5.</i></p>	Land No.	Day	Evening	Night		LAeq(15min)		LA1(1min)		30,63	39	39	39	45	70	37	37	37	45	75	36	36	36	45	31	36	36	36	45	All other privately owned residences	35	35	35	45	Ulan Primary School	35 (internal) when in use		-		Ulan Anglican Church Ulan Catholic Church	35 (internal) when in use		-		Goulburn River National Park Munghorn Gap Nature Reserve	50		-		<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 3 2012-2013 AEMR section 3.13.2 2013-2014 AEMR Monthly Environmental Monitoring Report Month ending 31 December 2014 to 31 December 2015 	No exceedances of the noise criteria were recorded between January 2013 and December 2015.	Compliant
Land No.	Day		Evening	Night																																																	
	LAeq(15min)		LA1(1min)																																																		
30,63	39	39	39	45																																																	
70	37	37	37	45																																																	
75	36	36	36	45																																																	
31	36	36	36	45																																																	
All other privately owned residences	35	35	35	45																																																	
Ulan Primary School	35 (internal) when in use		-																																																		
Ulan Anglican Church Ulan Catholic Church	35 (internal) when in use		-																																																		
Goulburn River National Park Munghorn Gap Nature Reserve	50		-																																																		

Independent Environmental Audit - December 2015

Moolarben Coal Project

Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance																
	<p>Noise generated by the complex is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 6 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.</p> <p>However, these noise criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.</p>																			
	Land Acquisition Criteria																			
2	<p>If the noise generated by the Moolarben mine complex exceeds the criteria in Table 2A at any residence on privately-owned land, then upon receiving a written request for acquisition from an owner of the land listed in Table 2A, the Proponent shall acquire the land in accordance with the procedures in conditions 10 and 11 of Schedule 4.</p> <p><i>Table 2A: Acquisition criteria dB(A) $L_{Aeq}(15min)$</i></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Receiver ID</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> </tr> <tr> <td></td> <th colspan="3" style="text-align: center;">$(L_{Aeq}(15min))$</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">63</td> <td style="text-align: center;">43</td> <td style="text-align: center;">43</td> <td style="text-align: center;">42</td> </tr> <tr> <td style="text-align: center;">All other privately-owned residences</td> <td style="text-align: center;">40</td> <td style="text-align: center;">40</td> <td style="text-align: center;">40</td> </tr> </tbody> </table> <p><i>Note: To interpret the land referred to Table 2A, see the applicable figures in Appendix 5.</i></p>	Receiver ID	Day	Evening	Night		$(L_{Aeq}(15min))$			63	43	43	42	All other privately-owned residences	40	40	40	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 4 Compensation and Option Agreement – Whiticker, Sparkes & Holmore Lawyers, 7 Nov 2012 2012-2013 AEMR section 3.13.2 2013-2014 AEMR Monthly Environmental Monitoring Report Month ending 31 December 2014 to 31 December 2015 	<p>Properties 22, 23, 41a, 64, 49, 169, 170, 172 and 173 identified in Project Approval 05_0117 as having acquisition rights, were purchased by Moolarben Coal.</p> <p>Property 26 is now zoned industrial land and is no longer subject to the acquisition rights in accordance with condition 2.</p> <p>Moolarben Coal Operations received written request from Residence 20 (Williamson) for acquisition on 13 September 2010 and acquired the Residence 20 in February 2011.</p> <p>Moolarben Coal have a Compensation and Option Agreement in place for the Whiticker property. (No.63)</p> <p>No exceedances of the noise criteria at other privately owned residences were recorded.</p>	Compliant Ongoing
Receiver ID	Day	Evening	Night																	
	$(L_{Aeq}(15min))$																			
63	43	43	42																	
All other privately-owned residences	40	40	40																	
3	<p>If the noise generated by the Moolarben mine complex contributes to exceedances of the relevant criteria in Table 2 on more than 25% of any privately-owned land (and a dwelling could be built on that land under existing planning controls), the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 10-11 of Schedule 4.</p> <p><i>Table 2: Land acquisition criteria</i></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Day/Evening/Night $L_{Aeq(period)}$</th> <th style="text-align: center;">Receiver</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">55/50/45</td> <td style="text-align: center;">All privately owned land</td> </tr> </tbody> </table>	Day/Evening/Night $L_{Aeq(period)}$	Receiver	55/50/45	All privately owned land	<ul style="list-style-type: none"> 2012-2013 AEMR section 3.13.2 2013-2014 AEMR Monthly Environmental Monitoring Report Month ending 31 December 2014 to 31 December 2015 	<p>No exceedances of the noise criteria noted.</p>	Compliant Ongoing												
Day/Evening/Night $L_{Aeq(period)}$	Receiver																			
55/50/45	All privately owned land																			

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	<p><i>Note: Noise generated by the complex is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 6 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria.</i></p> <p><i>However, these noise criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.</i></p>																			
	Noise Mitigation Criteria																			
4	<p>If the noise generated by the Moolarben mine complex exceeds the criteria in Table 3A at any privately owned residence, then upon receiving a written request the Proponent shall implement additional noise mitigation measures (such as double-glazing, insulation and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible, and directed towards reducing the noise impacts of the project on the residence.</p> <p>If within 3 months of receiving this request from the owner, the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.</p> <p><i>Table 3A: Mitigation criteria dB(A) LAeq (15min)</i></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Receiver ID</th> <th style="text-align: center;">Day</th> <th style="text-align: center;">Evening</th> <th style="text-align: center;">Night</th> </tr> <tr> <td></td> <th colspan="3" style="text-align: center;">(L_{Aeq} (15min))</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">63</td> <td style="text-align: center;">40</td> <td style="text-align: center;">40</td> <td style="text-align: center;">39</td> </tr> <tr> <td style="text-align: center;">All other privately-owned residences</td> <td style="text-align: center;">37</td> <td style="text-align: center;">37</td> <td style="text-align: center;">37</td> </tr> </tbody> </table> <p><i>Note: To interpret the land referred to Table 3A, see the applicable figures in Appendix 5.</i></p>	Receiver ID	Day	Evening	Night		(L _{Aeq} (15min))			63	40	40	39	All other privately-owned residences	37	37	37	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 6 2012-2013 AEMR section 3.13.2 2013-2014 AEMR Monthly Environmental Monitoring Report Month ending 31 December 2014 to 31 December 2015 	<p>No exceedances of the noise criteria noted.</p> <p>No written requests in relation to mitigation measures were received by Moolarben Coal between January 2013 and December 2015.</p>	Not triggered
Receiver ID	Day	Evening	Night																	
	(L _{Aeq} (15min))																			
63	40	40	39																	
All other privately-owned residences	37	37	37																	

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance		
	Mitigation Upon Request					
5	<p style="color: #0070c0;">Upon receiving a written request from the owner of the residence on the land listed in Table 3, the Proponent shall implement additional noise mitigation measures (such as double-glazing, insulation and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible, and directed towards reducing the noise impacts of the complex on the residence.</p> <p style="color: #0070c0;">If within 3 months of receiving this request from the owner, the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.</p> <p style="color: #0070c0;">Table 3: Land subject to additional noise mitigation upon request</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center; color: #0070c0;">Receiver ID</td> </tr> <tr> <td style="text-align: center; color: #c00000;">30</td> </tr> </table> <p style="color: #0070c0;"><i>Note: To interpret the land referred to in Table 3 see the applicable figures in Appendix 5.</i></p>	Receiver ID	30	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 2 2012-2013 AEMR section 3.13.2 2013-2014 AEMR Monthly Environmental Monitoring Report Month ending 31 December 2014 to 31 December 2015 	<p>No exceedances of the noise criteria noted.</p> <p>No written requests in relation to mitigation measures were received by Moolarben Coal between January 2013 and December 2015.</p>	Not triggered
Receiver ID						
30						
	Operating Conditions					
6	<p style="color: #0070c0;">The Proponent shall:</p> <p style="color: #0070c0;">(a) implement best management practice to minimise the operational, road and rail noise of the project;</p> <p style="color: #0070c0;">(b) operate a comprehensive noise management system on site that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day to day planning of mining operations, and the implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this approval;</p> <p style="color: #0070c0;">(c) minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply (see Appendix 6);</p> <p style="color: #0070c0;">(d) only use locomotives and rolling stock that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL;</p> <p style="color: #0070c0;">(e) co-ordinate noise management with the noise management at Ulan and Wilpinjong mines to minimise cumulative noise impacts; and</p>	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 7 Noise Management Plan, May 2015 Letter from Pacific National re Use of Locomotives and Rolling Stock that meet ARTC Noise Limits. 	<p>The Noise Management Plan:</p> <p>(a) section 7 addresses implementation of best management practice to minimise the operational, road and rail noise of the project;</p> <p>(b) section 8 details the noise monitoring program that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day to day planning of mining operations, and section 8.3.4 addresses the implementation of proactive and reactive noise mitigation measures to ensure compliance with this approval;</p> <p>(c) section 8.2.4 addresses minimising noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply;</p> <p>(d) a letter from Pacific National stating it would only use locomotives and rolling stock that meet ARTC noise limits only use locomotives and rolling stock that are approved to operate on the NSW rail network in EPL 6142;</p>	Compliant Ongoing		

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	(f) carry out regular monitoring to determine whether the project is complying with the relevant conditions of this approval, to the satisfaction of the Secretary.		(e) Moolarben Coal has implemented a data sharing protocol with Ulan Coal Mine and Wilpinjong Mine to minimise cumulative noise impacts; and (f) section 8 presents the noise monitoring program implemented to determine compliance of the project with the relevant conditions of this approval.	
	Noise Management Plan			
7	<p>The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with the EPA and be submitted to the Secretary for approval by 31 March 2015;</p> <p>(b) describe the measures that would be implemented to ensure compliance with the noise criteria and operating conditions in this approval;</p> <p>(c) describe the proposed noise management system in detail;</p> <p>(d) include a monitoring program that:</p> <ul style="list-style-type: none"> • uses attended noise monitoring to evaluate compliance of the project against the noise criteria in this approval; • includes a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time (so the real-time noise monitoring program can be used as a better indicator of compliance with the noise criteria in this approval and trigger for further attended monitoring); • evaluates and reports on: <ul style="list-style-type: none"> - the effectiveness of the noise management system; and - compliance against the noise operating conditions; and • defines what constitutes a noise incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents. 	<ul style="list-style-type: none"> • Noise Management Plan, March 2010 • Letter from DP&I re Approval of Noise Management Plan, Jun 2010 • Noise Management Plan, May 2015 • Letter from DP&E re Approval of the Noise Management Plan Version 3, 22 Jun 2015 	<p>The Noise Management Plan for the Moolarben Coal Project Stage 1 was prepared to satisfy Project Approval 05_0117 Schedule 3 condition 7 in March 2010. The Noise Management Plan was revised in June 2013 to include OC2 and OC3, and further revised in May 2015 to include management and mitigation measures for both Stage 1 and Stage 2:</p> <p>(a) the Noise Management Plan was prepared and submitted to the Secretary for approval in March 2015. Consultation with the EPA is not reported in the document. (It is noted that EPA has communicated that it does not review or comment on Management Plans);</p> <p>(b) section 7 describes to be implemented to ensure compliance with the noise criteria and operating conditions;</p> <p>(c) section 7 describes the noise management system;</p> <p>(d) section 8.2.1 presents the monitoring program that includes:</p> <ul style="list-style-type: none"> • attended noise monitoring to evaluate compliance of the project against the noise criteria in this approval; • a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time; • section 8 and 11 addresses evaluation and reporting on: the effectiveness of the noise management system; and - compliance against the noise operating conditions; and • section 11.1 defines what constitutes a noise incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents. 	Compliant

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance																
	BLASTING																			
	Blasting Criteria																			
8	<p>The Proponent shall ensure that the blasting on the Moolarben mine complex does not cause exceedances of the criteria in Table 4.</p> <p>Table 4: Blasting criteria</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Location</th> <th style="width: 25%;">Airblast overpressure (dB_(Lin Peak))</th> <th style="width: 25%;">Ground vibration (mm/s)</th> <th style="width: 25%;">Allowable exceedance</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">120</td> <td style="text-align: center;">10</td> <td style="text-align: center;">0%</td> </tr> <tr> <td>Residence on privately owned land, churches and schools</td> <td style="text-align: center;">115</td> <td style="text-align: center;">5</td> <td style="text-align: center;">5% of the total number of blasts over a period of 12 months</td> </tr> <tr> <td>All public infrastructure</td> <td></td> <td style="text-align: center;">50*</td> <td style="text-align: center;">0%</td> </tr> </tbody> </table> <p>* (or a limit determined by the structural design methodology in AS 2187.2-2006, or its latest version, or other alternative limit for public infrastructure, to the satisfaction of the Secretary.</p> <p>However, these criteria do not apply if the Proponent has a written agreement with the relevant owner, and has advised the Department in writing of the terms of this agreement.</p>	Location	Airblast overpressure (dB _(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance		120	10	0%	Residence on privately owned land, churches and schools	115	5	5% of the total number of blasts over a period of 12 months	All public infrastructure		50*	0%	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 9 2012-2013 AEMR section 3.13.2 2013-2014 AEMR Monthly Environmental Monitoring Report Month ending 31 December 2014 to 31 December 2015 	<p>Every blast conducted at the Moolarben Coal mine is monitored to assess compliance with the criteria in Project Approval 05_0117 Schedule 3 condition 8 criteria.</p> <p>The blasting criteria were met between January 2013 and December 2015 at all sites monitored. Two overpressure reading greater than 115dB were recorded in 2013-2014:</p> <ul style="list-style-type: none"> BM1 - 116.6dB_{Lin} on 6 December 2013; BM5 - 120.0dB_{Lin} on 11 March 2014. <p>Two (2) overpressure readings greater than 115dB were recorded in 2015:</p> <ul style="list-style-type: none"> BM1 - 115.9dB_{Lin} on 30 April 2015; BM5 - 115.4dB_{Lin} on 29 September 2015 <p>(Note: Two (2) other overpressure readings of 115dB were recorded in June 2015, that were wind related).</p>	Compliant
Location	Airblast overpressure (dB _(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance																	
	120	10	0%																	
Residence on privately owned land, churches and schools	115	5	5% of the total number of blasts over a period of 12 months																	
All public infrastructure		50*	0%																	
	Blasting Hours																			
9	<p>The Proponent shall only carry out blasting on the site between 9am and 5pm Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary.</p>	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 10 Blast Management Plan, section 3 2012-2013 AEMR section 3.13.2 2013-2014 AEMR Monthly Environmental Monitoring Report Month ending 31 December 2014 to 31 December 2015 	<p>Review of blast records confirmed that blasting has been undertaken in accordance with the condition requirements.</p> <p>Blasting has only occurred at the Moolarben Coal Project between 9:00am and 5:00pm on Mondays to Saturdays. No blasting occurs on Sundays or Public Holidays.</p>	Compliant Ongoing																

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	Blasting Frequency			
10	<p>The Proponent may carry out a maximum of:</p> <p>(a) 2 blasts a day; and</p> <p>(b) 9 blasts a week, averaged over a calendar year, at the Moolarben mine complex.</p> <p>This condition does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, blasts misfires or blasts required to ensure the safety of the mine or its workers.</p> <p><i>Note: For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.</i></p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 11 • Blast Management Plan, section 3 • 2012-2013 AEMR section 3.13.2 • 2013-2014 AEMR • Monthly Environmental Monitoring Report Month ending 31 December 2014 to 31 December 2015 	<p>Review of blast records confirmed that blasting has been undertaken in accordance with the condition requirements.</p> <p>Blasting at the Moolarben Coal Mine has complied with the maximum events in Project Approval 05-0177 Schedule 3 condition 10:</p> <p>(a) Number of blasts did not exceed 2 per day;</p> <p>(b) Number of blasts averaged less than 9 events per week averaged over a calendar year</p>	Compliant
	Property Inspections			
11	<p>If the Proponent receives a written request from the owner of any privately-owned land within 2 kilometres of any approved open cut mining pit on site for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection updated, then within 2 months of receiving this request the Proponent shall:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to:</p> <ul style="list-style-type: none"> • establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and • identify measures that should be implemented to minimise the potential blasting impacts of the project on these buildings and/or structures; and <p>(b) give the landowner a copy of the new or updated property inspection report.</p> <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Proponent or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 12 • Blast Management Plan, May 2015 	<p>No written requests were received by Moolarben Coal from the owner of any privately-owned land within 2 kilometres of an open cut mining pit on site for a property inspection to establish the baseline condition of any buildings and/or structures on their land, between 2013 and 2015.</p> <p>Blast Management Plan, section 6.2.2, May 2015, details the process to be implemented for property inspections.</p>	Not triggered
	Property Investigations			
12	<p>If the owner of any privately-owned land claims that buildings and/or structures on his/her land have been damaged as a result of blasting on the site, then within 2 months of receiving this claim the Proponent shall:</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 13 • Blast Management Plan, May 2015 	<p>Blast Management Plan, section 6.2.2, May 2015, details the process to be implemented for property investigations.</p> <p>No written requests were received by Moolarben Coal between January 2013 and December 2015.</p>	Not triggered

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	<p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and</p> <p>(b) give the landowner a copy of the property investigation report.</p> <p>If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damage to the satisfaction of the Secretary. If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Proponent or the landowner disagrees with the findings of t</p>			
	Operating Conditions			
13	<p>The Proponent shall:</p> <p>(a) implement best practice blasting management to: • protect the safety of people and livestock in the surrounding area; • protect public or private infrastructure/property in the surrounding area from any damage; and • minimise the dust and fume emissions of any blasting;</p> <p>(b) operate a suitable system to enable the public to get up-to-date information on the proposed blasting Schedule on site; and</p> <p>(c) co-ordinate the timing of blasting on site with the timing of blasting at the Ulan and Wilpinjong mines to minimise cumulative blasting impacts, to the satisfaction of the Secretary</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 14 • Blast Management Plan, section 6, May 2015 	<p>The Blast Management Plan section 6 addresses operating conditions:</p> <p>(a) section 6.1 outlines implementation of best practice blasting management to protect the safety of people and livestock in the surrounding area;</p> <ul style="list-style-type: none"> • section 6.3 addresses protection of public or private infrastructure/property in the surrounding area from any damage; and • section 6.5 and 6.6 addresses minimising dust and fume emissions from any blasting. Fume generation is considered and Moolarben Coal operate an environmental forecasting model as part of the blast management system; <p>(b) section 6.4 outlines the system to enable the public to get up-to-date information on the proposed blasting Schedule on site. The public are notified through newspaper advertisements, direct contact with residents, signs and the Moolarben Coal website; and</p> <p>(c) section 6.2.1 addresses co-ordination of timing of blasting on site with the timing of blasting at the Ulan and Wilpinjong mines to minimise cumulative blasting impacts.</p>	Compliant Ongoing
14	<p>The Proponent shall not undertake blasting on site within 500 metres of:</p> <p>(a) any public road;</p> <p>(b) the Gulgong to Sandy Hollow Railway Line;</p> <p>(c) the Wollar-Wellington 330kV Transmission Line; or</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 15 • Blast Management Plan, section 6.3, May 2015 • 	<p>The Blast Management Plan section 6.3 describes management procedures in relation to blasting on site within 500 metres of:</p> <p>(a) A Road Closure Procedure has been developed to the satisfaction of Mid-Western Regional Council;</p>	Compliant Ongoing

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	(d) any land outside the site not owned by the Proponent, unless the Proponent has: <ul style="list-style-type: none"> • demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the infrastructure or land without compromising the safety of people or livestock or damaging the infrastructure and/or other buildings and structures; and • updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the infrastructure or land; or • a written agreement with the relevant infrastructure owner or landowner to allow blasting to be carried out closer to the infrastructure or land, and the Proponent has advised the Department in writing of the terms of this agreement. 		(b) Moolarben Coal has a written agreement with ARTC to undertake blasting within 500m of the Gulgong to Sandy Hollow Railway Line; (c) Moolarben Coal has a written agreement with Transgrid to undertake blasting within 500m of the Wollar-Wellington 330kV Transmission Line; (d) section 6.3 of the updated Blast Management Plan includes specific measures to be implemented while blasting is being carried out within 500 metres of the infrastructure or any land outside the site not owned by the Moolarben Coal.	
	Blast Management Plan			
15	The Proponent shall prepare and implement a Blast Management Plan for the project prior to undertaking any blasting on site to the satisfaction of the Secretary. This plan must: <ul style="list-style-type: none"> (a) be prepared in consultation with the EPA and be submitted to the Secretary for approval by 31 March 2015; (b) describe the measures that would be implemented to ensure compliance with the blast criteria and operating conditions of this approval; (c) propose and justify any alternative ground vibration limits for public infrastructure in the vicinity of the site (if relevant); and (d) include a monitoring program for evaluating compliance with the blasting criteria and operating conditions of this approval. 	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 16 • Blast Management Plan Version 1, Mar 2010 • Blast Management Plan Version 4 May 2015 • Letter from DP&E re Approval of Blast Management Plan Version 4, 22 Jun 2015 	The Blast Management Plan was prepared by MCO with input from SLR Consulting Australia Pty Ltd. Version 1 was prepared in March 2010 for Stage 1 of the Moolarben Coal Project and submitted to the DP&I. The Blast Management Plan was revised in Version 2 June 2013 to include OC1 and OC2, Version 3 November 2014 to include OC1 and OC2 Extension MOD 9, and Version 4 May 2015 to include management and mitigation measures for both Stage 1 and Stage 2 of the Project. <ul style="list-style-type: none"> (a) The Blast Management Plan Version 4 was prepared and be submitted to the Secretary for approval in March 2015. The Blast Management Plan was approved on 22 June 2015. Consultation with the EPA was recorded in the Blast Management Plan; (b) section 6 describes the blast management and control measures implemented to ensure compliance with the blast criteria and operating conditions of this approval; (c) section 6.3 addresses any alternative ground vibration limits for public infrastructure in the vicinity of the site (if relevant); and (d) section 7 describes the blast monitoring program for evaluating compliance with the blasting criteria and operating conditions of this approval. 	Compliant

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance																							
	AIR QUALITY																										
	Odour																										
16	The Proponent shall ensure that no offensive odours, as defined under the POEO Act, are emitted from the site.	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 17 <i>Protection of the Environment Operations Act</i> 1997, Air Quality Management Plan, Version 3, section 6.2, Jul 2015 Moolarben Coal Complaints Register, Jan 2013 to Dec 2015 	<p>Three complaints were received by Moolarben Coal in relation to odour between 2013 and 2015. Each complaint was investigated and no odour sources from the Moolarben Coal activities were identified or observed.</p> <p>No offensive odours were therefore identified or odour emitted from the Moolarben Coal site between 2013 and 2015.</p>	Compliant Ongoing																							
	Air Quality Criteria																										
17	<p>The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the Moolarben mine complex do not cause exceedances of the criteria listed in Tables 5, 6 and 7 at any residence on privately owned land.</p> <p><i>Table 5: Long term impact assessment criteria for particulate matter</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>90 µg/m³</td> </tr> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>Annual</td> <td>30 µg/m³</td> </tr> </tbody> </table> <p><i>Table 6: Short term impact assessment criterion for particulate matter</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>24hour</td> <td>50 µg/m³</td> </tr> </tbody> </table> <p><i>Table 7: Long term impact assessment criterion for deposited dust</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Max increase in dep dust level</th> <th>Max total dep dust level</th> </tr> </thead> <tbody> <tr> <td>Deposited dust</td> <td>Annual</td> <td>2g/m/mth</td> <td>4g/m/mth</td> </tr> </tbody> </table> <p><i>Notes to Tables 5-7: a Cumulative (i.e. incremental increase in concentrations due to the complex plus background concentrations due to all other sources); b Incremental impact (i.e. incremental increase in concentrations due to the complex on its own); c Deposited dust is to be assessed as</i></p>	Pollutant	Averaging Period	Criterion	Total suspended particulate (TSP) matter	Annual	90 µg/m ³	Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m ³	Pollutant	Averaging Period	Criterion	Particulate matter < 10 µm (PM ₁₀)	24hour	50 µg/m ³	Pollutant	Averaging Period	Max increase in dep dust level	Max total dep dust level	Deposited dust	Annual	2g/m/mth	4g/m/mth	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 18 Air Quality Management Plan, Version 3, section 6.1, Jul 2015 Annual Environment Management Report, 2012-2013. Annual Environment Management Report, 2013-2014. Monthly Environmental Monitoring Reports, 2014-2015 	<p>The air quality criteria for the project are identified in the Air Quality Management Plan, Version 3, section 6.1. Moolarben Coal operates an air quality monitoring network, as per Figure 7 of the Air Quality Management Plan. TSP concentrations are not measured directly but are inferred from PM₁₀ concentrations.</p> <p>The air quality review of data between 2013 and 2015 indicated:</p> <ul style="list-style-type: none"> No exceedances of the annual average TSP or PM₁₀ criteria were recorded (with TSP estimated from PM₁₀). There were 18 days between January 2013 and December 2015 when PM₁₀ concentrations exceeded 50 µg/m³. On 10 of these days the wind conditions were most likely due to multiple sources including either a regional air quality event (due to high levels at multiple monitors), smoke haze, or dust from traffic on an unsealed section of Ulan Road. Emissions from Moolarben Coal activities would have contributed to some of the measured PM₁₀ results but these emissions did not appear to be the primary cause of the increased values. No exceedances of the annual average dust deposition criteria were recorded. 	Compliant
Pollutant	Averaging Period	Criterion																									
Total suspended particulate (TSP) matter	Annual	90 µg/m ³																									
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	<i>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; and d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents, illegal activities or any other activity agreed by the Secretary</i>			
	Mine-owned Land			
18	<p>The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the Moolarben mine complex do not cause exceedances of the criteria listed in Tables 8, 9 and 10 at any occupied residence on mine-owned land (including land owned by another mine) unless:</p> <p>(a) the tenant and landowner has been notified of any health risks associated with such exceedances in accordance with the notification requirements under Schedule 4 of this approval;</p> <p>(b) the tenant of any land owned by the Proponent can terminate their tenancy agreement without penalty at any time, subject to giving reasonable notice, and the Proponent uses its best endeavours to provide assistance with relocation and sourcing of alternative accommodation;</p> <p>(c) air mitigation measures such as air filters, a first flush roof water drainage system and/or air conditioning) are installed at the residence, if requested by the tenant and landowner (if the residence is owned by another mine); (d) particulate matter air quality monitoring is regularly undertaken to inform the tenant and landowner of the actual particulate emissions; and</p> <p>(e) data from this monitoring is presented to the tenant in an appropriate format, for a medical practitioner to assist the tenant in making informed decisions on the health risks associated with occupying the property, to the satisfaction of the Secretary.</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 19 • Air Quality Management Plan, Version 3, section 6.1.1, Jul 2015 • Annual Environment Management Report, 2012-2013. • Annual Environment Management Report, 2013-2014. • Monthly Environmental Monitoring Reports, 2014-2015 	<p>Data from the air quality monitoring network monitoring locations representative of nearest mine-owned and occupied land was reviewed during this audit to check compliance with the criteria listed in Schedule 3 condition 17 - Tables 8, 9 and 10.</p> <p>The review of air quality data at occupied residences on mine-owned land (including land owned by another mine) indicated:</p> <ul style="list-style-type: none"> - No exceedances of the annual average TSP or PM₁₀ (cumulative) criteria were recorded (with TSP estimated from PM₁₀). - No exceedances of the 24-hour average PM₁₀ criteria. - No exceedances of the annual average dust deposition criteria were recorded. 	Compliant Ongoing
	Air Quality Acquisition Criteria			
19	<p>If particulate matter emissions generated by the Moolarben mine complex exceed the incremental criteria, or contribute to an exceedance of the relevant cumulative criteria, in Tables 8, 9 and 10 at any residence on privately-owned land or on more than 25% of any privately-owned land (and a dwelling could be built on that land under existing planning controls), then upon receiving a written request for acquisition from the</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 20 • Air Quality Management Plan, Version 3, section 4, Jul 2015 	<p>The air quality acquisition criteria are provided in Air Quality Management Plan, Version 3, section 4. No requests for acquisition under this condition were received by Moolarben Coal between 2013 and 2015.</p>	Not triggered

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	<p>landowner, the Proponent shall acquire the land in accordance with Schedule 4 conditions 10-11.</p> <p><i>Table 5: Long term impact assessment criteria for particulate matter</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>90 µg/m³</td> </tr> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>Annual</td> <td>30 µg/m³</td> </tr> </tbody> </table> <p><i>Table 6: Short term impact assessment criterion for particulate matter</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>24 hour</td> <td>50 µg/m³</td> </tr> </tbody> </table> <p><i>Table 7: Long term impact assessment criterion for deposited dust</i></p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Max increase in deposited dust level</th> <th>Max total deposited dust level</th> </tr> </thead> <tbody> <tr> <td>Deposited dust</td> <td>Annual</td> <td>2g/m/mth</td> <td>4g/m/mth</td> </tr> </tbody> </table> <p><i>Notes to Tables 5-7: a Cumulative (i.e. incremental increase in concentrations due to the complex plus background concentrations due to all other sources); b Incremental impact (i.e. incremental increase in concentrations due to the complex 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; and d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents, illegal activities or any other activity agreed by the Secretary</i></p>	Pollutant	Averaging Period	Criterion	Total suspended particulate (TSP) matter	Annual	90 µg/m ³	Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m ³	Pollutant	Averaging Period	Criterion	Particulate matter < 10 µm (PM ₁₀)	24 hour	50 µg/m ³	Pollutant	Averaging Period	Max increase in deposited dust level	Max total deposited dust level	Deposited dust	Annual	2g/m/mth	4g/m/mth			
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	Operating Conditions																										
20	<p>The Proponent shall:</p> <p>(a) implement best management practice to minimise the off-site odour, fume and dust emissions of the project;</p> <p>(b) implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site;</p>	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 21 Air Quality Management Plan, Version 3, section 6, Jul 2015 	<p>(a) site inspection and interviews with site personnel was carried out to assess compliance. Emission-generating activities of the mining operation were assessed for compliance with (a) for each activity:</p> <ul style="list-style-type: none"> - Scrapers used for topsoil removal to reduce dust generation. Roads are designated, roads are watered. 	Compliant Ongoing																							

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	<p>(c) minimise any visible off-site air pollution generated by the project;</p> <p>(d) minimise the surface disturbance of the site;</p> <p>(e) operate a comprehensive air quality management system that uses a combination of predictive meteorological forecasting and real-time air quality monitoring data to guide the day to day planning of mining operations and the implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions of this approval;</p> <p>(f) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see Note d under Table 9); and</p> <p>(g) co-ordinate the air quality management on site with the air quality management at the Ulan and Wilpinjong mines to minimise cumulative air quality impacts, to the satisfaction of the Secretary.</p>		<ul style="list-style-type: none"> - Water injection and curtains are used on drilling equipment to control dust generation. Equipment is shutdown if not operating correctly. - Procedures and checklists used prior to blasting to reduce dust generation. Water used on surface of shot areas to reduce dust. - When excess dust is observed loading trucks the procedures include minimising drop height, reducing swing rates, slowing production. - Haulage truck operators encouraged to radio directly to the water carts. Fill points have been appropriately positioned around haul routes. - Dust curtains and sprays employed inside hopper. Enclosure of hopper on 3 sides and roof. Transfer points are covered. - Dumping to emplacement areas high or low, depending on the conditions. - Dozers can be moved to alternative dumps if required (e.g. adverse weather conditions). - Pre-strip area minimised to reduce wind erosion. - Toolbox talks include discussion of air quality and minimising dust. <p>(b) Haul route distances are minimised to reduce fuel consumption.</p> <p>(c) A Trigger Action Response Plan (for dust management) is used. Operations are managed to reduce dust impacts, such as modifying activities during high winds to reduce dust dispersion and visual dust. (No off-site air pollution was observed during the site inspection).</p> <p>(d) From the visual inspection the pre-strip and dump areas were limited to the minimum practicable sizes. Surface disturbance was commensurate with the currently observed level of mining activity.</p> <p>(e) Personnel receive a daily forecast of expected dust generating conditions and dust dispersion contribution from the site. The forecasts (proactive) are derived from meteorological data available from the Sentinex system to provide reactive elements and modelling.</p>	

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			<p>(f) Forecasts and observations of meteorological conditions are actively used. Operations are modified in response to adverse conditions.</p> <p>(g) Coordination with Ulan and Wilpinjong mines was observed. Minutes of "Joint Mines" consultation group were viewed. Air quality monitoring data is shared via the Sentinex system.</p>	
	Air Quality Management Plan			
20A	<p>The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with the EPA and be submitted to the Secretary for approval by 31 March 2015;</p> <p>(b) describe the measures that would be implemented to ensure compliance with the relevant air quality criteria and operating conditions of this approval;</p> <p>(c) describe the air quality management system;</p> <p>(d) include an air quality monitoring program that:</p> <ul style="list-style-type: none"> • uses a combination of real-time and supplementary monitors to evaluate the performance of the project against the air quality criteria in this approval; • adequately supports the air quality management system; • evaluates and reports on the: <ul style="list-style-type: none"> - the effectiveness of the air quality management system; and - compliance against the air quality operating conditions; • defines what constitutes an air quality incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents. 	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 22 • Air Quality Management Plan, 1 March 2010 • Letter from DoP re Approval of Air Quality Management Plan, 12 March 2010 • Air Quality Management Plan, July 2015 • Letter from DP&E re Approval of the Air Quality Management Plan version 3, 31 Jul 2015 	<p>The Air Quality Management Plan was prepared to satisfy Project Approval 05_0117 Schedule 3 condition 20A on 1 March 2010 and submitted to the DP&I for approval. The Air Quality Management Plan was revised in June 2013 to include OC2 and OC3. The Air Quality Management Plan was further revised to satisfy Project Approval 05_0117 Schedule 3 condition 22 in July 2015 to include management and mitigation measures for both Stage 1 and Stage 2 of the project:</p> <p>(a) The Air Quality Management Plan was submitted to the Secretary in August 2015 for approval. Consultation with the EPA occurred but was not recorded in the Air Quality Management Plan;</p> <p>(b) section 6 describes measures to be implemented to ensure compliance with the relevant air quality criteria and operating conditions:</p> <p>(c) section 6 describes the air quality management;</p> <p>(d) section 7 presents an air quality monitoring:</p> <ul style="list-style-type: none"> • section 7.1.2 describes the use real-time and HVAS monitors to evaluate the performance against the air quality criteria; • section 7.1 describes support of the air quality management system; • section 8 provides the Compliance Protocol to evaluate and report on the effectiveness of the air quality management system; and compliance against the air quality operating conditions; • section 11.1 defines what constitutes an air quality incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents. 	Compliant

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	METEOROLOGICAL MONITORING			
20B	For the life of the project, the Proponent shall ensure that there is a meteorological station in the vicinity of the site that: <ul style="list-style-type: none"> (a) complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline; and (b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the NSW Industrial Noise Policy, unless a suitable alternative is approved by the Secretary following consultation with the EPA 	<ul style="list-style-type: none"> • Air Quality Management Plan, Version 3, section 7.1.4, Jul 2015 • AS-2923 • NSW Industrial Noise Policy • Approved Methods for Sampling of Air Pollutants in New South Wales Guideline, DECC • EPL 12932 condition M4.2 	<p>There were three weather stations operating on the Moolarben site (WS01, WS02 and WS03) during 2015. The meteorological stations operated by Moolarben Coal provide data for use by the project:</p> <ul style="list-style-type: none"> • Weather station (WS01) located at the mine site administration office • WS02 located at the Coal Handling and Preparation Plant; and • WS03 located on a property on Ulan Road. WS03 is the main weather station linked into the real-time monitoring system for reporting purposes, with WS01 used to supplement weather data as required. <p>WS01 and WS03 are linked to the real-time monitoring system to provide real time weather data. The WS03 weather station was inspected during the audit. Minespex undertook a review of the siting of the monitoring units against the guidelines contained in the relevant Australian Standards referenced by the EPA Approved Methods publication in September 2010 and concluded that the siting conformed with AS2923. Data from the weather station is available as 15-minute continuous recording. Sigma-theta data available to estimate temperature lapse rate is also available from the weather station operated by the adjacent Wilpinjong Coal Mine from a 60m tower.</p> <p>The weather stations measure the parameters required by EPL 12932 condition M4.2 for the site in accordance with the approved methods.</p>	Compliant
	ULAN PUBLIC SCHOOL			
20C	The Proponent shall consult with DEC and, if requested: <ul style="list-style-type: none"> (a) implement agreed reasonable and feasible measures to ameliorate potential noise and/or dust impacts to Ulan Public School; or (b) on a reasonable basis relating to the adverse effect of noise and/or dust from the project, contribute to or meet reasonable costs toward relocating the school. 	<ul style="list-style-type: none"> • Letter to Notify Ulan Public School re Rights under this Approval for Noise Mitigation, Dust, and Property Inspections, Feb 2015 • Air Quality Management Plan, Version 3, section 6.1.1, Jul 2015 Blast Management Plan, section 6.2, May 2015 	<p>The Ulan Public School located on Cope Road Ulan to the southeast of the Moolarben Coal operations was notified of the right to noise mitigation, dust, and property inspection under Schedule 4 of this approval.</p> <ul style="list-style-type: none"> (a) Moolarben Coal have not had a request from the Ulan Public School for any noise or dust mitigation measures to be provided; and (b) Not triggered 	Compliant Ongoing
21 - 25	(deleted)			

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	SUBSIDENCE			
	Subsidence – Natural Features			
26	<p>The Proponent shall:</p> <p>(a) ensure that the Drip, Goulburn River Gorge and bed of the Goulburn River (see Appendix 7) remain outside the zone of recorded subsidence damage for longwall mining in NSW;</p> <p>(b) minimise subsidence damage to Cliff Line 3 (see Appendix 7); and</p> <p>(c) reduce the likelihood of subsidence damage to: • Aboriginal sites 264, 282, 283, 286, 287 (see Appendix 7) to low; and • Aboriginal site 280 (see Appendix 7) to moderate.</p> <p><i>Note: The mine layout and design will be reviewed during the assessment of each subsidence management plan (see below), which will be informed by both the end-of panel reports (see condition 26 below) and each independent environmental audit (see condition 10 of Schedule 5). Consequently, the final mine plan may differ in minor respects from the mine plan shown in Appendix 7. However, the revised mine plan would need to comply with the performance criteria specified in this condition.</i></p>		Underground mining had not commenced at the Moolarben Coal Project at the date of this audit (i.e. December 2015).	Not triggered
	Subsidence Management Plan			
27	<p>The Proponent shall prepare and implement a Subsidence Management Plan (SMP) for the project to the satisfaction of the Director-General of DRE. This plan must: (a) be prepared in accordance with the latest version (or subsequent replacement) of the: • New Approval Process for Management of Coal Mining Subsidence - Policy; and • Guideline for Applications for Subsidence Management Approvals; (b) be approved prior to the carrying out any underground mining operations that could cause subsidence; (c) include a detailed program to monitor: • the height of fracturing above the goaf of the longwall panels; • surface subsidence above the longwall panels, including all near and far field components of subsidence; • the impact of surface subsidence on surface features, including flora and fauna, threatened species, and any surface water quality and/or flows; and • the effectiveness of any subsidence mitigation measures; and (d) a program to validate the subsidence prediction methodology for the project, and calibrate it to sit specific conditions.</p>		<p>Underground mining had not commenced at the Moolarben Coal Project at the date of this audit (December 2015).</p> <p>An Extraction Plan and associated management plans will be prepared for all second workings on site to be approved by the Secretary before the commencement of any of the second workings covered by the plan.</p>	Not triggered

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	End-of-Panel Report			
28	Prior to completion of each longwall panel, the Proponent shall: (a) prepare an end-of-panel report analysing the subsidence, surface water, and groundwater impacts of the panel, and the cumulative impacts of this panel combined with any other longwall panels; (b) commission suitably qualified subsidence and groundwater experts whose appointment has been approved by the Secretary to review the end-of-panel report, and if necessary recommend changes to the monitoring programs and/or mine plan for subsequent panels; and (c) submit a copy of the end-of-panel report and expert review to the Department, DRE and any other relevant agencies.		Underground mining of UG1 had not commenced at the Moolarben Coal Project at the date of this audit, so no End of Panel Reports had been prepared.	Not triggered
	WATER			
	Water Supply			
29	<p>The Proponent shall ensure that:</p> <p>(a) it has sufficient water for all stages of the project, and if necessary, adjust the scale of operations on site to match its available water supply; and</p> <p>(b) any water supply constraints do not compromise any aspect of the environmental performance of the mine.</p> <p><i>Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Proponent is required to obtain the necessary water licences for the project</i></p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 25 • Water Sharing Agreement between Moolarben Coal and Ulan Coal Mines, Sparkes & Holmore Lawyers, 10 Aug 2009 • Water Management Plan, Version 1, 31 Jul 2015 • Site Water Balance, Version 1, Jul 2015 	<p>Regional Water Supply and Monitoring Investigation undertaken and submitted to DPI in 2009. The Site Water Balance prepared by WRM Water and Environment and Dundon Consulting in July 2015 for Stage 1 and Stage 2 of the project describes sources and security of water supply, and addresses water demands, water use and management on site including details of water sharing with Ulan Coal Project.</p> <p>A Water Sharing Agreement with Ulan Coal provides for 1,000 ML/year of surplus mine water from the Ulan Mine Complex, to be obtained via a dedicated pipeline to the Moolarben Coal CHPP site dam.</p> <p>Water licenses for mine dewatering and groundwater extraction are current.</p>	Compliant Ongoing
	Compensatory Water Supply			
30	<p>The Proponent shall provide a compensatory water supply to any landowner of privately owned land whose water supply is adversely and directly impacted (other than an impact that is negligible) as a result of the project, in consultation with NOW, and to the satisfaction of the Secretary.</p> <p>The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributed to the project. Equivalent water supply should be provided (at least on an interim basis) within 24 hours of the loss being identified.</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 26 	<p>Water level data reported in AEMR's and monitoring updates available on the Moolarben Coal website indicate stable water levels across the monitoring network during Stage 1 development and does not indicate an impact to private water supply bores.</p> <p>No compensatory water supply to any landowner of privately owned land has been required between 2013 and 2015.</p>	Not triggered

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	<p>If the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.</p> <p>If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alternative compensation to the satisfaction of the Secretary.</p>											
	Water Pollution											
31	Unless an EPL authorises otherwise, the Proponent shall comply with section 120 of the POEO Act.	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 27 • <i>Protection of the Environment Operations Act 1997</i>, section 120 	No licensed discharges occurred since the previous audit in 2013 (Umwelt April 2013).	Noted								
	Water Management Performance Measures											
32	<p>The Proponent shall comply with the performance measures in Table 11 to the satisfaction of the Secretary.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #4F7942; color: white;">Feature</th> <th style="background-color: #4F7942; color: white;">Performance Measure</th> </tr> </thead> <tbody> <tr> <td>Water Management - General</td> <td> <ul style="list-style-type: none"> • Minimise cumulative water impacts with the other mines in the region • Maximise water sharing with the other mines in the region • Minimise the use of clean water on site </td> </tr> <tr> <td>The Drip</td> <td style="text-align: center; color: red;">Nil</td> </tr> <tr> <td>Construction and operation of linear infrastructure</td> <td> <ul style="list-style-type: none"> • Design, install and maintain erosion and sediment controls generally in accordance with the series <i>Managing Urban Stormwater: Soils and Construction</i> including Volume 1, Volume 2A – Installation of Services and Volume 2C – Unsealed Roads • Design, install and maintain the infrastructure within 40m of watercourses generally in accordance with the <i>Guidelines for Controlled Activities on Waterfront Land (DPI 2007)</i>, or its latest version • Design, installation and maintenance of creek crossings generally in accordance with the <i>Policy and Guidelines for Fish Friendly Waterway Crossings (NSW</i> </td> </tr> </tbody> </table>	Feature	Performance Measure	Water Management - General	<ul style="list-style-type: none"> • Minimise cumulative water impacts with the other mines in the region • Maximise water sharing with the other mines in the region • Minimise the use of clean water on site 	The Drip	Nil	Construction and operation of linear infrastructure	<ul style="list-style-type: none"> • Design, install and maintain erosion and sediment controls generally in accordance with the series <i>Managing Urban Stormwater: Soils and Construction</i> including Volume 1, Volume 2A – Installation of Services and Volume 2C – Unsealed Roads • Design, install and maintain the infrastructure within 40m of watercourses generally in accordance with the <i>Guidelines for Controlled Activities on Waterfront Land (DPI 2007)</i>, or its latest version • Design, installation and maintenance of creek crossings generally in accordance with the <i>Policy and Guidelines for Fish Friendly Waterway Crossings (NSW</i> 	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 28 • Water Management Plan, Version 3, 31 Jul 2015 • Site Water Balance, Version 1, 31 Jul 2015 • Surface Water Management Plan, Version 1, 31 Jul 2015 	<p>The water management process on the Moolarben Coal Project Site addresses the performance measures listed in Table 11:</p> <ul style="list-style-type: none"> • General water management – section 3.1 • Construction and operation of linear infrastructure – erosion and sediment controls Surface Water Management Plan, section 4.3. Ground Disturbance Permits completed for disturbance, which outlines erosion and sediment control plan requirements and objectives. • Mine sediment dams – section 4.3.2 • Clean water diversion and infrastructure – Surface Water Management Plan section 4.3.2 outlines the requirement for new clean water dams to be designed to cater for a 100 year ARI flood as required under Project Approval 05_0117 Schedule 3 condition 32 MOD 9 (June 2014). (Existing dams had been constructed in accordance with previous Project Approval 05_0117 conditions). • Mine water storages – Surface Water Management Plan section 8.3 • In-pit placement of tailings – Surface Water Management Plan, section 8.5 • Chemical and hydrocarbon storage – Surface Water Management Plan, section 8.6. Chemicals and hydrocarbons appropriately contained. Runoff from workshop areas 	Compliant Ongoing
Feature	Performance Measure											
Water Management - General	<ul style="list-style-type: none"> • Minimise cumulative water impacts with the other mines in the region • Maximise water sharing with the other mines in the region • Minimise the use of clean water on site 											
The Drip	Nil											
Construction and operation of linear infrastructure	<ul style="list-style-type: none"> • Design, install and maintain erosion and sediment controls generally in accordance with the series <i>Managing Urban Stormwater: Soils and Construction</i> including Volume 1, Volume 2A – Installation of Services and Volume 2C – Unsealed Roads • Design, install and maintain the infrastructure within 40m of watercourses generally in accordance with the <i>Guidelines for Controlled Activities on Waterfront Land (DPI 2007)</i>, or its latest version • Design, installation and maintenance of creek crossings generally in accordance with the <i>Policy and Guidelines for Fish Friendly Waterway Crossings (NSW</i> 											

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		Fisheries, 2003) and Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003), or their latest versions		collected and transferred through oily water separator. <ul style="list-style-type: none"> Aquatic and riparian ecosystem, including the relevant sections of Moolarben Creek, Bora Creek and the Goulburn River are addressed in Surface Water Management Plan sections 3.4.2, 3.4.3, 3.4.4 and 8.7. Monitoring results are presented in AEMR. 	
	Mine Sediment Dams	• Design, install and maintain the dams generally in accordance with the series Managing Urban Stormwater: Soils and Construction – Volume 1 and Volume 2E Mines and Quarries			
	Clean water diversion & storage infrastructure	• Use best endeavours to upgrade the existing clean water systems to capture and convey the 100 year ARI flood • Maximise as far as reasonable and feasible the diversion of clean water around disturbed areas on site			
	Mine water storages	• Mine water storage infrastructure is designed to store a 50 year ARI 72hour storm event • On-site storages (including tailings dams, mine infrastructure dams, groundwater storage and treatment dams) are suitably lined to comply with a permeability standard of < 1 x 10 ⁻⁹ m/s			
	Tailings, acid forming and potentially acid forming materials	In-pit emplacement, encapsulation or capping to prevent the migration of pollutants beyond the pit shell.			
	In-pit emplacement of tailings, acid forming and potentially acid forming materials	• Emplacement, encapsulation and capping to prevent or minimise the migration of pollutants beyond the pit shell of seepage from out of pit emplacement areas • Adequate freeboard within the pit void to minimise the risk of discharge to surface waters			
	Chemical and hydrocarbon storage	• Chemical and hydrocarbon products to be stored in bunded areas in accordance with the relevant Australian Standard			

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	Aquatic and riparian ecosystem, including the relevant sections of Moolarben Creek, Bora Creek and the Goulburn River	Aquatic and riparian ecosystem, including the relevant sections of Moolarben Creek, Bora Creek and the Goulburn River			
	Water Management Plan				
33(a)	<p>The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p style="color: #0070c0;">(a) be prepared in consultation with NOW and the EPA, by suitably qualified and experienced persons whose appointment has been approved by the Secretary and be submitted to the Secretary for approval by 31 March 2015;</p> <p style="color: #c00000;">(a1) include reference to the National Water Quality Management Strategy;</p> <p style="color: #c00000;">(a2) include detailed performance criteria and describe measures to ensure that the Proponent complies with the Water Management Performance Measures (see Table 11);</p>		<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 29 Water Management Plan, Apr 2010 Letter from DP&E re Approval of Dr David Newton (WRM) and Peter Dundon (Dundon Consulting, 11 Feb 2015 Water Management Plan, Jul 2015 Letter from DP&E re Approval of Water Management Plan, 31 Jul 2015 	<p>The Water Management Plan was prepared to satisfy Project Approval 05_0117 Schedule 3 condition 33(a). A general review and update of the Water Management Plan occurred in June 2013, and Version 3 was developed in July 2015 to address the requirements of Project Approval 05_0117 Schedule 3 condition 33(a) MOD 11, and to include Project Approval 08_0135 Schedule 3 condition 29 for Stage 2:</p> <p style="color: #0070c0;">(a) Water Management Plan Version 3 was prepared in consultation with the EPA and NOW by MCO, WRM Water & Environment, and Dundon Consulting, whose appointment has been approved by the Secretary and submitted to the Secretary and approved on 31 July 2015 (i.e. later than the required date of 31 March 2015);</p> <p style="color: #0070c0;">(a1) section 2.4.3 referenced the National Water Quality Management Strategy;</p> <p style="color: #0070c0;">(a2) performance criteria are detailed in the specific Management Plans and section 4 describes measures to ensure compliance with the Water Management Performance Measures outlined in Project Approval 05_0117 Schedule 3 condition 32 Table 11.</p>	Compliant
33(b)	(b) in addition to the standard requirements for management plans (see Condition 3 of Schedule 5), this plan must include:		<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 29(e) 	The Water Management Plan was prepared and included each of the following sub-plans.	Compliant
33(b)(i)	<p>(i) Site Water Balance that:</p> <ul style="list-style-type: none"> includes details of: - sources and security of water supply, including contingency planning for future reporting periods; - water use and management on site, including details of water 		<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 29(e)(i) Site Water Balance, Version 1, 31 Jul 2015 	The Site Water Balance prepared by WRM Water and Environment and Dundon Consulting in July 2015 for Stage 1 and Stage 2 of the project was approved by DP&E on 31 July 2015 and includes:	Compliant

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	<p>sharing between neighbouring mining operations; - reporting procedures, including the preparation of a site water balance for each calendar year;</p> <ul style="list-style-type: none"> describes the measures that would be implemented to: - minimise clean water use on site; - maximise water sharing with the other mines in the region; 	<ul style="list-style-type: none"> Letter from DP&E re Approval of Site Water Balance, 31 Jul 2015 	<ul style="list-style-type: none"> section 7 - describes sources and security of water supply, including contingency planning for future reporting periods. The Site Water Balance prepared by WRM Water and Environment and needs to be updated with current licences. Section 3.0 and 4.0 of the SWMP; section 5 - addresses water demands, water use and management on site, including details of water sharing between neighbouring mining operations; and describes reporting procedures, including the preparation of a site water balance for each calendar year; section 4.3 and 7.4 describe the measures to be implemented to minimise clean water use on site; and section 7.3 addresses maximise water sharing with the other mines in the region; 	
33(b)(ii)	<p>(ii) Surface Water Management Plan, that includes:</p> <ul style="list-style-type: none"> detailed baseline data on water flows and quality in the water bodies that could be affected by the project; a detailed description of the water management system on site; detailed plans, including design objectives and performance criteria, for the: <ul style="list-style-type: none"> in-pit emplacement areas for tailings, acid forming and potentially acid forming materials; - final voids (see the Rehabilitation Objectives in Table 13); detailed performance criteria for the following, including trigger levels for investigating any potentially adverse impacts associated with the project: - the water management system; - downstream surface water quality; - downstream flooding impacts and - stream and riparian vegetation health for Moolarben Creek, Bora Creek, and the Goulburn River; a program to monitor and report on: - the effectiveness of the water management system; and - surface water flows and quality, stream and riparian vegetation health in the watercourses that could be affected by the project; and - downstream flooding impacts; reporting procedures for the results of the monitoring program; and 	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 29(e)(ii) Surface Water Management Plan, Version 1, 31 Jul 2015 Letter from DP&E re Approval of Surface Water Management Plan, 31 Jul 2015 	<p>(ii) The Surface Water Management Plan Version 1 approved by DP&E on 31 July 2015 includes:</p> <ul style="list-style-type: none"> section 3 Surface Water and Environmental Setting provides detailed baseline data on water flows and quality in the water bodies that could be affected by the project; section 4 Surface Water Management System provides a detailed description of the water management system on site; detailed plans, including design objectives and performance criteria, for the: <ul style="list-style-type: none"> in-pit emplacement areas for tailings, acid forming and potentially acid forming materials; section 8.5 addresses final voids (see also the Rehabilitation Objectives in Table 13); section 5 Surface Water Impact Trigger Values describes performance criteria including trigger levels for investigating any potentially adverse impacts associated with the project on the water management system; downstream surface water quality; downstream flooding impacts and stream and riparian vegetation health for Moolarben Creek, Bora Creek, and the Goulburn River; section 7 Surface Water Monitoring Program presents a program to monitor and report on the 	Compliant

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	<ul style="list-style-type: none"> a plan to respond to any exceedances of the performance criteria, and mitigate any adverse surface water impacts of the project; 		<p>effectiveness of the water management system; surface water flows and quality, stream and riparian vegetation health in the watercourses and downstream flooding impacts;</p> <ul style="list-style-type: none"> section 10 provides reporting procedures for the results of the monitoring program; and section 6 provides a plan to respond to any exceedances of the performance criteria, and mitigate any adverse surface water impacts of the project; 	
33(b)(iii)	<p>Groundwater Management Plan, that includes:</p> <ul style="list-style-type: none"> detailed baseline data on groundwater levels, yield and quality in the region and privately-owned groundwater bores that could be affected by the project; groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; a program to monitor and report on: <ul style="list-style-type: none"> groundwater inflows to the underground and open cut mining operations; the seepage/leachate from water storages, emplacements, backfilled voids and final voids; background changes in groundwater yield/quality against mine-induced changes; impacts of the project on: <ul style="list-style-type: none"> regional and local (including alluvial) aquifers; groundwater supply of potentially affected landowners; and groundwater dependent ecosystems (including the Drip) and riparian vegetation; a program to validate the groundwater model for the project, and compare the monitoring results with modelled predictions; and a plan to respond to any exceedances of the groundwater assessment criteria. 	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 29(e)(iii) Groundwater Management Plan, Version 1, Jul 2015 Letter from DP&E re Approval of Groundwater Management Plan, 31 Jul 2015 	<p>A Groundwater Management Plan prepared by Moolarben Coal and Dundon Consulting to satisfy Project Approval Project Approval 05_0117 condition 33(b)(iii) and Project Approval 08_0135 Schedule 3 condition 29(e)(iii) approved by DP&E on 31 July 2015 and includes:</p> <ul style="list-style-type: none"> sections 3 provides detailed baseline data on groundwater levels, yield and quality in the region and privately-owned groundwater bores that could be affected by the project. Groundwater Management Plan section 4 and Attachment 1 contain groundwater monitoring schedule and baseline data for monitoring bores and Attachment 2 contains information regarding baseline data of private bores; section 8 presents groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; section 6 presents a groundwater monitoring program for: <ul style="list-style-type: none"> groundwater inflows to the underground and open cut mining operations; the seepage/leachate from water storages, emplacements, backfilled voids and final voids (section 6.1.4); background changes in groundwater yield/quality against mine-induced changes (section 6.1); the permeability, hydraulic gradient, flow direction and connectivity of the palaeochannel and flows within Wilpinjong Creek (requires 3 additional monitoring piezometers within the main trunk of the paleochannel between the open cut 4 boundary and Wilpinjong Creek) (section 6.4); impacts of the project on regional and local (including alluvial) aquifers (section 5.2); 	

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance									
			<p>groundwater supply of potentially affected landowners; and groundwater dependent ecosystems (including the Drip) and riparian vegetation(section 7) for the project, and compare against monitoring results with modelled predictions (section 5); and</p> <ul style="list-style-type: none"> Section 8.2 and 10 present processes to respond to any exceedances of the groundwater assessment criteria. 										
33(b)(iv)	<p>(iv) a protocol that has been prepared in consultation with the owners of the Ulan and Wilpinjong mines to:</p> <ul style="list-style-type: none"> minimise cumulative water quality impacts; review opportunities of increased water sharing between these projects; co-ordinate water quality monitoring programs as far as practicable; undertake joint investigations/studies in relation to complaints/exceedances of trigger levels where cumulative impacts are considered likely; and co-ordinate modelling programs for validation, re-calibration and re-running of groundwater models. 	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 29(e)(iv) Water Management Plan section 2.4.4, 31 Jul 2015 Data Sharing Deed, 27 Mar 2012 Joint Mines Consultation Commitments, 29 Oct 2015 	<p>A Data Sharing Deed signed on 27 March 2012 provides the protocol for sharing of environmental monitoring data between Moolarben Coal, Ulan Coal and Wilpinjong Coal.</p> <p>Six-monthly meetings are held between the parties to discuss and implement integrated monitoring programs to assess any cumulative water quality impacts, co-ordinate water quality monitoring programs as far as practicable, undertake joint investigations/studies if cumulative impacts are considered likely; and co-ordinate modelling programs for validation, re-calibration and re-running of groundwater models.</p>	Compliant Ongoing									
	BIODIVERSITY												
	Biodiversity Offset Strategy												
34	<p>The Proponent shall implement the biodiversity offset strategy for the project summarised in Table 12, and shown conceptually in Appendix 8, to the satisfaction of the Secretary.</p> <p><i>Table 12: Summary of Biodiversity Offset Strategy</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Area</th> <th style="width: 50%;">Offset Type</th> <th style="width: 30%;">Min. Size (ha)</th> </tr> </thead> <tbody> <tr> <td style="color: #0070C0;">Area 3 Property 6</td> <td style="color: #0070C0;">Conserve: • 6 ha of existing EEC Enhance and conserve: • 2.6 ha of regenerating EEC</td> <td style="color: #0070C0;">8.6</td> </tr> <tr> <td style="color: #0070C0;">Areas 1, 2 & 3 Properties 6, 10, 12, 13, 14 & 15</td> <td style="color: #0070C0;">Enhance existing vegetation: • 1282 ha of native vegetation Revegetate: • 48 ha of existing disturbed land to EEC</td> <td style="color: #0070C0;">1330</td> </tr> </tbody> </table>	Area	Offset Type	Min. Size (ha)	Area 3 Property 6	Conserve: • 6 ha of existing EEC Enhance and conserve: • 2.6 ha of regenerating EEC	8.6	Areas 1, 2 & 3 Properties 6, 10, 12, 13, 14 & 15	Enhance existing vegetation: • 1282 ha of native vegetation Revegetate: • 48 ha of existing disturbed land to EEC	1330	<ul style="list-style-type: none"> Biodiversity Management Plan, Version 1, Jul 2015 	<p>A Biodiversity Offset Strategy to address the requirements of Project Approval (05_0117) Schedule 3 Conditions 34 to address offset impacts associated with development of the Moolarben Coal Complex is being developed progressively with additions and revision inserted into the Biodiversity Management Plan.</p> <p>Subsequent revisions of the Biodiversity Management Plan will incorporate the Biodiversity Offset Strategy requirements under, Project Approval 05_0117 Schedule 3 Condition 36 and Project Approval 08_0135 Schedule 3 Condition 39 including a detailed monitoring program, performance measures, completion criteria and remedial actions.</p>	Noted
Area	Offset Type	Min. Size (ha)											
Area 3 Property 6	Conserve: • 6 ha of existing EEC Enhance and conserve: • 2.6 ha of regenerating EEC	8.6											
Areas 1, 2 & 3 Properties 6, 10, 12, 13, 14 & 15	Enhance existing vegetation: • 1282 ha of native vegetation Revegetate: • 48 ha of existing disturbed land to EEC	1330											

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance	
	Area 1 Properties 12, 13, 14 & 15	Revegetate: • 153 ha of cleared land to native vegetation	153		
	Clarke	Enhance existing vegetation: • 300 ha of existing native vegetation • 32 ha of EEC	332		
	Clifford	Enhance existing vegetation: • 19 ha of native vegetation • 62 ha of EEC	81		
	Elward	Enhance existing vegetation: • 146 ha of native vegetation • 24 ha of EEC	170		
	Property 5	Enhance existing vegetation: • 40 ha of native vegetation • 25 ha of EEC	65		
	Properties 24 and 25	Enhance existing vegetation: • 59 ha of native vegetation • 4 ha of EEC	63		
	Bobadeen	Enhance existing vegetation: • 8 ha of native vegetation • 159 ha of EEC	167		
	Moolarmoo	Enhance existing vegetation: • 25 ha of native vegetation • 19 ha of EEC	44		
	Long Term Security of Offset				
35	<p>By the end of June 2015, unless otherwise agreed by the Secretary, the Proponent shall make suitable arrangements to provide appropriate long-term security for the offset areas in Table 12 in perpetuity, in consultation with OEH and to the satisfaction of the Secretary.</p> <p><i>Note: The preferred mechanisms for the provision of long-term conservation security are via Biobanking Arrangements and additions to the OEH Estate.</i></p>	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 38 Letter to DP&E re Project Approval 05_0117 Schedule 3 condition 35 for Extension of Submission of the Long Term Security Offset, 8 Dec 2015 	<p>Arrangements to provide long-term security for the offset areas described in Project Approval 05_0117 Schedule 3 condition 34 - Table 12 have been developed in consultation with OEH (NWPS). The documentation has been prepared by Moolarben Coal and was submitted to the Secretary for approval in December 2015. Moolarben Coal requested DP&E for an extension for the submission of the arrangements for long term security of the offsets to 31 March 2016, in correspondence on 8 December 2015.</p>	Compliant Ongoing	

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	Biodiversity			
36	<p>The Proponent shall prepare and implement a Biodiversity Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with OEH and be submitted to the Secretary for approval by 31 March 2015;</p> <p>(b) describe the short, medium, and long term measures that would be implemented to: • manage the remnant vegetation and habitat on the site and in the offset areas; • minimise biodiversity impacts of the project; and • implement the biodiversity offset strategy, including detailed performance and completion criteria;</p> <p>(c) include detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy, and triggering remedial action (if necessary);</p> <p>(d) include a detailed description of the measures that would be implemented for: • enhancing the quality of existing vegetation and fauna habitat; • restoring native vegetation and fauna habitat on the biodiversity offset areas through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary); • maximising the salvage of resources within the approved disturbance area - including vegetative, soil and cultural heritage resources – for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area; • rehabilitating the environmental bunds on site as soon as practicable and maintaining the landscaping on the bunds once it has been established; • collecting and propagating seed; • minimising the impacts on fauna on site, including undertaking pre-clearance surveys; • managing any potential conflicts between the proposed restoration works in the biodiversity areas and any Aboriginal heritage values (both cultural and archaeological); • managing salinity; • controlling weeds and feral pests; • controlling erosion; • managing grazing and agriculture on site; • controlling access; and • bushfire management;</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 39 • Letter to OEH re Input to Biodiversity Management Plan, 20 Mar 2015 • Biodiversity Management Plan, 31 Jul 2015 • Letter from DP&E re Staged Biodiversity Management Plan, 20 Jul 2015 • Letter from DP&E re Approval of Biodiversity Management Plan, Version 1, 31 Jul 2015 	<p>The Biodiversity Management Plan was prepared by MCO with input from EcoLogical Australia to satisfy the requirements of Project Approval 05_0117 Schedule 3 condition 36.</p> <p>The Biodiversity Management Plan:</p> <p>(a) was prepared in consultation with OEH and submitted to the Secretary for approval. The Biodiversity Management Plan was approved on 31 July 2015;</p> <p>(b) sections 6 and 7 and section 10 - Table 4 describe the short, medium, and long term measures to be implemented to:</p> <ul style="list-style-type: none"> • section 6 addresses management of remnant vegetation and habitat on the site and in the offset areas; • section 4, 5 and 6 address minimising biodiversity impacts of the project; and • section 9 outlines the planning for the implementation of the biodiversity offset strategy, including detailed performance and completion criteria; <p>(c) section 10 addresses performance measures and completion criteria for evaluating the performance of the biodiversity offset strategy, and triggering remedial action (if necessary);</p> <p>(d) sections 4, 5, 6 and 7 present a description of the measures to be implemented for:</p> <ul style="list-style-type: none"> • enhancing the quality of existing vegetation and fauna habitat; and restoring native vegetation and fauna habitat on the biodiversity offset areas through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary), and managing any potential conflicts between the proposed restoration works in the biodiversity areas and any Aboriginal heritage values 	Compliant

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	<p>(e) include a seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria;</p> <p>(f) identify the potential risks to the successful implementation of the biodiversity offset strategy, and include a description of the contingency measures that would be implemented to mitigate against these risks; and (g) include details of who would be responsible for monitoring, reviewing, and implementing the plan.</p>		<p>(both cultural and archaeological) will be addressed in Extraction Plans and subsequent revisions of this Biodiversity Management Plan;</p> <ul style="list-style-type: none"> • section 4.2.3 and 7.6 address maximising salvage of resources within the approved disturbance area (including vegetative, soil and cultural heritage resources) for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area; • section 7.1 addresses rehabilitating the environmental bunds on site as soon as practicable and maintaining the landscaping on the bunds once it has been established; • section 5 addresses collecting and propagating seed; • sections 4.2 and 4.3 address minimising the impacts on fauna on site, including undertaking pre-clearance surveys; • section 7.2 addresses managing salinity; • section 7.3 addresses controlling weeds and feral pests; • section 7.4 and 7.4 address controlling erosion; • section 7.6 addresses managing grazing and agriculture on site; • section 7.7 addresses controlling access; and • section 7.8 addresses bushfire management; <p>(e) section 8 includes monitoring program to report on the effectiveness of biodiversity management measures, and progress against the detailed performance and completion criteria;</p> <p>(f) potential risks to the successful implementation of the biodiversity offset strategy will be addressed in future revisions of the Biodiversity Management Plan, and section 11 describes the contingency measures that would be implemented to mitigate against these risks; and</p> <p>(g) include details of who would be responsible for monitoring, reviewing, and implementing the plan.</p>	Compliant Ongoing
	Conservation Bond			

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
37	<p>By 30 June 2015, unless otherwise agreed by the Secretary, the Proponent shall lodge a Conservation Bond with the Department to ensure that the biodiversity offset strategy is implemented in accordance with the performance and completion criteria of the Biodiversity Management Plan. The sum of the bond shall be determined by: (a) calculating the full cost of implementing the biodiversity offset strategy (other than land acquisition costs); and (b) employing a suitably qualified quantity surveyor to verify the calculated costs, to the satisfaction of the Secretary.</p> <p>If the offset strategy is completed generally in accordance with the completion criteria in the Biodiversity Management Plan to the satisfaction of the Secretary, the Secretary will release the bond.</p> <p>If the offset strategy is not completed generally in accordance with the completion criteria in the Biodiversity Management Plan, the Secretary will call in all, or part of, the conservation bond, and arrange for the satisfactory completion of the relevant works.</p> <p><i>Notes: • Existing bonds which have been paid for the Redhills, Area 1, Area 2 and Area 3 biodiversity offset areas remain current and are satisfactory to fulfill the requirements of this condition for those areas; • Alternative funding arrangements for long-term management of the Biodiversity Offset Strategy, such as provision of capital and management funding as agreed by OEH as part of a Biobanking Agreement or transfer to conservation reserve estate can be used to reduce the liability of the conservation and biodiversity bond, and • The sum of the bond may be reviewed in conjunction with any revision to the biodiversity offset strategy.</i></p>	<ul style="list-style-type: none"> • Letter to DP&E re Offset Security and Conservation Bond Extension, 27 Apr 2015 • Letter from DP&E re Extension of Time for Offset Security and Conservation Bond, 27 Apr 2015 • Letter to DP&E re Status of Conservation Bond, 26 Nov 2015 	<p>A Conservation Bond for the biodiversity offset strategy has been calculated for the Moolarben Coal offset areas for the performance and completion criteria of the Biodiversity Management Plan.</p> <p>The sum of the bond was determined by: (a) calculating the full cost of implementing the biodiversity offset strategy (other than land acquisition costs); and (b) the calculated costs were verified by qualified quantity surveyor and agreed with the OEH (NWPS).</p> <p>In correspondence with DP&E on 27 April 2015, Moolarben Coal requested an extension of time for the lodgement of the Offset Security and Conservation Bond. DP&E agreed to an extension of time to 31 December 2015.</p> <p>A letter was submitted to the DP&E on 26 November 2015 describing the status of the Conservation Bond. An Extension of Time was granted to the 31 March 2016.</p>	Compliant
	HERITAGE			
	Protection of Aboriginal Heritage Items			
38	<p>Unless otherwise authorised under the NP&W Act, the Proponent shall ensure that the project does not cause any direct or indirect impact on the identified Aboriginal heritage items located outside the approved disturbance area of the project.</p> <p><i>Note: Identified Aboriginal heritage items are listed in Appendix 9.</i></p>			Noted
	Heritage Management Plan			

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
39	<p>The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Secretary within six (6) months from the date of approval for MOD 9. This plan must:</p> <p>(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;</p> <p>(b) be prepared in consultation with OEH and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);</p> <p>(c) include results of further archaeological survey of the 10 hectares of land (as identified on Figure 10 of Appendix F of the EA) that has not been surveyed, and any land adjacent to the open cut mines that has not been surveyed and may be subject to blasting impacts;</p> <p>(d) include the following for the management of Aboriginal Heritage: • a detailed archaeological test excavation and potential salvage program for site S1MC331; • a detailed archaeological test excavation and potential salvage program for sites S1MC343 and S1MC344, if it is determined by a qualified archaeologist that these sites may be subject to impacts associated with blasting; • a description of the measures that would be implemented for: - protecting, monitoring and/or managing the heritage sites/items identified in Appendix 9 and any sites identified during the surveys required in (c) above; - conserving the sites outside the surface disturbance area, including measures that would be implemented to secure, analyse and record the sites at risk of subsidence and/or blasting; - managing the discovery of any human remains or previously unidentified Aboriginal objects on site; - maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site; - ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on site and within any Aboriginal heritage conservation areas; and - ensuring any workers on site receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions;</p> <p>• a strategy for the storage of any heritage items salvaged on site, both during the project and in the long term; (e) include a detailed plan for the implementation of the mitigation and management measures outlined for the specified heritage items in Appendix 10, including archival recording, historical</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 46 • Heritage Management Plan, Jul 2008 • Letter from DP&E re Approval of Suitably Qualified and Experienced Persons for the Heritage Management Plan, 11 Feb 2015 • Heritage Management Plan, Version 4, Jun 2015 • Letter from DP&E re Approval of Heritage Management Plan, 22 Jun 2015 	<p>A Heritage Management Plan was prepared and submitted to the DoP in July 2008. The Heritage Management Plan Version 2 dated May 2013 addressed all of the Stage 1 project area, Version 3 dated February 2015 incorporated MOD 9, and Version 4 included management and mitigation measures for both Stage 1 and Stage 2 of the. The Heritage Management Plan Version 4 prepared to satisfy the requirements of Project Approval 05_0117 Schedule 3 condition 39 and Project Approval 08_0136 Schedule 3 condition 46, was approved on 22 June 2015:</p> <p>(a) prepared by suitably qualified and experienced persons (Dr Andrew Sneddon and Dr Matthew Whincop of the University of Queensland Culture and Heritage Unit) whose appointment was endorsed by the Secretary on 11 February 2015;</p> <p>(b) was prepared in consultation with OEH and the Registered Aboriginal Parties stakeholders;</p> <p>(c) include results of further archaeological survey of the 10 hectares of land (as identified on Figure 10 of Appendix F of the EA) that has not been surveyed, and any land adjacent to the open cut mines that has not been surveyed and may be subject to blasting impacts;</p> <p>(d) Appendix E and sections 5.6 and 5.8.3 include the following for the management of Aboriginal Heritage:</p> <ul style="list-style-type: none"> • a archaeological test excavation and potential salvage program for site S1MC331; • a archaeological test excavation and potential salvage program for sites S1MC343 and S1MC344, if the sites may be subject to impacts associated with blasting; • a description of the measures that would be implemented for: <ul style="list-style-type: none"> - section 5 addresses protecting, monitoring and/or managing the heritage sites/items identified in Appendix 9 and any sites identified during the surveys required in (c) above; - section 5.2, Table 6 and Appendix D describes conserving the sites outside the surface disturbance area, including measures that would 	Compliant



Keeping Place for Aboriginal heritage items salvaged on Moolarben Coal Complex site, observed during the site inspection

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Moolarben Coal Project

Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	research and archaeological assessment prior to any disturbance.		be implemented to secure, analyse and record the sites at risk of subsidence and/or blasting; - section 5.10 and 5.11 address managing the discovery of any human remains or previously unidentified Aboriginal objects on site; - section 5.1 addresses maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site; - ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on site and within any Aboriginal heritage conservation areas; and - Section 7 outlines heritage induction for workers prior to carrying out any development on site, and that suitable records are kept of these inductions; • section 5.13 provides a strategy for the storage of any heritage items salvaged on site, both during the project and in the long term; and (e) section 6 includes a plan for the implementation of the mitigation and management measures outlined for the specified heritage items in Appendix 10, including archival recording, historical research and archaeological assessment prior to any disturbance.	
40-53	(deleted)			
	TRANSPORT			
	Road Works			
54	Prior to the commencement of mining operations in open cut 2, the Proponent shall divert or close Carrs Gap Road to the satisfaction of Council.		Carrs Gap Road was closed at the commencement of mining operations in OC2.	Compliant COMPLETE
55	Prior to the commencement of mining operations in open cut 3, the Proponent shall divert or close Moolarben Road to the satisfaction of Council. <i>Note: These road works must be constructed in accordance with the relevant RMS or Austroads standards, and signposted and lit in accordance AS 1742 – Manual of Uniform Traffic Control Devices and AS/NZS 1158: 2005 – Lighting for Roads and Public Spaces.</i>		No mining operations had occurred in OC3 at the date of this audit (December 2015).	Not triggered

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	Ulan Road Strategy			
56	<p>The Proponent shall:</p> <p>(a) work with Council and the owners of the Ulan and Wilpinjong mines to agree to develop a detailed plan for the implementation of the Ulan Road Strategy; and</p> <p>(b) make financial contributions towards the implementation of this detailed plan, in accordance with the requirements in the plan, with its share of the mining companies' contribution for the implementation of the strategy to be proportionate to its share of mining-related traffic to be generated on the road during the life of the strategy.</p> <p>If there is any dispute between the various parties involved in either the development of the detailed plan for the implementation of the strategy, or the implementation of the strategy, then any of the parties may refer the matter to the Secretary for resolution.</p>	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule3 condition 47 Deed of Agreement for Funding and Delivery of the Ulan Road Upgrade, July 2014 	<p>(a) Moolarben Coal, Mid-Western Regional Council and the owners of the Ulan and Wilpinjong mines to agree to develop a detailed plan for the implementation of the Ulan Road Strategy</p> <p>(b) A Deed of Agreement for Funding and Delivery of the Ulan Road Upgrade was signed by Moolarben Coal, Ulan Coal, Wilpinjong Coal and the Mid-Western Regional Council in July 2014.</p> <p>Financial contributions towards the implementation of the Ulan Road Strategy occurs in accordance with the requirements in the Deed of Agreement dated July 2014.</p> <p>Ulan Road upgrade as part of the Ulan Road Strategy.</p>	Compliant Ongoing
57	(deleted)			
	TRAFFIC MANAGEMENT			
58	<p>The Proponent shall:</p> <p>(a) schedule the shift changes on site to occur outside of school bus hours; and</p> <p>(b) co-ordinate the shift changes on site with the shift changes of the adjoining Ulan and Wilpinjong mines to minimise the potential cumulative traffic impacts of the shift changes at the three mines.</p>		<p>(a) The 12hour shift changes occur at 0600-0730 hours prior to school bus hours.</p> <p>(b) Shift changes at the adjoining Ulan and Wilpinjong mines were noted to not cause cumulative traffic impacts on the Mudgee-Ulan Road.</p>	Compliant
	Rail Transport – West			
59	<p>The Proponent shall not transport any coal west of the site through Gulgong and Mudgee without the written approval of the Secretary. In seeking this approval, the Proponent shall submit a report to the Secretary that:</p> <p>(a) has been prepared in consultation with Council;</p> <p>(b) demonstrates that the railway line has been suitably upgraded to accommodate the proposed coal train traffic;</p> <p>(c) describes: • the expected tonnages, train size, number, and rail scheduling of the proposed coal train movements (both laden and unladen); • the measures that would be implemented to minimise, mitigate and/or manage the ongoing environmental effects of these coal train movements; and • how the performance of these measures would be monitored.</p>		No coal is transported west of the Moolarben Coal site through Gulgong and Mudgee.	Not triggered

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	Monitoring of Coal Transport			
60	The Proponent shall monitor the: (a) amount of coal transported from the site each year; and (b) date and time of each train movement generated by the project.		The amount of coal transported from the Moolarben Coal Complex CHPP is recorded for each train loaded at the CHPP loading site and recorded with the time and date of each rain movement.	Compliant Ongoing
	VISUAL			
	Additional Visual Impact Mitigation			
61	<p>Upon receiving a written request from the owner of any residence on privately-owned land which has, or would have, significant direct views of the mining operations and infrastructure on site during the project, the Proponent shall implement additional visual impact mitigation measures (such as landscaping treatments or vegetation screens) to reduce the visibility of these mining operations and infrastructure from the residences on their properties.</p> <p>These mitigation measures must be reasonable and feasible, and must be implemented within a reasonable timeframe.</p> <p>If the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.</p> <p><i>Notes: • The additional visual impact mitigation measures must be aimed at reducing the visibility of the mining operations on site from significantly affected residences, and do not require measures to reduce the visibility of the mining operations from other locations on the affected properties. • The additional visual impact mitigation measures do not necessarily have to include the implementation of measures on the affected property itself (i.e. the additional measures could involve the implementation of measures outside the affected property boundary that provide an effective reduction in visual impacts).</i></p>		No written requests from the owner of any residence on privately-owned land which has significant direct views of the mining operations and infrastructure on site, were received between January 2013 and December 2015.	Noted Not triggered
	Operating Conditions			
62	The Proponent shall: (a) implement best management practice to minimise the visual and off-site lighting impacts of the project; (b) ensure no fixed outdoor lights shine above the horizontal; (c) ensure no in-pit mobile lighting rigs shine above the pit wall and other mobile lighting rigs do not shine above the horizontal;	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 50 • AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting 	As the site establishment of Stage 2 OC4 was occurring at the date of this audit lighting and visual amenity were being considered and measures implemented to meet the requirements of this condition: (a) measures to minimise the visual and off-site lighting impacts of the project were implemented to prevent light spill to Wollar Road;	Compliant Ongoing

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Moolarben Coal Project

Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	<p>(d) ensure that all external lighting associated with the project complies with Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting or its latest version;</p> <p>(e) provide for the establishment of trees and shrubs and/or the construction of mounding or bunding to minimise visual and lighting impacts on the Proponent’s land adjoining public roads with views of the site;</p> <p>(f) ensure that the visual appearance of all buildings, structures, facilities or works (including paint colours and specifications) is aimed at blending as far as possible with the surrounding landscape, to the satisfaction of the Secretary.</p>		<p>(b) fixed outdoor lights did not shine above the horizontal or above the building line of any illuminated structure;</p> <p>(c) in-pit mobile lighting rigs do not shine above the pit wall and other mobile lighting rigs did not shine above the horizontal;</p> <p>(d) external lighting complies with Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting;</p> <p>(e) trees and shrubs and/or mounding or bunding have been established along the northern side of Wollan Road to minimise visual / lighting impacts on adjoining public roads with views of the site;</p> <p>(f) the visual appearance of the Moolarben Coal buildings, structures, facilities or works blend in as far as practicable with the surrounding landscape.</p>	
	BUSHFIRE MANAGEMENT			
63	<p>The Proponent shall:</p> <p>(a) ensure that the project is suitably equipped to respond to any fires on site; and</p> <p>(b) assist the RFS and emergency services as much as practicable if there is a fire in the vicinity of the site.</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 51 • Rehabilitation Management Plan, section 5.13, Aug 2015 • Landscape Management Plan, section 3.23, Jun 2013 	<p>(a) MCO maintain water carts with firefighting equipment capable of extinguishing fire outbreaks. This firefighting equipment, together with graders and bulldozers used for mining, provides effective bushfire fighting capability.</p> <p>(b) MCO liaise RFS and emergency services in the event of a fire outbreak. Mine-site personnel have emergency preparedness training.</p> <p>There have been no major outbreaks of fire on the Moolarben Coal site between 2013 and 2015.</p>	Compliant Ongoing
	WASTE			
64	<p>The Proponent shall:</p> <p>(a) implement all reasonable and feasible measures to minimise the waste (including coal reject) generated by the project;</p> <p>(b) ensure that the waste generated by the project is appropriately stored, handled and disposed of; and</p> <p>(c) monitor and report on effectiveness of the waste minimisation and management measures in the Annual Review.</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 52 • 2012-2013 AEMR section 2.7 • 2013-2014 AEMR section 3.8 • Waste Classification Guideline – Part 1 Classification of Waste, EPA, Nov 2014 	<p>The Waste Management Plan sets a recycling target of 70% for Moolarben Coal. Total Integrated Waste Management Service manages all waste streams generated on site. This includes general waste, cardboard and paper recycling, co-mingled recycling, waste oil, and steel. Consultation with the waste management contractor to identify opportunities to improve the recycling rates occurs.</p> <p>During 2012-2013 period 82.52% of all waste removed from site was recycled and during 2013-2014 period, 88.98% of all waste removed from site was recycled.</p>	Compliant Ongoing

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Moolarben Coal Project

Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance																		
	REHABILITATION																					
	Rehabilitation Objectives																					
65	<p style="color: blue;">The Proponent shall rehabilitate the site to the satisfaction of the Executive Director Mineral Resources. This rehabilitation must be generally consistent with the proposed rehabilitation described in the EA (and depicted conceptually in the figure in Appendix 8), and comply with the objectives in Table 13.</p> <p style="color: blue;">Table 13: Rehabilitation Objectives</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr style="background-color: #D9E1F2;"> <th style="width: 20%;">Feature</th> <th style="width: 80%;">Objective</th> </tr> </thead> <tbody> <tr> <td style="color: blue;">Mine site (as a whole)</td> <td style="color: blue;"> <ul style="list-style-type: none"> • Safe, stable and non-polluting; • Constructed landforms are to drain to the natural environment (excluding the final voids); • Final landforms are to be consistent with the surrounding topography of the area, taking into account relief patterns and principles; and • Minimise visual impact of final landforms as far as is reasonable and feasible </td> </tr> <tr> <td style="color: blue;">Final voids</td> <td style="color: blue;"> <ul style="list-style-type: none"> • Minimise the size and depth of final voids so far as is reasonable and feasible, subject to meeting the objectives below; • Minimise the drainage catchment of the final void so far as is reasonable and feasible; • Negligible high wall instability risk; • The size and depth of the final voids must be designed having regard to their function as long-term groundwater sinks, to ensure that groundwater flows across the back-filled pit towards the final void; and • Minimise risk of flood interaction for all flood events up to and including the Probable Maximum Flood level. </td> </tr> </tbody> </table>	Feature	Objective	Mine site (as a whole)	<ul style="list-style-type: none"> • Safe, stable and non-polluting; • Constructed landforms are to drain to the natural environment (excluding the final voids); • Final landforms are to be consistent with the surrounding topography of the area, taking into account relief patterns and principles; and • Minimise visual impact of final landforms as far as is reasonable and feasible 	Final voids	<ul style="list-style-type: none"> • Minimise the size and depth of final voids so far as is reasonable and feasible, subject to meeting the objectives below; • Minimise the drainage catchment of the final void so far as is reasonable and feasible; • Negligible high wall instability risk; • The size and depth of the final voids must be designed having regard to their function as long-term groundwater sinks, to ensure that groundwater flows across the back-filled pit towards the final void; and • Minimise risk of flood interaction for all flood events up to and including the Probable Maximum Flood level. 	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 3 condition 53 • <i>Moolarben Open Cut 1 - Rehabilitation Monitoring 2013 - March 2014</i>, Ecological Australia • Rehabilitation Management Plan, Aug 2015 	<p>Rehabilitation of the areas of completed areas of the site has commenced and is generally consistent with the proposed rehabilitation described in the EA (and depicted conceptually in the figure in Appendix 8), to address the requirements in Table 13.</p> <p style="color: blue;">Table 13: Rehabilitation Objectives</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr style="background-color: #D9E1F2;"> <th style="width: 20%;">Feature</th> <th style="width: 80%;">Objective</th> </tr> </thead> <tbody> <tr> <td style="color: blue;">Mine site (as a whole)</td> <td style="color: blue;"> <ul style="list-style-type: none"> No evidence of significant gully or tunnel erosion, vegetation death, chemical staining or odour that would indicate pollution observed during the site inspection on 7 Dec 2015. 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Rehabilitation monitoring has been undertaken to demonstrate progression	<div style="background-color: #92D050; padding: 5px; margin-bottom: 5px;">Compliant</div> <div style="background-color: #D9E1F2; padding: 5px; margin-bottom: 5px;">Compliant Ongoing</div> <div style="background-color: #D9E1F2; padding: 5px; margin-bottom: 5px;">Not triggered</div> <div style="background-color: #92D050; padding: 5px;">Compliant Ongoing</div>
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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance												
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	Progressive Rehabilitation															
66	<p>The Proponent shall rehabilitate the site progressively. That is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies shall be employed when areas prone to dust generation cannot yet be permanently rehabilitated.</p> <p><i>Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the project.</i></p>		<p>Progressive rehabilitation was being undertaken on site at the date of this audit (December 2015). The rate of rehabilitation was observed to be consistent with the rate of completion of works on disturbed areas. There were no significant disturbed areas observed to be awaiting revegetation.</p>	Compliant Ongoing												
67	The Proponent shall progressively landscape the environmental bunds on site.		Environmental bunds on the site have been stabilised and grass cover established to blend in with the agricultural landscape of the adjacent land.	Compliant Ongoing												
	Rehabilitation Management Plan															
68	<p>The Proponent shall prepare and implement a Rehabilitation Management Plan for the project to the satisfaction of the Executive Director, Mineral Resources. This plan must:</p> <p>(a) be prepared in consultation with the Department, NOW, OEH, Council and the CCC;</p> <p>(b) be submitted to the Executive Director, Mineral Resources for approval by 31 March 2015;</p>	<ul style="list-style-type: none"> Rehabilitation Management Plan, Version 3, 11 Aug 2015 Letter to OEH re Rehabilitation Management Plan Input, 31 Mar 2015 Letter to NOW re Rehabilitation Management Plan Input, 31 Mar 2015 	<p>An Interim Rehabilitation Management Plan was prepared for Stage 1 and submission to the Executive Director, Mineral Resources in March 2015 to satisfy Project Approval 05_0117 Schedule 3 condition 68. The Plan was revised to include the requirements for Stage 2 development under Project Approval 08_0135 Schedule 3 condition 56 in May 2015 and updated to address regulatory review</p>	Compliant												

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	<p>(c) be prepared in accordance with any relevant DRE guideline;</p> <p>(c1) provide for the periodic review and updating of the rehabilitation plans and management strategies to ensure best practice landform design and establishment strategies are employed</p> <p>(d) describe how the rehabilitation of the site would be integrated with the implementation the biodiversity offset strategy;</p> <p>(e) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);</p> <p>(f) describe the measures that would be implemented to ensure compliance with the relevant conditions of this approval, and address all aspects of rehabilitation including mine closure, final landform, and final land use;</p> <p>(g) include interim rehabilitation where necessary to minimise the area exposed for dust generation;</p> <p>(h) include a program to monitor, independently audit and report on the effectiveness of the measures, and progress against the detailed performance and completion criteria; and</p> <p>(i) build to the maximum extent practicable on the other management plans required under this approval.</p>	<ul style="list-style-type: none"> • Letter to MWRC re Rehabilitation Management Plan Input, 31 Mar 2015 • Letter to Executive Director, Mineral Resources, re Rehabilitation Management Plan, 31 Mar 2015 • Letter to CCC re Rehabilitation Management Plan Input, 31 Mar 2015 • Mining Operations Plan (MOP) Guidelines, DRE, 2013 	<p>comments in August 2015. The Rehabilitation Management Plan includes:</p> <p>(a) section 1.3 outlines consultation with the DP&E, NOW, OEH, Mid-Western Regional Council and the CCC;</p> <p>(b) the Rehabilitation Management Plan was submitted to the Executive Director, Mineral Resources by 31 March 2015;</p> <p>(c) was prepared in accordance with DRE guideline ESG3 section 7.2 and 8;</p> <p>(c1) section 11.3 provides for periodic review and updating of the rehabilitation plan and management strategies to ensure best practice landform design and establishment strategies are employed</p> <p>(d) section 4.9 describes how the rehabilitation of the site would be integrated with the implementation the biodiversity offset strategy;</p> <p>(e) section 6 Tables 13, 14 and 15 address performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);</p> <p>(f) Section 4 to 9 describe the measures to be implemented to ensure compliance with the relevant conditions of this approval addressing all aspects of rehabilitation and section 11.3 and 11.4 outline review and revision requirements. Section 12 addresses mine closure, final landform, and final land use;</p> <p>(g) section 4.7 includes interim rehabilitation where necessary to minimise the area exposed for dust generation;</p> <p>(h) section 7 provides a program to monitor, independently audit and section 11 addresses reporting on the effectiveness of the measures, and progress against the detailed performance and completion criteria; and</p> <p>(i) The Biodiversity Management Plan, Water Management Plan and Rehabilitation Management Plan are cross referenced where relevant to reduce unnecessary duplication.</p>	

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
	The Drip			
69	<p>Notwithstanding the approval of Modification 9, there is to be no extraction of the additional coal resource approved under Modification 9 until the land tenure and surrounds associated with the natural feature known as 'the Drip' is resolved to ensure its conservation to the satisfaction of the Secretary and the Office of Environment and Heritage.</p> <p>This does not prohibit the implementation of the components for Modification 9 including construction and operation the approved water management infrastructure upgrade works.</p>	<ul style="list-style-type: none"> • <i>Deed for the Protection of The Drip</i>, 5 Mar 2015 • Letter to DP&E and OEH re Deed for Protection of The Drip, 6 Mar 2015 • Letter from DP&E re The Drip, 13 Mar 2015 • Letter from OEH re The Drip, 13 Mar 2015 	A ' <i>Deed for the Protection of The Drip</i> ' was submitted to the DP&E on 6 March 2015 in relation to the land tenure and surrounds associated with the natural feature known as 'the Drip' to ensure its conservation. DP&E responded on 13 March 2015 ' <i>that the matters referred to in Condition 69 would be resolved upon the Deed having effect.</i> '	Compliant
	GREENHOUSE GAS			
	Energy Savings Action Plan			
70	<p>The Proponent shall prepare and implement an updated Energy Savings Action Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with NOW;</p> <p>(b) be prepared in accordance with the Guidelines for Energy Savings Action Plans (DEUS 2005, or its latest version);</p> <p>(c) be submitted to the Secretary for approval; and</p> <p>(d) include an updated program to monitor the effectiveness of measures to reduce energy use on site.</p>	<ul style="list-style-type: none"> • <i>Energy Savings Action Plan, Dec 2008</i> • <i>Guidelines for Energy Savings Action Plans, DEUS 2005</i> 	<p>(a) An Energy Savings Action Plan (ESAP) was prepared prior to the commencement of construction activities and approved by DoP in December 2008.</p> <p>(b) Energy Savings Action Plan Section 1.0 references the Guidelines for Energy Savings Action Plans (DEUS 2005).</p> <p>(c) The Energy Savings Action Plan was submitted to the DoP in December 2008;</p> <p>(d) No update of the program to reduce energy use on the site has occurred since 2008. A review of the existing Energy Savings Action Plan should be conducted to identify energy saving actions that can be introduced as an improvement opportunity in relation to the maintenance and operation of the vehicle fleet and other mining equipment currently operating at the mine with the commencement of Stage 2 OC4 operations.</p>	Compliant
	Gas Drainage			
71	The Proponent shall implement all reasonable and feasible measures to minimise the greenhouse gas emissions from the underground mining operations to the satisfaction of the Secretary.		No underground mining had commenced at the date of this audit (December 2015).	Not triggered
72	Prior to carrying out underground mining operations, the Proponent shall submit an updated Greenhouse Gas Minimisation Plan to the Secretary. This plan must:	???? <i>Greenhouse Gas Minimisation Plan</i>	No underground mining had commenced at the Moolarben Coal Complex site at the date of this audit (December 2015).	Not triggered

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	(a) identify options for minimising greenhouse gas emissions from underground mining operations, with a particular focus on capturing and/or using these emissions; (b) investigate the feasibility of implementing each option; (c) propose the measures that would be implemented in the short to medium term on site; and (d) include a research program to inform the continuous improvement of the greenhouse gas minimisation measures on site.																							
	SUBSIDENCE																							
73	The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 14, to the satisfaction of the Secretary. <i>Table 14: Subsidence Impact Performance Measures</i> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: left;">Special Feature</td> </tr> <tr> <td style="width: 50%;">The Drip</td> <td>Nil impact or environmental consequences</td> </tr> <tr> <td colspan="2" style="text-align: left;">Water Resources</td> </tr> <tr> <td>Goulburn River and the bed of the Goulburn River</td> <td>Negligible impact or environmental consequences</td> </tr> <tr> <td colspan="2" style="text-align: left;">Land</td> </tr> <tr> <td>Cliff Line 3</td> <td>See condition 26</td> </tr> <tr> <td colspan="2" style="text-align: left;">Heritage sites</td> </tr> <tr> <td>Aboriginal heritage sites 264, 280, 282, 283, 286 and 287 See condition 26 Historic heritage sites</td> <td>See condition 26. No greater subsidence impact or environmental consequences than predicted in the EA</td> </tr> <tr> <td colspan="2" style="text-align: left;">Mine workings</td> </tr> <tr> <td>First workings under an approved Extraction Plan beneath any feature where performance measures in this table require negligible impact, negligible consequence or negligible loss Second working</td> <td> To remain long-term stable and non-subsiding. To be carried out only within the longwall mining domains, in accordance </td> </tr> </table>	Special Feature		The Drip	Nil impact or environmental consequences	Water Resources		Goulburn River and the bed of the Goulburn River	Negligible impact or environmental consequences	Land		Cliff Line 3	See condition 26	Heritage sites		Aboriginal heritage sites 264, 280, 282, 283, 286 and 287 See condition 26 Historic heritage sites	See condition 26. No greater subsidence impact or environmental consequences than predicted in the EA	Mine workings		First workings under an approved Extraction Plan beneath any feature where performance measures in this table require negligible impact, negligible consequence or negligible loss Second working	To remain long-term stable and non-subsiding. To be carried out only within the longwall mining domains, in accordance		No underground mining had commenced at the date of this audit (December 2015)	Not triggered
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	<div style="border: 1px solid black; padding: 2px; display: inline-block;">with an approved Extraction Plan.</div> <p><i>Notes: • The locations of the features referred to in Table 14 are shown in Appendix 7. • The Proponent will be required to define more detailed performance indicators (including impact assessment criteria) for each of these performance measures in the various management plans that are required under this approval. • Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter. • The requirements of this condition only apply to the impacts and consequences of mining operations, construction or demolition undertaken following the date of this approval</i></p>			
	Offsets			
74	<p>If the Proponent exceeds the performance measures in Table 14 and the Secretary determines that:</p> <p>(a) it is not reasonable or feasible to remediate the impact or environmental consequence; or</p> <p>(b) remediation measures implemented by the Proponent have failed to satisfactorily remediate the impact or environmental consequence; then the Proponent shall provide a suitable offset to compensate for the impact or environmental consequence, to the satisfaction of the Secretary.</p> <p><i>Note: Any offset required under this condition must be proportionate with the significance of the impact or environmental consequence. Impacts to the Drip cannot be offset and consequently the proponent shall ensure that the project has no impact on the Drip or the water supply to the Drip.</i></p>	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 4 condition 2 		Not triggered
	Performance Measures – Built Features			
75	<p>The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 15, to the satisfaction of the Secretary.</p> <p><i>Table 15: Subsidence Impact Performance Measures – Built Features</i></p>		No underground mining had commenced at the date of this audit (December 2015)	Not triggered

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	<table border="1" style="width: 100%;"> <tr> <td colspan="2" style="text-align: center;">Key Public Infrastructure</td> </tr> <tr> <td style="width: 30%;">Gulgong-Sandy Hollow Railway Line Wollar/Wellington 330kV Transmission Line</td> <td>Always safe and serviceable. Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired</td> </tr> <tr> <td colspan="2" style="text-align: center;">Other Infrastructure</td> </tr> <tr> <td>Roads</td> <td>Safe, serviceable and repairable unless the owner agrees otherwise in writing</td> </tr> <tr> <td>Other built features and improvements, including fences</td> <td>including fences Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.</td> </tr> <tr> <td colspan="2" style="text-align: center;">Public Safety</td> </tr> <tr> <td>Public safety</td> <td>including fences Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.</td> </tr> </table> <p><i>Notes:</i></p> <ul style="list-style-type: none"> • The locations of the features referred to in Table 15 are shown in Appendix 7. • The Proponent will be required to define more detailed performance indicators for each of these performance measures in Built Features Management Plans or Public Safety Management Plan (see condition 74 below). • Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the 	Key Public Infrastructure		Gulgong-Sandy Hollow Railway Line Wollar/Wellington 330kV Transmission Line	Always safe and serviceable. Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired	Other Infrastructure		Roads	Safe, serviceable and repairable unless the owner agrees otherwise in writing	Other built features and improvements, including fences	including fences Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.	Public Safety		Public safety	including fences Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.			
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	<p><i>event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter.</i></p> <ul style="list-style-type: none"> • <i>The requirements of this condition only apply to the impacts and consequences of mining operations undertaken following the date of this approval.</i> • <i>Requirements under this condition may be met by measures undertaken in accordance with the Mine Subsidence Compensation Act 1961.</i> • <i>Requirements regarding safety or serviceability do not prevent preventative or mitigatory actions being taken prior to or during mining in order to achieve or maintain these outcomes.</i> 			
76	<p>Any dispute between the Proponent and the owner of any built feature over the interpretation, application or implementation of the performance measures in Table 15 is to be settled by the Secretary, following consultation with the Executive Director Mineral Resources. Any decision by the Secretary shall be final and not subject to further dispute resolution under this approval</p>			Noted
	Extraction Plan			
77	<p>The Proponent shall prepare and implement an Extraction Plan for all second workings on site to the satisfaction of the Secretary. Each extraction plan must: (a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary; (b) be approved by the Secretary before the Proponent carries out any of the second workings covered by the plan; (c) include detailed plans of existing and proposed first and second workings and any associated surface development; (d) include detailed performance indicators for each of the performance measures in Tables 14 and 15; (e) provide revised predictions of the potential subsidence effects, subsidence impacts and environmental consequences of the proposed second workings, incorporating any relevant information obtained since this approval; (f) describe the measures that would be implemented to ensure compliance with the performance measures in Tables 14 and 15, and manage or remediate any impacts and/or environmental consequences; (g) include a Built Features Management Plan, which has been prepared in consultation with DRE and the owners of affected public infrastructure, to manage the potential subsidence impacts and/or environmental consequences of the proposed second workings, and which: i. addresses in appropriate detail all</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 4 condition 5 	<p>No underground mining has commenced at the date of this audit (December 2015). The development of the Extraction Plan and associated supplementary management Plans is scheduled to occur during 2016 for approval prior to commencement of any second workings.</p>	Not triggered

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	<p>items of key public infrastructure and other public infrastructure and all classes of other built features; ii. has been prepared following appropriate consultation with the owner/s of potentially affected feature/s; iii. recommends appropriate remedial measures and includes commitments to mitigate, repair, replace or compensate all predicted impacts on potentially affected built features in a timely manner; and iv. in the case of all key public infrastructure, and other public infrastructure except roads, trails and associated structures, reports external auditing for compliance with ISO 31000 (or alternative standard agreed with the infrastructure owner) and provides for annual auditing of compliance and effectiveness during extraction of longwalls which may impact the infrastructure; (h) include a Water Management Plan, which has been prepared in consultation with EPA and NOW, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on watercourses and aquifers, including: i. surface and groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse impacts on water resources or water quality; ii. a program to monitor and report stream flows, assess any changes resulting from subsidence impacts and remediate and improve stream stability; iii. a program to monitor and report groundwater inflows to underground workings; iv. a program to predict, manage and monitor impacts on groundwater bores on privately owned land; and (i) include a Biodiversity Management Plan, which has been prepared in consultation with OEH, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on aquatic and terrestrial flora and fauna, with a specific focus on threatened species, populations and their habitats; endangered ecological communities; and water dependent ecosystems; (j) include a Land Management Plan, which has been prepared in consultation with any affected public authorities, to manage the potential impacts and/or environmental consequences of the proposed second workings on land in general; (k) include a Heritage Management Plan, which has been prepared in consultation with OEH and relevant stakeholders for both Aboriginal and historic heritage, to manage the potential environmental consequences of the proposed second workings on both Aboriginal and non-Aboriginal heritage items, and reflects all requirements under conditions 38-39 of schedule 3; (l) include a Public Safety Management Plan, which has been</p>			

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	<p>prepared in consultation with DRE, to ensure public safety in the mining area; (m) include the Subsidence Management Plan required in condition 27 and a Subsidence Monitoring Program, which has been prepared in consultation with DRE, to:</p> <ul style="list-style-type: none"> i. describe the on-going subsidence monitoring program; ii. provide data to assist with the management of the risks associated with subsidence; iii. validate the subsidence predictions; iv. analyse the relationship between the predicted and resulting subsidence effects and predicted and resulting impacts under the plan and any ensuing environmental consequences; v. inform the contingency plan and adaptive management process; and vi. inform the End-of-Panel report required in condition 28; <p>(n) include a contingency plan that expressly provides for adaptive management where monitoring indicates that there has been an exceedance of any performance measure in Tables 14 and 15, or where any such exceedance appears likely; (o) proposes appropriate revisions to the Rehabilitation Management Plan required under condition 68 of Schedule 3; and</p> <p>p) include a program to collect sufficient baseline data for future Extraction Plans.</p> <p>Note: To identify the longwall mining domains referred to in this condition, see Appendix 2.</p>			
78	<p>The Proponent shall ensure that the management plans required under conditions 77(g)-(l) above include:</p> <ul style="list-style-type: none"> (a) an assessment of the potential environmental consequences of the Extraction Plan, incorporating any relevant information that has been obtained since this approval; and (b) a detailed description of the measures that would be implemented to remediate predicted impacts 	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 4 condition 6 		Noted
	First Workings			
79	<p>The Proponent may carry out first workings on site other than in accordance with an approved Extraction Plan, provided that DRE is satisfied that the first workings are designed to remain long-term stable and non-subsiding, except insofar as they may be impacted by approved second workings</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 4 condition 7 		Noted
	Payment of Reasonable Costs			
80	<p>The Proponent shall pay all reasonable costs incurred by the department to engage suitably qualified, experienced and</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 4 condition 8 		Noted

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	independent experts to review the adequacy of any aspect of an Extraction Plan			
	SCHEDULE 4 ADDITIONAL PROCEDURES			
	NOTIFICATION OF LANDOWNERS/TENANTS			
1	<p>By the end of March 2015, the Proponent shall:</p> <p>(a) notify in writing the owners of: (a) any land in Table 1A and any land or residence exceeding the criteria in Tables 2A and 2 (respectively) of Schedule 3 that they have the right to require the Proponent to acquire their land at any stage during the project;</p> <p>(b) any residence on the land listed in Table 3 and any residence exceeding the criteria in Table 3A of Schedule 3 that they have the right to request the Proponent for additional noise mitigation measures to be installed at their residence at any stage during the project; and</p> <p>• any privately-owned land within 2 kilometres of the approved open cut mining pit/s that they are entitled to ask for an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous property inspection report updated; (b) notify the tenants of any mine-owned land of their rights under this approval; and (c) send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the owners and/or existing tenants of any land (including mine-owned land) where the predictions in the EA identify that dust emissions generated by the project are likely to be greater than the relevant air quality criteria in Schedule 3 at any time during the life of the project</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 5 condition 1 • Letters to Notify Property Owners re Rights under this Approval for Noise Mitigation, Dust, and Property Inspections, Feb 2015 • Blast Management Plan, section 6.2, May 2015 • Air Quality Management Plan, Version 3, section 11.2, Jul 2015 	Notification of owners in Table 1A and Tables 2A and 2, Table 3 and 3A of this approval (05_0117) occurred in February 2015 following granting of the Project Approval of Stage 2 (08_0135) in relation to their rights under this approval for noise mitigation, dust, and property inspections.	Compliant
2	Prior to entering into any tenancy agreement for any land owned by the Proponent that is predicted to experience exceedances of the recommended dust and/or noise criteria, or for any of the land listed in Table 3 that is subsequently purchased by the Proponent, the Proponent shall: (a) advise the prospective tenants of the potential health and amenity impacts associated with living on the land, and give them a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time); and (b) advise the prospective tenants of the rights they would have under this approval, to the satisfaction of the Secretary.	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 5 condition 2 • Air Quality Management Plan, Version 3, section 11.2, Jul 2015 		Noted
3	As soon as practicable after obtaining monitoring results showing: (a) an exceedance of any relevant criteria in Schedule 3, the Proponent shall notify affected landowners in writing of the exceedance, and provide regular monitoring	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 5 condition 3 • Blast Management Plan, section 9 and 11 		Noted

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	results to each affected landowner until the project is again complying with the relevant criteria; and (b) an exceedance of the relevant air quality criteria in Schedule 3, the Proponent shall send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land).	<ul style="list-style-type: none"> Air Quality Management Plan, Version 3, section 11.2, Jul 2015 		
	INDEPENDENT REVIEW			
4	<p>If an owner of privately-owned land considers the project to be exceeding the criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land.</p> <p>If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Proponent shall: (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to: • consult with the landowner to determine his/her concerns; • conduct monitoring to determine whether the project is complying with the relevant impact assessment criteria in Schedule 3; and • if the project is not complying with these criteria then: o determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine regarding the impact on the land; o identify the measures that could be implemented to ensure compliance with the relevant criteria; and (b) give the Secretary and landowner a copy of the independent review.</p>	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 5 condition 4 		Noted
5 to 9	(deleted)			
10	Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on: (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 project, having regard to the: • existing and permissible use of the land, in accordance with the applicable 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, but excluding any improvements that have resulted from the implementation of the additional noise and/or air quality mitigation measures in conditions 4 and 5 of Schedule 3; (b) the reasonable costs associated with: •	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 5 condition 5 		Not triggered

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	<p>relocating within the Mid-western Regional local government area, or to any other local government area determined by the Secretary; and</p> <ul style="list-style-type: none"> • obtaining legal advice 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. <p>However, if at the end of this period, the Proponent 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 Secretary for resolution.</p> <p>Upon receiving such a request, the Secretary will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to:</p> <ul style="list-style-type: none"> • consider submissions from both parties; • determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above; • prepare a detailed report setting out the reasons for any determination; and • provide a copy of the report to both parties. <p>Within 14 days of receiving the independent valuer's report, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination. However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions.</p> <p>Within 14 days of this determination, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination. If the landowner refuses to accept the Proponent's binding written offer under this condition within 6 months of the offer being made, then the Proponent's obligations to acquire the land shall cease, unless the Secretary determines otherwise.</p>			

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11	The Proponent shall pay all reasonable costs associated with the land acquisition process described in condition 10 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 5 condition 6 		Noted
	SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, AUDITING AND REPORTING			
	ENVIRONMENTAL MANAGEMENT			
	Environmental Management Strategy			
1	<p>The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must:</p> <p>(a) be submitted to the Secretary for approval within 6 months of the date of this approval;</p> <p>(b) provide the strategic framework for environmental management of the project;</p> <p>(c) identify the statutory approvals that apply to the project;</p> <p>(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;</p> <p>(e) describe the procedures that would be implemented to:</p> <ul style="list-style-type: none"> keep the local community and relevant agencies informed about the operation and environmental performance of the project; receive, handle, respond to, and record complaints; resolve any disputes that may arise; respond to any non-compliance; respond to emergencies; and <p>(f) include:</p> <ul style="list-style-type: none"> copies of any strategies, plans and programs approved under the conditions of this approval; and a clear plan depicting all the monitoring to be carried out in relation to the project 	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 6 condition 1 Environmental Management Strategy, Mar 2015 Letter from DP&E re Approval of Environmental Management Strategy, 31 Jul 2015 	<p>An Environmental Management Strategy was prepared to satisfy Project Approval 05_0117 Schedule 5 condition 1 in December 2008 prior to construction commencing. The Environmental Management Strategy was updated in June 2013 and Version 3 in March 2015 to include management and mitigation measures for both Stage 1 and Stage 2. The Environmental Management Strategy:</p> <p>(a) was submitted to the Secretary for approval within 6 months of the date of this approval;</p> <p>(b) provide the strategic framework for environmental management of the project;</p> <p>(c) section 4 identifies the statutory approvals that apply to the project;</p> <p>(d) section 5.1 and Appendix E describe role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;</p> <p>(e) describe the procedures that would be implemented to section 5.3 describes information dissemination to keep the local community and relevant agencies informed about the operation and environmental performance of the project; section 5.4 outlines the procedures for receipt, handling, response, and recording of complaints; section 6.2 addresses resolve any disputes that may arise; • response to any non-compliance; • sections 5.2 and 6.3 address response to incidents / emergencies; and</p>	Compliant

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Condition No.	Project Approval 05_0117 Condition	Verification	Comments	Compliance
			(f) include reference to all strategies, plans and programs approved under the conditions of this approval in section 2 and Table 4; and a clear plan depicting all the monitoring to be carried out in relation to the project in section 6 and EMP's.	
	Adaptive Management			
2	<p>The Proponent must assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this approval and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.</p> <p>Where any exceedance of these criteria and/or performance measures has occurred, the Proponent must:</p> <p>(a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;</p> <p>(b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and</p> <p>(c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.</p>	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 5 condition 2 	<p>Where rehabilitation monitoring results indicate the potential for rehabilitation failure, MCO will undertake a preliminary review of all site monitoring data to determine the extent and causes of the unsatisfactory performance. MCO will review the rehabilitation monitoring results, active mining records (including weather records) and rehabilitation methodology records to identify possible relationships between rehabilitation monitoring results, site conditions and rehabilitation practices.</p> <p>Additional site investigations may be required if the contributing factors, and extent of rehabilitation failure are not clearly understood using the annual rehabilitation monitoring results.</p>	Ongoing
	Management Plan Requirements			
3	<p>The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:</p> <p>(a) detailed baseline data;</p> <p>(b) a description of:</p> <ul style="list-style-type: none"> the relevant statutory requirements (including any relevant approval, licence or lease conditions); any relevant limits or performance measures/criteria; the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; <p>(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</p> <p>(d) a program to monitor and report on the:</p> <ul style="list-style-type: none"> impacts and environmental performance of the project; 	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 6 condition 3 Heritage Management Plan, Version 4, Jun 2015 Air Quality Management Plan, version 3, Jul 2015 Blast Management Plan, Version 4 May 2015 Blast Fume Management Strategy Environmental Management Strategy, Version 3, Mar 2015 Landscape Management Plan, Version 2, June 2013 Noise Management Plan, Version 3 May 2015 	<p>Refer to Independent Environmental Audit Report section 5.2:</p> <p>Management plans developed for the Moolarben Coal Complex (i.e. Stage 1 and Stage 2) and approved by DP&E have been prepared general accordance with this condition:</p> <p>(a) detailed baseline data is provided in the relevant plans and Environmental Assessments;</p> <p>(b) relevant statutory requirements (including any relevant approval, licence or lease conditions) are provided in section 2 of the majority of the plans, and relevant limits and specific performance and management measures/criteria are provided in sections 3 and 4;</p> <p>(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance</p>	Compliant

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	<ul style="list-style-type: none"> • effectiveness of any management measures (see c above); (e) a contingency plan to manage any unpredicted impacts and their consequences; (f) a program to investigate and implement ways to improve the environmental performance of the project over time; (g) a protocol for managing and reporting any: <ul style="list-style-type: none"> • incidents; • complaints; non-compliances with statutory requirements; and • non-compliances with statutory requirements; and exceedances of the impact assessment criteria and/or performance criteria; and (h) a protocol for periodic review of the plan. 	<ul style="list-style-type: none"> • Rehabilitation Management Plan, Version 3, Aug 2015 • Waste Management Plan • Water Management Plan, Version 3 Jul 2015 • Biodiversity Management Plan, Version 1, May 2015 • Biodiversity Offset Management Plan, Version 1 Dec 2014 	<p>measures/criteria are generally provided in sections 6 and 7;</p> <p>(d) monitoring programs and reporting are generally covered in section 7 and 8 in relation to environmental performance of the project and effectiveness of any management measures;</p> <p>(e) contingency plan to manage any unpredicted impacts and their consequences are presented in section 9 or 11;</p> <p>(f) investigation and implementation of ways to improve the environmental performance of the project over time are presented in section 10 and the AEMR's;</p> <p>(g) the protocols for managing and reporting incidents, complaints; non-compliances with statutory requirements; and exceedances of the impact assessment criteria and/or performance criteria is outlined in sections 7, 8, and/or 11; and</p> <p>(h) periodic review of the plans is addressed in section 10 and the EMS.</p>	
	Annual Review			
4	<p>By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:</p> <p>(a) describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the next year;</p> <p>(b) include a comprehensive review of the monitoring results and complaints records of the project over the previous calendar year, which includes a comparison of these results against the • the relevant statutory requirements, limits or performance measures/criteria; • the monitoring results of previous years; and • the relevant predictions in the EA;</p> <p>(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>(d) identify any trends in the monitoring data over the life of the project;</p> <p>(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and</p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 6 condition 4 • 2012 – 2013 Annual Environmental Management Report • 2013 - 2014 Annual Environmental Management Report 	<p>An annual review (entitled Annual Environmental Management Report (AEMR)) was prepared for the period 1 September 2012 to 31 August 2013, and 1 September 2013 to 31 December 2014 for the Moolarben Coal Project. The AEMR reviewed the environmental performance of the project:</p> <p>(a) section 2 describes the development carried out between September 2013 and 31 December 2014 and section 6 outlines the development activities proposed to for the next 12 months;</p> <p>(b) section 3 presents a comprehensive review of the monitoring results and complaints for the project and includes a comparison of these results against statutory requirements, limits or performance measures/criteria, relevant predictions and monitoring results of previous reporting period;</p> <p>(c) section 3 also identifies any non-compliance and describes what actions were taken;</p> <p>(d) trends in the monitoring data are described under each environmental aspect in section 3;</p>	Compliant

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	(f) describe what measures will be implemented over the next year to improve the environmental performance of the project.		(e) section 3 also identifies any discrepancies between the predicted and actual impacts of the project, and discusses the potential cause of any significant discrepancies; and (f) section 6 describes measures to be implemented to improve the environmental performance of the project.	
	Revision of Strategies, Plans and Programs			
5	<p>Within 3 months of the submission of:</p> <p>(a) the submission for annual review under condition 4 above;</p> <p>(b) the submission for incident report under condition 7 below;</p> <p>(c) the submission for audit under condition 9 below; or</p> <p>(d) any modification of this approval, the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within four weeks of the review the revised document must be submitted to the Secretary for approval.</p> <p><i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.</i></p>	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 6 condition 5 	<p>Review, revision and approval of changes to the strategy, management plans and monitoring program developed for this Project Approval have been undertaken as required between January 2013 and December 2015 following submission of the AEMR's, audits, and/or Modifications to the Moolarben Coal Complex project to ensure that documents are representative of the current project and operations.</p>	Compliant Ongoing
	Community Consultative Committee			
6	<p>The Proponent shall operate a Community Consultative Committee (CCC) for the Moolarben mine complex to the satisfaction of the Secretary. 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).</p> <p><i>Notes: • The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval; and • The CCC should be comprised of an independent chair and appropriate representation from the Proponent, Council, recognised environmental groups and the local community.</i></p>	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 6 condition 6 Meeting 29 - 10th December 2013 Meeting 30 - 1st April 2014 Meeting 31 - 1st July 2014 Meeting 32 - 25th November 2014 Meeting 33 - 6th May 2015 Meeting 34 - 4th August 2015 Meeting 35 - 10th November 2015 	<p>The Community Consultative Committee (CCC) for the Moolarben Coal Project was established for Stage 1 and re-established for the Moolarben Coal Complex to the satisfaction of the Secretary. This CCC is operated in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007).</p> <p>Minutes of recent meetings (December 2013 to November 2015) were reviewed during the audit.</p> <p>Meetings have been held each three to four months with the most recent meeting being held in November 2015. Minutes of CCC meetings are available on the Moolarben Coal website.</p>	Compliant Ongoing
	REPORTING			
	Incident Reporting			

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7	The Proponent shall immediately notify the Secretary 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 project, the Proponent shall notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 6 condition 7 • Pollution Incident Response Management Plan • 2102-2013 AEMR section 3.23 • 2013-2014 AEMR section 3.24 	Reportable incidents are summarised in the AEMR's. Reports are prepared in accordance with the Pollution Incident Response Management Plan and submitted to the EPA and other relevant agencies.	Compliant Ongoing
	Regular Reporting			
8	The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.		Moolarben Coal monthly reports on environmental performance are provided on the project website in accordance with the requirement of this condition.	Compliant Ongoing
	AUDITING			
9	<p>By 31 December 2015, and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must: (a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval, and any other relevant approvals, relevant EPL/s and/or Mining Lease (including any assessment, plan or program required under these approvals); (d) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals; and (e) recommend measures or actions to improve the environmental performance of the Moolarben mine complex, and/or any strategy, plan or program required under these approvals.</p> <p><i>Note: • Notwithstanding the timing referred to above, audits must be carried out prior to the completion of longwall panels 4 and 8. The Proponent must liaise with the Department to determine the precise date of these audits. • This audit team should be led by a suitably qualified auditor, and include experts in the field of subsidence, surface water and groundwater management, noise, ecology and mine rehabilitation.</i></p>	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 6 condition 7 • Letter from DP&E re Endorsement of the Auditor and Experts for the Independent Environmental Audit, 13 Nov 2015 • Email from DP&E re Endorsement of the Auditor, Nov 2015 	<p>This Independent Environmental Audit of the Moolarben Coal Complex was commissioned by Moolarben Coal in November 2015:</p> <p>(a) the audit has been conducted by a suitably qualified, experienced and independent team of experts endorsed by DP&E on 13 November 2015: Trevor Brown – Lead Auditor Shane Lakmaker – Air Quality Fiona Robinson – Surface and Groundwater John Wasserman - Noise Michael Frankcombe – Rehabilitation Doug Williams - Heritage</p> <p>(b) consultation with the DRE, DPI-Water DP&E, EPA, OEH and Mid-Western Regional Council occurred on 14 November 2015;</p> <p>(c) the auditors assessed environmental performance of the project and compliance with the requirements in this approval, and any other relevant approvals, relevant EPL 12932 and Mining Lease environmental conditions (including assessments, plans and/or programs required under these approvals);</p> <p>(d) reviewed the adequacy of approved strategy, plans or programs required under the relevant approvals; and</p>	Compliant Ongoing

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			(e) identified and where relevant recommended measures or actions to improve the environmental performance of the Moolarben Coal Complex, and/or the strategy, plans or programs under the relevant approvals.	
10	Within 6 weeks of completing this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary with a response to any recommendations contained in the audit report.	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 6 condition 7 		Noted
	ACCESS TO INFORMATION			
11	The Proponent shall: (a) make the following information publicly available on its website: • the EA; • current statutory approvals for the project; • approved strategies, plans or programs required under the conditions of this approval; • a comprehensive summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval; • a complaints register, which is to be updated on a monthly basis; • minutes of CCC meetings; • the last five annual reviews; • any independent environmental audit, and the Proponent's response to the recommendations in any audit; • any other matter required by the Secretary; and (b) keep this information up to date, (c) investigate and report on reasonable and feasible measures to make predictive meteorological data and real time monitoring data publicly available on its website to the satisfaction of the Secretary.	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 6 condition 7 	Moolarben Coal makes the following information publicly available on its website: <ul style="list-style-type: none"> • Environmental Assessments and Modifications; • current Project Approvals and other statutory approvals for the project; • Approved Environmental Management Strategy, Environmental Management Plans and Environmental Monitoring Programs required under the conditions of this approval; • Monthly Environmental Monitoring Reports • Community Complaints Register; • CCC Meeting Minutes; • Annual Environmental Management Reports; • Independent Environmental Audit Reports; The content of the website is updated regularly to keep the information up to date.	Compliant Ongoing

Attachment B – Project Approval 05_0117

Statements of Commitment – Environmental Assessment Moolarben Coal Project 2006

SoC	Project Approval 05_0117 Statement fo Commitment	Verification	Comments	Compliance
	APPENDIX 3: STATEMENT OF COMMITMENTS			
1	<p>Protect The Drip and Goulburn River Corner Gorge The Drip and the Goulburn River Corner Gorge are shown on the plan titled "Moolarben Coal Mine – Preferred Mine Plan General Layout" contained in Appendix A9 to the "Moolarben Coal Project Response to Submissions". Moolarben will conduct its underground mining operations consistent with the Preferred Project Underground No. 4 layout to protect the Goulburn River features known as the Drip, the Goulburn River Corner Gorge and associated cliffs so that there is no damage whilst seeking to maximise recovery of coal resources and as may be required by any conditions of project approval for the Moolarben Coal Project.</p>	<ul style="list-style-type: none"> Preferred Project Report, Appendix 9 Groundwater Management Plan, Jul 2015 	<p><i>Project Approval 05_0117 Schedule 3 condition 32</i> <i>Project Approval 08_0135 Schedule 3 condition 28</i></p> <p>Groundwater monitoring program has been implemented for sandstone north and south of the Moolarben Coal site. Moolarben Coal is hydrologically isolated from The Drip. Moolarben Coal had not commenced any underground mining at the date of this audit (December 2015).</p>	Not triggered
2	<p>Shift Change Moolarben undertakes to schedule its major employee shift changes to times outside the hours of 8.15 to 9.00 am and 3.15 to 4.00 pm Monday to Friday to seek to reduce overlap of employee traffic and school transport and as may be required by any conditions of project approval for the Moolarben Coal Project.</p>	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 58 	<p>The 12hour shift changes occur at 0600-0730 hours prior to school bus hours.</p> <p>Shift changes at the adjoining Ulan and Wilpinjong mines were noted to not cause cumulative traffic impacts on the Mudgee-Ulan Road.</p>	Compliant Ongoing
3	<p>Replace Water Moolarben will compensate or replace waters (similar quality and quantity) lost by a private landholder as a consequence of the Moolarben Coal Project in accordance with the adopted protocols and procedures contained in the Moolarben Coal Project Environmental Management System and as may be required by any conditions of project approval for the Moolarben Coal Project.</p>	<ul style="list-style-type: none"> Groundwater Management Plan, Jul 2015 	<p><i>Project Approval 05_0117 Schedule 3 condition 30</i> <i>Project Approval 08_0135 Schedule 3 condition 26</i></p> <p>No local users of water had been impacted between January 2013 and December 2015.</p>	Not triggered
4	<p>Environmental Management System Moolarben will prepare and implement an Environmental Management System containing Environmental Management Plans, and Mine Operating Plan for the life of the Moolarben Coal Project consistent with the Environmental Assessment Report, the Response to Submissions Report, the Preferred Project Report, subsequent modification applications and as may be</p>	<ul style="list-style-type: none"> Environmental Management Strategy Environmental Monitoring Program Air Quality Management Plan Noise Management Plan Blast Management Plan Water Management Plan 	<p><i>Project Approval 05_0117 Schedule 5 condition 1 and 3</i> <i>Project Approval 08_0135 Schedule 6 condition 1 and 3</i></p> <p>The environmental management system for the Moolarben Coal Complex has been developed and the management Plans prepared and approved by the DP&E for Stage 2 of the project: Environmental Management Strategy Environmental Monitoring Program</p>	Compliant

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	required by any conditions of project approval for the Moolarben Coal Project.	<ul style="list-style-type: none"> • Creek and Aquatic Rehabilitation Plan • Rehabilitation Management Plan • Biodiversity Management Plan • Heritage Management Plan; • Erosion and Sediment Control Plan • Bushfire Management Plan a • Waste Management Plan 	Air Quality Management Plan Noise Management Plan Blast Management Plan Water Management Plan (including groundwater and surface water) Rehabilitation Management Plan Biodiversity Management Plan Biodiversity Offset Management Plan Heritage Management Plan; Bushfire Management Plan	
5	Noise in School Rooms Moolarben in consultation with the Ulan Public School and the Department of Education will undertake agreed works to ameliorate potential noise and dust impacts associated with the Moolarben Coal Project upon classrooms and general school operations. OR Moolarben will, should the Department of Education request, on a reasonable basis relating to the effect of noise and dust from the Moolarben Coal Project, negotiate to contribute to or meet reasonable costs toward relocating the school.		Moolarben Coal have consulted with the Ulan Public School and Department of Education in relation to dust and noise impacts attributable to the Moolarben Coal project operations. There is an amicable relationship between Moolarben Coal and the Ulan Public School and no request has been received in relation to relocation of the school.	Noted
6	Land Purchase Commitment Moolarben will accept an obligation to purchase (if so required by any affected private landholder) any land affected by operations of the Moolarben Coal Project in accordance with any requirement to do so as provided in any project approval for the Moolarben Coal Project.	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 1A/1B, 2 and 3 (noise) • Project Approval 05_0117 Schedule 3 condition 19 (air) • Project Approval 05_0117 Schedule 4 c 		Noted
7	Mine Water Sharing Plan Moolarben will seek to enter into a mine water sharing plan in respect of mining operations of the Ulan Coal Mine and Wilpinjong Coal Mine under the auspices of the Director General of the Department of Planning and as may be required by any conditions of project approval for the Moolarben Coal Project.	<ul style="list-style-type: none"> • Water Sharing Agreement between Moolarben Coal and Ulan Coal Mines, Sparkes & Holmore Lawyers, 10 Aug 2009 • Water Management Plan, Version 1, 31 Jul 2015 • Site Water Balance, Version 1, Jul 2015 	<i>Project Approval 05_0117 Schedule 3 condition 28</i> <i>Project Approval 08_0135 Schedule 3 condition 25</i> A Water Sharing Agreement between Moolarben Coal and Ulan Coal Mines provides for up to 1,000 ML/year of surplus mine water from the Ulan Mine Complex, that is obtained via a dedicated pipeline to the Moolarben Coal CHPP site dam.	Compliant Ongoing
8	Voluntary Planning Agreement Moolarben will enter into a Voluntary Planning Agreement with Mid-Western Regional Council and the Minister for Planning incorporating the principles contained in the offer by Moolarben to the Minister for Planning on 4 September 2007 to enter into the Voluntary Planning Agreement.	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 2 condition 14 and Appendix 4 	The matters set out in Project Approval 05_0117 Appendix 4 are being paid in accordance with the Voluntary Planning Agreement: Coal product transport - \$1,000,000 in three equal instalments paid over a 3year period, following first loading and dispatch of coal produced from the open cut operations from the Project.	Compliant Ongoing

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			Road Maintenance Contribution – Cope Road and Ulan Road - \$1,000,000 in three equal instalments over a 3year period, from commencement of project construction Road Maintenance Contribution – General - \$62,500 each year for a period of 20 years with the first instalment paid on the first anniversary of the first loading and dispatch of coal produced from the operations of the Project. Community Infrastructure Contribution - \$100,000 each year for of 10 years with the first instalment to be paid on the first anniversary of the first loading and dispatch of coal produced from the operations of the Project.	
9	Employ Local People Moolarben will, wherever possible and feasible, employ appropriately qualified persons residing within the local area			Noted
10	Traineeships Moolarben will provide traineeships for the youth of the local community.			Noted
11	Dronvisa Quarry Moolarben will seek to enter into an operational agreement with Dronvisa Quarry with regard to the safe continuation of its operations in conjunction with underground mining.		No underground mining had occurred at the Moolarben Complex site at the date of this audit.	Noted
12	Ecology Moolarben will enter into such arrangements as may be required by the Secretary to provide for ecological offsets as proposed in the Environmental Assessment, Preferred Project Report, subsequent modification applications and as may be required by any conditions of project approval for the Moolarben Coal Project.	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 38 Letter to DP&E re Project Approval 05_0117 Schedule 3 condition 35 for Extension of Submission of the Long Term Security Offset, 8 Dec 2015 	Arrangements to provide long-term security for the offset areas described in Project Approval 05_0117 Schedule 3 condition 35 - Table 12 have been developed in consultation with OEH (NWPS). The documentation has been prepared by Moolarben Coal and was submitted to the Secretary for approval in December 2015. Moolarben Coal requested DP&E for an extension for the submission of the arrangements for long term security of the offsets to 31 March 2016, in correspondence on 8 December 2015.	Ongoing
13	Flows in the Goulburn River – Co-operative Monitoring Program Moolarben will use its reasonable endeavours to agree and implement a monitoring program in cooperation with the Ulan and Wilpinjong mines (and to the reasonable requirement of the Director General who will consult with the NOW) to identify any potential for any change in the water flows in the Goulburn River due to mining at the Moolarben, Ulan and Wilpinjong mines and as may be required by any	<ul style="list-style-type: none"> Water Management Plan section 2.4.4, 31 Jul 2015 Data Sharing Deed, 27 Mar 2012 Joint Mines Consultation Commitments, 29 Oct 2015 	<i>Project Approval 05_0117 Schedule 3 condition 33(b)(iv)</i> <i>Project Approval 08_0135 Schedule 3 condition 29(e)(iv)</i> A Data Sharing Deed signed on 27 March 2012 provides the protocol for sharing of environmental monitoring data between Moolarben Coal, Ulan Coal and Wilpinjong Coal, including access to flow data when required. Flow monitoring is carried out by Ulan Coal at Goulburn River and Moolarben Creek, and additional flow	Compliant Ongoing

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	conditions of project approval for the Moolarben Coal Project.		monitoring in Wilpinjong Creek downstream of the Moolarben Coal is carried out by the Wilpinjong Coal. Monitoring results presented in AEMRs and monthly monitoring reports.	
14	Mine Water Management and Salinity – Sharing with Ulan and Wilpinjong Moolarben will use its reasonable endeavours to agree and implement a co-operative arrangement with and enter into a life of mine agreement between the Ulan and Wilpinjong mines (the “Mines”) to establish, implement and operate water sharing and use plans and procedures with the objective of minimising the removal by the Mines of water from the environment and the discharge of minewaters by the Mines to the environment and which shall address the ability of the Mines to utilise mine water produced by the Mines between the Mines and as may be required by any conditions of project approval for the Moolarben Coal Project.	<ul style="list-style-type: none"> Water Sharing Agreement between Moolarben Coal and Ulan Coal Mines, Sparkes & Holmore Lawyers, 10 Aug 2009 Water Management Plan, Version 1, 31 Jul 2015 Site Water Balance, Version 1, Jul 2015 	<i>Project Approval 05_0117 Schedule 3 condition 28</i> <i>Project Approval 08_0135 Schedule 3 condition 25</i> A Water Sharing Agreement between Moolarben Coal and Ulan Coal Mines provides for up to 1,000 ML/year of surplus mine water from the Ulan Mine Complex, that is obtained via a dedicated pipeline to the Moolarben Coal CHPP site dam.	Compliant Ongoing
15	Salinity Off Sets Bobadeen Irrigation Scheme (“BIS”) - Salinity Offset Management Plan (“SOMP”) In the event that the Moolarben Coal Project reduces the capacity for the removal of salt from the Salinty Offset Management Plan area operated by Ulan Mine in conjunction with the Bobadeen Irrigation Scheme under Environment Protection Licence 394, then Moolarben will, at its election, either: • take from Ulan that volume of water that would otherwise have been used in the BIS; OR • provide an area of land with equivalent salt removal capacity; and • any disputed issue will be determined by an appropriately qualified expert agreed between Moolarben and Ulan and in default appointed by the Director General of Planning.		The Water Sharing Agreement between Moolarben Coal and Ulan Coal Mines provides for up to 1,000 ML/year of surplus mine water from the Ulan Mine Complex, to be available to Moolarben Coal via a dedicated pipeline to the Moolarben Coal CHPP site dam.	Noted
16	Haulage of Coal to the West by Rail Prior to the haulage of coal by rail to the west of the Moolarben Coal Project, Moolarben shall notify the Secretary with details of expected tonnages, train size and rail scheduling and where practicable schedule rail haulage during daylight hours only through the town of Mudgee as may otherwise be required by any conditions of project approval for the Moolarben Coal Project		No haulage of coal by rail to the west has occurred between January 2013 and December 2015.	Not triggered
17	Traffic Management Mid-Western Regional Council Moolarben acknowledges the need for it to contribute to the upgrade and maintenance of aspects of the local road system affected	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 2 condition 14 and Appendix 4 	Moolarben Coal, Mid-Western Regional Council and the owners of the Ulan and Wilpinjong mines to agree to develop a detailed plan for the implementation of the Ulan Road Strategy. A Deed of Agreement for Funding and	Compliant Ongoing

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	by the operation of the Moolarben Coal Project and commits to implement the Voluntary Planning Agreement in satisfaction of the principles of that agreement.	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 56 	<p>delivery of the Ulan Road Upgrade was signed by Moolarben Coal, Ulan Coal, Wilpinjong Coal and the Mid-Western Regional Council in July 2014.</p> <p>Financial contributions towards the implementation of the Ulan Road Strategy occurs in accordance with the requirements in the Deed of Agreement dated July 2014.</p>	
	Additional Management and Mitigation			
	Modification of Stage 1 Moolarben commits to implementing the following management and mitigation measures to ensure that impacts associated with modifications to the Moolarben Coal Project are minimised:			
18 Air Quality	<p>Air Quality</p> <ul style="list-style-type: none"> Management and monitoring of air quality will continue to be undertaken in accordance with the best management practices set out in an approved Air Quality Management Plan. Dust control measures will be used on internal haul roads. Raw coal transfer and rejects conveyors will be partially enclosed. Dust sprays will be fitted to the dump hopper. Water carts will be used to minimise dust generation from unsealed access tracks and construction areas, where required. A TEOM will be located to the southwest of the project to enable pro-active dust management and compliance monitoring for private residences to the south of the project prior to mining in Open Cut 2. Use of a TEOM located to the northeast of the project for measuring background dust levels. MCO will continue to report annually in the AEMR, the total amount of greenhouse gas emissions from the MCP and the effectiveness of measures implemented to achieve energy savings. 	<ul style="list-style-type: none"> Air Quality Management Plan, Jul 2015 	<ul style="list-style-type: none"> Air quality management and monitoring is conducted in accordance with approved Air Quality Management Plan. All haulage roads are designated, and road surfaces are watered to manage dust generation. Dust curtains and sprays have been installed inside hoppers to manage dust generation during dumping of ROM coal into the hoppers. The hoppers are enclosed on three sides and roof and transfer points are also covered. Dust generated by truck haulage is managed with truck operators encouraged to radio directly to the water carts for application affected roads. Three TEOM have been installed around the MCP site: Murragamba, Ridge Road, Ulan School, and on Ulan Road. northeast of the project for measuring background dust levels. MCO reports annually in the AEMR, Greenhouse gas emissions from the MCP and energy savings are reported annually. 	Compliant Ongoing
18 Noise	<p>Noise</p> <ul style="list-style-type: none"> Management and monitoring of noise will continue to be undertaken in accordance with an approved Noise Management Plan, including proactive and reactive management. MCO further commits to: <ul style="list-style-type: none"> Limiting northern borefield construction hours from 7am to 6pm Monday to Friday (inclusive). Limiting surface water management infrastructure upgrade construction hours from 7:00am to 5:00pm Monday to Saturday (inclusive). Fitting haul trucks with noise attenuation equipment to meet sound power levels assumed in the Stage 1 EA and subsequent noise Impact assessments - Specifying sound 	<ul style="list-style-type: none"> Noise Management Plan, section 7, May 2015 	<ul style="list-style-type: none"> Management and monitoring of noise is conducted undertaken in accordance with the approved Noise Management Plan. MCO further commits to: <ul style="list-style-type: none"> Northern borefield construction hours would be limited to 7am to 6pm Monday to Friday. Surface water management infrastructure upgrade construction hours are from 7:00am to 5:00pm Monday to Saturday. Haul trucks have been fitted with noise attenuation equipment to meet sound power levels assumed in the noise Impact assessments 	Compliant Ongoing

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	<p>power levels in supply contracts for mobile plant and equipment, where appropriate.</p> <ul style="list-style-type: none"> - Fitting northern borefield water supply/dewatering bores with submersible pumps. - Use of a temporary power supply generator located near the borefield pipeline outlet, at least 4km from the nearest private residence, unless power is provided from the electricity network. - Maintaining awareness of best practice noise mitigation technologies and alternative operating methodologies, and continuing to investigate the potential for further noise reductions to the haul truck fleet through potential additional noise attenuation and mitigation opportunities (such as Duratray). - Designing and locating the haul roads behind earthen bunds as far as practically possible. 		<ul style="list-style-type: none"> - Sound power levels in supply contracts for mobile plant and equipment, are specified where appropriate. - Use of a temporary power supply generator at the borefield pipeline outlet, at least 4km from the nearest private residence. - Moolarben Coal have implemented best practice noise mitigation technologies including noise reductions to the haul truck fleet through additional noise attenuation and use of Duratrays to reduce noise hgeneration during loading; - haul roads on the Moolarben Coal Complex site have been developed behind earthen bunds or out-of-pit emplacement where practicable. 	
<p>18 Biodiversity</p>	<p>Biodiversity</p> <ul style="list-style-type: none"> • Management and monitoring of ecology will continue to be undertaken in accordance with an approved Landscape Management Plan (or equivalent), which will be reviewed and updated as required to incorporate the Open Cut 1 and Open Cut 2 extension areas. • Where possible, construction works in areas of known and potential threatened woodland species habitat will be avoided during their breeding cycle. • Pre-clearing fauna surveys will be undertaken prior to ground clearing disturbance. • One of two hollow bearing trees within the rail loop alignment will be retained (where possible). • Tree hollows and other habitat features will be salvaged for use as compensatory habitat, in rehabilitation areas. • The cleared area along the mining lease boundary will be rehabilitated and revegetated to enable cleared EEC to re-establish. • Disturbed areas not required for ongoing access and maintenance will be rehabilitated. Endemic species will be used to supplement natural vegetation regeneration, where required. • Groundcover will be maintained to minimise the risk of soil erosion, wherever practicable. Feral animals, weeds and pests will be controlled. • MCO further commits to: - Undertake a detailed flora and fauna inventory and mapping of the vegetation types and threatened species for properties proposed to offset the clearing impacts of the Open Cut 1 and Open Cut 2 extension areas. - Manage offset and rehabilitation areas in accordance with a Rehabilitation and Offset Management Plan (ROMP or equivalent plan) to improve biodiversity outcomes. - 	<ul style="list-style-type: none"> • Landscape Management Plan, Jun 2013 • Vegetation Clearance Protocol and Landscape Management Plan, 24 Nov 2014 • Biodiversity Offset Management Plan, Dec 2014 • Biodiversity Management Plan, Jul 2105 • Rehabilitation Management Plan, Aug 2015 	<ul style="list-style-type: none"> • Management and monitoring of ecology will continue in accordance with the approved Landscape Management Plan, Biodiversity Management Plan and Rehabilitation Management Plan for the OC1 and OC2 extension areas (and the Stage 2 development). • Pre-clearing fauna surveys are conducted prior to any vegetation clearing or surface disturbance. • Hollow bearing trees are retained (where practicable). • Tree hollows and other habitat features are salvaged for use as compensatory habitat, in rehabilitation areas. • The cleared area along the mining lease boundary is progressively rehabilitated and revegetated to enable re-establishment of cleared EEC. • Disturbed areas not required for ongoing access and maintenance are rehabilitated with endemic species to supplement natural vegetation regeneration. • Groundcover is established to minimise the risk of soil erosion. Feral animals, weeds and pests control is scheduled on an annual basis. • Moolarben Coal conducts flora and fauna inventory and mapping of the vegetation types and threatened species for properties proposed to offset the clearing impacts of the OC1 and OC2 extension areas. - Offset and rehabilitation areas are managed in accordance with a Vegetation Clearance Protocol and Landscape Management Plan and Biodiversity Management Plan. 	<p>Compliant Ongoing</p>

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	<p>Provide adequate funds to implement the management measures described in the ROMP. - Implement the management actions specific to each property and report annually on the implementation of the plan to relevant stakeholders. - Arrange for the independent review of the adequacy and implementation of the ROMP every three years. - Provide long-term security of offset areas through an appropriate mechanism (such as a conservation covenant) agreed to with relevant stakeholders. - Provide an alternative secure offset property of at least equivalent biodiversity value where long-term security of a nominated offset property is not achievable. - Investigate potential roosting sites for bat activity on properties proposed to offset the impacts of Open Cut 1 and Open Cut 2 extension areas. - Investigate use of artificial roosting sites for microbat habitat augmentation where offset areas are determined not to have sufficient roosting habitat. - Carry out targeted spring surveys for <i>Diuris Tricolor</i> in potential habitat areas within Open Cut 1 and Open Cut 2 extension areas. Where <i>Diuris Tricolor</i> plants are identified in disturbance areas, these will be translocated to suitable offset property habitat areas consistent with the monitoring and reporting requirements of the Australian Network for Plant Conservation translocation guidelines (ANPC, 2004). - Review land use history of Derived Native Grassland offset areas (including, where possible, cultivation, fertiliser application, soil nutrient levels and ground cover species) to inform appropriate management and performance and completion criteria. Where monitoring indicates these areas are not recovering as expected within the first five years of management alternative management measures will be investigated. - Maintain existing third party access arrangements on offset properties, where required. - Progressive rehabilitation of disturbed areas and re use of habitat features (e.g. hollow logs, rocks) in rehabilitation areas to minimise the habitat resource competition in adjoining conservation reserves.</p>		<p>Moolarben Coal implements the management actions specific to each property and report annually on the implementation. The Landscape Management Plan, Biodiversity Management Plan and Rehabilitation Management Plan are reviewed regularly and the adequacy and implementation of the Plans is assessed by independent experts. Moolarben Coal are progressing the mechanisms for long-term security of offset areas in consultation with the OEH and DP&E. Investigation of potential roosting sites for bat activity on properties proposed to offset the impacts of OC1 and OC2 extension areas and establishment of artificial roosting sites for microbat habitat augmentation is occurring with the placement of habitat tree stumps in rehabilitated areas on the site. Targeted Spring surveys in September, October and November 2013 were conducted by EcoLogical Australia for the Pine Donkey Orchid (<i>Diuris tricolor</i>), in potential habitat areas within Open Cut 1 and Open Cut 2 extension areas. <i>Diuris tricolor</i> was not recorded during the targeted searches. Review of land use history of Derived Native Grassland offset have been conducted to determine appropriate management and performance and completion criteria. Progressive rehabilitation of disturbed areas and re use of habitat features (e.g. hollow logs, rocks) in rehabilitation areas to minimise the habitat resource competition in adjoining conservation reserves is occurring as rehabilitation progresses (Noted on rehabilitated areas on the overburden emplacements along the boundary of OC2, during the site inspections).</p>	
18 Cultural Heritage	<p>Cultural Heritage</p> <ul style="list-style-type: none"> • Cultural heritage sites will be monitored and managed according to the measures described in an approved Aboriginal Cultural Heritage Management Plan. • Cultural heritage sites adjacent to and outside construction, mining and general disturbance areas will have appropriate controls in place to prevent potential disturbance. • Cultural heritage monitoring and salvage will be undertaken by a qualified archaeologist and members of the Aboriginal 	<ul style="list-style-type: none"> • Heritage Management Plan, Jun 2015 	<ul style="list-style-type: none"> • Cultural heritage sites are monitored and managed in accordance with the measures described in the approved Heritage Management Plan section 5. • Cultural heritage sites adjacent to and outside construction, mining and general disturbance areas are protected with appropriate controls to prevent potential disturbance. 	Compliant Ongoing

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	<p>Stakeholder community groups (Mudgee Local Aboriginal Land Council based in Mudgee; North-East Wiradjuri Pty Ltd, based in Ulan; Murong Gialinga Aboriginal and Torres Strait Islander Corporation, based in Mudgee; and Warrabinga Native Title Claimants Aboriginal Corporation, based in Kandos). • Where additional cultural heritage sites are identified, these sites will be managed in accordance with the measures described in the Aboriginal Cultural Heritage Management Plan. • Local Aboriginal community representatives will be involved in the recording, salvaging and storing of cultural heritage objects impacted by site works. • The Aboriginal Cultural Heritage Management Plan will be updated to include: - Additional registered parties as necessary. - Sub-surface testing and potential salvage of S1MC343-345 and S1MC352 where blasting is assessed to adversely impact these sites. - Test excavation and potential salvage of S1MC331 and S1MC334.</p>		<ul style="list-style-type: none"> • Cultural heritage monitoring and salvage is undertaken by qualified professional archaeologists and members of the Aboriginal Stakeholder community groups (Mudgee Local Aboriginal Land Council based in Mudgee; North-East Wiradjuri Pty Ltd, based in Ulan; Murong Gialinga Aboriginal and Torres Strait Islander Corporation, based in Mudgee; and Warrabinga Native Title Claimants Aboriginal Corporation, based in Kandos). • Where additional cultural heritage sites are identified, the new sites are recorded, added to the site database, and managed in accordance with the measures described in the Heritage Management Plan section 5.10 and 5.12. • Local Aboriginal community representatives are actively involved in the recording, salvage and storage of cultural heritage objects impacted by site works. • The Heritage Management Plan has been updated to include additional registered parties as necessary, sub-surface testing and potential salvage of S1MC343-345 and S1MC352 and test excavation and potential salvage of S1MC331 and S1MC334(undertaken by AECOM in 2015 - report in progress). 	
18 Water	<p>Water</p> <ul style="list-style-type: none"> • Erosion and sediment control measures detailed in an approved Erosion and Sediment Control Plan (or equivalent) will be implemented. • Water pressure will be monitored at the inlet and outlet of the water sharing and borefield pipeline network, and the entire length of pipeline will be inspected regularly. • In the event that a leak or loss of pressure is detected in the water sharing or borefield pipeline network, pumping in that portion of the pipeline network will cease and the resultant cause investigated and remediated. • Management and monitoring of surface water and groundwater will be undertaken in accordance with an approved Water Management Plan, which will be reviewed and updated, as necessary, to include the Open Cut 1 and Open Cut 2 extension areas and additional surface water management infrastructure. As part of this review, MCO will liaise with the NOW on the water licensing requirements for the open cut extension areas. • MCO is committed to the effective management of water in the modified landform and where required will develop strategies to this effect, including returning rehabilitated areas to clean water catchments as promptly as practically 	<ul style="list-style-type: none"> • Water Management Plan, Jul 2015 • Surface Water Management Plan, Jul 2015 • Water Sharing Agreement, 10 Aug 2009 	<p><i>Project Approval 05_0117 Schedule 3 condition 33(a)</i> <i>Project Approval 08_0135 Schedule 3 condition 29(e)</i></p> <ul style="list-style-type: none"> • Erosion and sediment control measures detailed in the approved Surface Water Management Plan, section 4.3 are implemented at the Moolarben Coal Complex site. • Water pressure is monitored at the inlet and outlet of the water sharing and borefield pipeline network, and the pipeline is inspected regularly. • Management and monitoring of surface water and groundwater is conducted in accordance with the approved Water Management Plan, reviewed and updated, to include the OC1 and OC2 extension areas and additional surface water management infrastructure. As part of this review, MCO will liaise with the NOW on the water licensing requirements for the open cut extension areas. • MCO is committed to mine plan sequencing and the commitment to progressive rehabilitation including returning rehabilitated areas to clean water catchments as soon as practicable • MCO abides by the rules of the Water Sharing Agreement with Ulan Coal. 	Compliant Ongoing

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	possible. • MCO will abide by the rules of any relevant water sharing plan and return water where required.			
18 Rehabilitation	<p>Rehabilitation</p> <p>• Soils will be stockpiled and used to rehabilitate areas not required for ongoing operations. • MCO is committed to progressively rehabilitating mined areas as soon as practical following disturbance, in accordance with an approved Landscape Management Plan (or equivalent Rehabilitation Plan), including returning areas disturbed by mining to their premining land use (unless otherwise agreed with relevant stakeholders). The plan will be updated, as required, to include the Open Cut 1 and Open Cut 2 extension areas. The plan will consider use of terrestrial riparian buffers. • The majority of the Open Cut 1 and Open Cut 2 extension areas will be rehabilitated for biodiversity outcomes. • The 15.7 ha area of Class 3 agricultural land directly impacted by the Open Cut 1 and Open Cut 2 extension areas will be reinstated for agricultural purposes post mining.</p>	<ul style="list-style-type: none"> • Landscape Management Plan, Jun 2013 • Vegetation Clearance Protocol and Landscape Management Plan, 24 Nov 2014 • Biodiversity Management Plan, Jul 2105 • Rehabilitation Management Plan, Aug 2015 	<p><i>Project Approval 05_0117 Schedule 3 condition 65-69</i></p> <ul style="list-style-type: none"> • Top-soil is stripped and reused for rehabilitation, or stockpiled and used to rehabilitate areas not required for ongoing operations. • Progressive rehabilitating of mined areas and overburden emplacements occurs as soon as practical in accordance with the Landscape Management Plan, Rehabilitation Management Plan and MOP. The Plan are reviewed and updated, as required. • The 15.7 ha area of Class 3 agricultural land directly impacted by the OC1 and OC2 extension areas will be reinstated for agricultural purposes post mining when mining is completed. 	Compliant Ongoing
18 Traffic	<p>Traffic</p> <p>• Appropriate traffic management will be implemented for Ulan Road for construction vehicles entering and leaving the site to Ulan Road and along Saddlers Creek Road, where required. • MCO is committed to participate in the Ulan Road Strategy and will continue to consult with MWRC in relation to local road strategies.</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 2 condition 14 and Appendix 4 • Project Approval 05_0117 Schedule 3 condition 56 	<p>Moolarben Coal, Mid-Western Regional Council and the owners of the Ulan and Wilpinjong mines to agree to develop a detailed plan for the implementation of the Ulan Road Strategy. A Deed of Agreement for Funding and delivery of the Ulan Road Upgrade was signed by Moolarben Coal, Ulan Coal, Wilpinjong Coal and the Mid-Western Regional Council in July 2014.</p> <p>Financial contributions towards the implementation of the Ulan Road Strategy occurs in accordance with the requirements in the Deed of Agreement dated July 2014.</p>	Compliant Ongoing
18 Visual	<p>Visual</p> <p>• Trees and shrubs will be planted to provide a visual screen: - To the switch and bore pads located adjacent to Saddlers Creek Road, where required. - Along the southern edge of Cope Road, where views of Open Cut 1 extension areas will be possible, subject to landowner consent. • The Landscape Management Plan (or equivalent) will be reviewed and updated to describe the measures that will be implemented to manage visual impacts associated with the Open Cut 1 and Open Cut 2 extension areas, such as: - Vegetation screen planting, subject to land owner's consent, along the southern edge of Cope Road, in areas visually affected by direct views of the Open Cut 1 extension area. - Investigating the feasibility of targeted vegetation screen planting for</p>		<p><i>Project Approval 08_0135 Schedule 3 condition 61</i></p> <p>Trees and shrubs have been planted to provide a visual screen where views of OC1 extension areas are visible to passing traffic or residences.</p> <p>The Rehabilitation Management Plan was reviewed and updated to describe the measures to be implemented to manage visual impacts associated with the OC1 and OC2 extension areas,</p> <p>Targeted vegetation screening is considered for affected properties along Ridge Road (with direct views from the residence to OC1 and OC2 extension areas), to mitigate the visual and lighting impacts.</p>	Compliant Ongoing

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	<p>affected properties along Ridge Road (with direct views from the residence to both Open Cut 1 and Open Cut 2 extension areas), to mitigate the visual and lighting impacts of Open Cut 1 and Open Cut 2 extension areas, subject to landowner consent. - Building-up out-of-pit embankments first so that continued operations are obscured by the embankment. Wherever possible out-of-pit emplacements around the perimeter will be established first, providing a visual screen while work is undertaken in the central part of the emplacement. - Seeding and grassing embankment outer faces visually exposed to private residents as soon as practically possible to soften the view. - Where possible, maintaining a strip of vegetation along the leading face of the ridgeline associated with the Open Cut 1 extension area to provide a visual screen to workings for as long as practical. - Use of operational screening measures such as landform re-establishment sequencing and lighting management. - Progressive rehabilitation. • As far as practically possible, and where mine safety allows, management protocols will be established and implemented to: - Locate mobile lighting plant to be directed away from private residences. - Direct stationary lighting sources below the horizontal to minimise potential light spill. - Design lighting systems that minimise light spillage. - Avoid lighting of light coloured surfaces that have greater reflectivity</p>		<p>Increasing the height of out-of-pit embankments is increased where practicable to obscure operations to provide a visual screen.</p> <p>Grassing of out-of-pit embankment faces visually exposed to private residents to soften the view.</p> <p>A strip of vegetation has been maintained along the leading face of the ridgeline associated with the OC1 extension area.</p> <p>Operational screening measures such as landform re-establishment sequencing and lighting management are implemented where practicable. Disturbed areas are progressively rehabilitated where mine safety allows and management protocols have been established for the location of mobile lighting plant to ensure it is directed away from private residences.</p> <p>Stationary lighting sources are directed below the horizontal to minimise potential light spill.</p> <p>Lighting systems are designed / managed to minimise light spillage.</p>	
18 Social	<p>Social</p> <p>• MCO is committed to prevent or minimise negative social impacts resulting from the MCP and will use its best endeavours to enhance the social benefits of the Project in accordance with its Environment and Community Policy.</p>			Noted

Attachment C

Project Approval 08_0135

Red type represents the July 2015 modification (MOD1)

Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance
	Schedule 2 - Administrative Conditions			
	Obligations to Minimise Harm to the Environment			
1	In addition to meeting the specific performance criteria established under this approval, the Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the project.			Noted
2	The Proponent shall carry out the project generally in accordance with the: (a) EA; (b) statement of commitments; and (c) conditions of this approval. <i>Notes: • The general layout of the project is shown in Appendix 2; and • The statement of commitments is shown in Appendix 3.</i>	<ul style="list-style-type: none"> Environmental Assessment - Moolarben Coal Project Stage 2 - Mar 2009 and supplementary reports 2012-2015 Environmental Assessment - OC4 South-West Modification – MOD 1, Apr 2015 	Development of the Moolarben Coal Project Stage 2 commenced in September 2015, generally in accordance with the: <ul style="list-style-type: none"> <i>Moolarben Coal Project Stage 2 Environmental Assessment Report</i>, March 2009 as modified by the preferred project report, January 2012; Response to submissions June 2012; Residual matters report, August 2012; Groundwater Accounting and Water Sharing Plan prepared by RPS Aquaterra Pty Ltd, 13 June 2012; Surface water information prepared by Worley Parsons Services Pty Ltd, 28 September 2012, 15 October 2012 and 9 November 2012; Biodiversity Offset Strategy prepared by Cumberland Ecology Pty Ltd, December 2012; Water Licensing Report – Wollar Creek Water Source prepared by Dundon Consulting Pty Ltd, 11 June 2013; and OC4 South-West Modification MOD 1 Environmental Assessment, April 2015, June 2015. 	Compliant Ongoing
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 approval shall prevail to the extent of any inconsistency			Noted

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4	The proponent shall comply with any reasonable requirement/s of the Secretary arising from the department's assessment of: (a) any reports, plans, programs, strategies, reviews, audits or correspondence that are submitted in accordance with this approval; and (b) the implementation of any actions or measures contained in these documents.			Noted
	Lapsing of Approval			
5	If the project has not been physically commenced within 5 years of the date of this approval, then this project approval shall lapse.		The Moolarben Cola Project Stage 2 was physically commenced in September 2015.	Not applicable
	Mining Operations			
6	The Proponent may carry out mining operations on the site until 31 December 2038. <i>Note: Under this approval, the Proponent is required to rehabilitate the site and perform additional undertakings to the satisfaction of both the Secretary and the Executive Director Mineral Resources. Consequently, this approval will continue to apply in all other respects other than the right to conduct mining operations until the rehabilitation of the site and these additional undertakings have been carried out satisfactorily</i>		The Moolarben Coal mining operations may be undertaken on the site until 31 December 2038	Noted
	Coal Extraction			
7	The Proponent shall not extract more than: (a) 8 million tonnes of ROM coal from the open-cut mining operations of the project in any calendar year except 2015 and 2016; (b) 9 million tonnes of ROM coal from the open-cut mining operations of the project in the calendar years 2015 and 2016; and (c) 4 million tonnes of ROM coal from the underground mining operations of the project in any calendar year.	<ul style="list-style-type: none"> • 2013-2014 AEMR section 2.4 	No coal extraction had occurred from the Stage 2 Moolarben Coal development. The site preparation for OC4 only commenced in September 2015. Coal extraction from the Moolarben open cut mines has not exceeded 9 million tonnes per annum between January 2013 and December 2015.	Compliant Ongoing
	Coal Processing and Transport			
7	The Proponent shall ensure that all coal extracted from the project is sent to the Moolarben Stage 1 mine surface infrastructure area for processing and/or transport to market.		All coal extracted from the Moolarben Stage 1 open cuts has been sent to the Moolarben Stage 1 mine surface infrastructure area for processing and/or transport to market, between 2013 and 2015. No coal had been extracted from the Stage 2 works as at the date of this audit (December 2015).	Compliant Ongoing

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	STRUCTURAL ADEQUACY			
9	The Proponent shall ensure that all 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. <i>Notes: • Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.</i>		The construction / installation of new buildings for the Stage 2 project establishment have been designed and constructed in accordance with BCA requirements. Construction Certification is being undertaken by Boyce Environmental Consulting (HV Workshops) and Wetherall Building Certifiers (Open Cut Administration Buildings (at the time of the audit).	Compliant Ongoing
	DEMOLITION			
10	The Proponent shall ensure that all demolition work is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version.	<ul style="list-style-type: none"> AS 2601-2001: The Demolition of Structures 	The development of the Moolarben Coal Project infrastructure for Stage 2 has only involved the removal and/or relocation of some demountable buildings. No demolition of had occurred at the date of this audit.	Compliant Ongoing
	PROTECTION OF PUBLIC INFRASTRUCTURE			
11	Unless the Proponent and the applicable authority agree otherwise, the Proponent shall: a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the project; and (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the project. <i>Note: This condition does not apply to any damage to public infrastructure subject to compensation payable under the Mine Subsidence Compensation Act 1961, or to damage to roads caused as a result of general road usage.</i>		Power lines in the Murmgamba Valley were decommissioned during the commencement of construction works for Stage 1 of the Moolarben Coal Project. No public infrastructure was required to be relocated during the early Stage 2 works at the date of this audit.	Not triggered
	OPERATION OF PLANT AND EQUIPMENT			
12	The Proponent shall ensure that all plant and equipment used at the site, or in connection with the project, is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner		All plant and equipment used at the Moolarben Coal Project site in connection with the project, is maintained in the on-site workshops in a proper and efficient condition; and is operated in a proper and efficient manner.	Compliant Ongoing
	STAGED SUBMISSION OF STRATEGIES, PLANS OR PROGRAMS			
13	With the approval of the Secretary, the Proponent may: (a) submit any strategy, plan or program required by this approval on a progressive basis; and (b) combine any strategy, plan, program, review, audit or report required by this approval with any similar strategy, plan,	<ul style="list-style-type: none"> Letter to DP&E re Staging of Biodiversity Management Plan, 17 Jul 2015 Letter from DP&E re Staging of Biodiversity Management Plan, 20 Jul 2015 	DP&E approved the Staging of the Biodiversity Management Plan to progressively address the biodiversity offset strategy requirements in Schedule 3 condition 30. All other strategies, plans or programs required to be prepared for the operation of Stage 2 of the	Compliant Ongoing

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	<p>program, review, audit or report required under Project Approval 05_0117 for the Moolarben Coal Project Stage 1.</p> <p><i>Notes:</i> • While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.</p>	<ul style="list-style-type: none"> • Aboriginal Cultural Heritage Management Plan • Air Quality Management Plan • Blast Management Plan, • Blast Fume Management Strategy • Environmental Management Strategy • Heritage Management Plan • Landscape Management Plan • Noise Management Plan • Waste Management Plan • Water Management Plan • Biodiversity Offset Management Plan 	<p>Moolarben Coal Project have been developed and submitted to the DP&E for approval.</p> <p>Where practicable the strategies, plans or programs have been developed to include both the Stage 1 and Stage 2 development in a single document.</p>	
	COMMUNITY ENHANCEMENT			
14	<p>From the commencement of construction until mining operations under this approval cease, the Proponent shall pay to Council a total of \$515 a year for each full-time equivalent employee/contractor at the Moolarben mine complex in excess of 320. This payment is for the provision of infrastructure and services generated by the project. It is also to be indexed in accordance with the CPI for the previous quarter.</p>		<p>The number of full-time equivalent employees / contractors at the Moolarben Coal Complex had not reached the number required for the payment to the Council for the provision of infrastructure and services expressed in this condition.</p> <p>The employee numbers during 2014 ranged from 244 to 290 (i.e. less than the trigger number of 320).</p>	Not triggered
	NOISE			
	Acquisition Upon Request			
1	<p>Upon receiving a written request for acquisition from the owner of the land listed in Table 1, the Applicant shall acquire the land in accordance with the procedures in conditions 5 and 6 of Schedule 5.</p> <p><i>Table 1A: Land subject to acquisition upon request</i> Receiver ID - 32</p> <p><i>Note: To interpret the land referred to in Table 1, see the applicable figures in Appendix 5.</i></p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 1A 	<p>No written requests for acquisition were received between 2013 and 2015.</p>	Not triggered
	Mitigation Upon Request			

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance																																																	
2	<p>Upon receiving a written request from the owner of the residence on the land listed in Table 3, the Proponent shall implement additional noise mitigation measures (such as double-glazing, insulation and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible, and directed towards reducing the noise impacts of the complex on the residence. If within 3 months of receiving this request from the owner, the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.</p> <p><i>Table 3: Land subject to additional noise mitigation upon request</i></p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="text-align: center;">Receiver ID</td> </tr> <tr> <td style="text-align: center;">30</td> </tr> </table> <p><i>Note: To interpret the land referred to in Table 3 see the applicable figures in Appendix 5.</i></p>	Receiver ID	30	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 5 	No written requests for mitigation measures to Residence 30 was received between 2013 and 2015.	Not triggered																																															
Receiver ID																																																					
30																																																					
3	<p>The Proponent shall ensure that the noise generated by the Moolarben mine complex does not exceed the noise criteria in Table 3 at any residence on privately-owned land or the other specified locations.</p> <p><i>Table 3: Noise criteria dB(A)</i></p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Land No.</th> <th>Day</th> <th>Evening</th> <th colspan="2">Night</th> </tr> <tr> <th colspan="2">LAeq(15min)</th> <th colspan="2">LA1(1min)</th> </tr> </thead> <tbody> <tr> <td>30,63</td> <td>39</td> <td>39</td> <td>39</td> <td>45</td> </tr> <tr> <td>70</td> <td>37</td> <td>37</td> <td>37</td> <td>45</td> </tr> <tr> <td>75</td> <td>36</td> <td>36</td> <td>36</td> <td>45</td> </tr> <tr> <td>31</td> <td>36</td> <td>36</td> <td>36</td> <td>45</td> </tr> <tr> <td>All other privately owned residences</td> <td>35</td> <td>35</td> <td>35</td> <td>45</td> </tr> <tr> <td>Ulan Primary School</td> <td colspan="2">35 (internal) when in use</td> <td colspan="2">-</td> </tr> <tr> <td>Ulan Anglican Church Ulan Catholic Church</td> <td colspan="2">35 (internal) when in use</td> <td colspan="2">-</td> </tr> <tr> <td>Goulburn River National Park</td> <td colspan="2">50</td> <td colspan="2">-</td> </tr> </tbody> </table>	Land No.	Day	Evening	Night		LAeq(15min)		LA1(1min)		30,63	39	39	39	45	70	37	37	37	45	75	36	36	36	45	31	36	36	36	45	All other privately owned residences	35	35	35	45	Ulan Primary School	35 (internal) when in use		-		Ulan Anglican Church Ulan Catholic Church	35 (internal) when in use		-		Goulburn River National Park	50		-		<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 1 Monthly Environmental Monitoring Report, 1 September 2015 to 31 December 2015 	No exceedances of the noise criteria were recorded between September 2015 and December 2015.	Compliant
Land No.	Day		Evening	Night																																																	
	LAeq(15min)		LA1(1min)																																																		
30,63	39	39	39	45																																																	
70	37	37	37	45																																																	
75	36	36	36	45																																																	
31	36	36	36	45																																																	
All other privately owned residences	35	35	35	45																																																	
Ulan Primary School	35 (internal) when in use		-																																																		
Ulan Anglican Church Ulan Catholic Church	35 (internal) when in use		-																																																		
Goulburn River National Park	50		-																																																		

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance															
	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%;">Munghorn Gap Nature Reserve</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 40%;"></td> </tr> </table> <p><i>Note: To interpret the land referred to in Table 1 see the applicable figures in Appendix 5.</i></p> <p>Noise generated by the complex is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 6 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria. However, these noise criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.</p>	Munghorn Gap Nature Reserve																	
Munghorn Gap Nature Reserve																			
	Land Acquisition Criteria																		
4	<p>If the noise generated by the Moolarben mine complex exceeds the criteria in Table 4 at any residence on privately-owned land, then upon receiving a written request for acquisition from an owner of the land listed in Table 4, the Proponent shall acquire the land in accordance with the procedures in conditions 5 and 6 of Schedule 5.</p> <p><i>Table 4: Acquisition criteria dB(A) $L_{Aeq}(15min)$</i></p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th rowspan="2">Receiver ID</th> <th>Day</th> <th>Evening</th> <th>Night</th> </tr> <tr> <th colspan="3">$(L_{Aeq}(15min))$</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>43</td> <td>43</td> <td>42</td> </tr> <tr> <td>All other privately-owned residences</td> <td>40</td> <td>40</td> <td>40</td> </tr> </tbody> </table> <p><i>Note: To interpret the land referred to Table 2A, see the applicable figures in Appendix 5.</i></p>	Receiver ID	Day	Evening	Night	$(L_{Aeq}(15min))$			63	43	43	42	All other privately-owned residences	40	40	40	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 2 	No exceedances of the noise criteria were recorded between September 2015 and December 2015.	Not triggered
Receiver ID	Day		Evening	Night															
	$(L_{Aeq}(15min))$																		
63	43	43	42																
All other privately-owned residences	40	40	40																
5	<p>If the noise generated by the Moolarben mine complex contributes to exceedances of the relevant criteria in Table 5 on more than 25% of any privately-owned land (and a dwelling could be built on that land under existing planning controls), the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 5 and 6 of Schedule 5. <i>Table 2: Land acquisition criteria</i></p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Day/Evening/Night $L_{Aeq(period)}$</th> <th>Receiver</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"></td> <td></td> </tr> </tbody> </table>	Day/Evening/Night $L_{Aeq(period)}$	Receiver			<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 3 	No exceedances of the noise criteria were recorded between September 2015 and December 2015.	Not triggered											
Day/Evening/Night $L_{Aeq(period)}$	Receiver																		

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance															
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">55/50/45</td> <td style="width: 50%;">All privately owned land</td> </tr> </table> <p><i>Note: Noise generated by the complex is to be measured in accordance with the relevant requirements of the NSW Industrial Noise Policy. Appendix 6 sets out the meteorological conditions under which these criteria apply, and the requirements for evaluating compliance with these criteria. However, these noise criteria do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.</i></p>	55/50/45	All privately owned land																
55/50/45	All privately owned land																		
	Noise Mitigation Criteria																		
6	<p>If the noise generated by the Moolarben mine complex exceeds the criteria in Table 3A at any privately owned residence, then upon receiving a written request the Proponent shall implement additional noise mitigation measures (such as double-glazing, insulation and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible, and directed towards reducing the noise impacts of the project on the residence. If within 3 months of receiving this request from the owner, the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.</p> <p>Table 3A: Mitigation criteria dB(A) LAeq (15min)</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th rowspan="2">Receiver ID</th> <th>Day</th> <th>Evening</th> <th>Night</th> </tr> <tr> <th colspan="3">(L_{Aeq} (15min))</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>40</td> <td>40</td> <td>39</td> </tr> <tr> <td>All other privately-owned residences</td> <td>37</td> <td>37</td> <td>37</td> </tr> </tbody> </table> <p><i>Note: To interpret the land referred to Table 3A, see the applicable figures in Appendix 5.</i></p>	Receiver ID	Day	Evening	Night	(L _{Aeq} (15min))			63	40	40	39	All other privately-owned residences	37	37	37	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 4 	<p>No exceedances of the noise criteria noted between September 2015 and December 2015.</p> <p>No written requests in relation to mitigation measures were received by Moolarben Coal between September 2015 and December 2015.</p>	Not triggered
Receiver ID	Day		Evening	Night															
	(L _{Aeq} (15min))																		
63	40	40	39																
All other privately-owned residences	37	37	37																
	Operating Conditions																		
7	<p>The Proponent shall:</p> <p>(a) implement best management practice to minimise the operational, road and rail noise of the project;</p> <p>(b) operate a comprehensive noise management system on site that uses a combination of predictive meteorological</p>	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 6 Noise Management Plan, May 2015 	<p>The Noise Management Plan:</p> <p>(a) section 7 addresses implementation of best management practice to minimise the operational, road and rail noise of the project;</p>	Compliant Ongoing															

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	<p>forecasting and real-time noise monitoring data to guide the day to day planning of mining operations, and the implementation of both proactive and reactive noise mitigation measures to ensure compliance with the relevant conditions of this approval;</p> <p>(c) minimise the noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply (see Appendix 6);</p> <p>(d) only use locomotives and rolling stock that are approved to operate on the NSW rail network in accordance with the noise limits in ARTC's EPL;</p> <p>(e) co-ordinate noise management with the noise management at Ulan and Wilpinjong mines to minimise cumulative noise impacts; and</p> <p>(f) carry out regular monitoring to determine whether the project is complying with the relevant conditions of this approval, to the satisfaction of the Secretary.</p>	<ul style="list-style-type: none"> Letter from Pacific National re Use of Locomotives and Rolling Stock that meet ARTC Noise Limits. 	<p>(b) section 8 details the noise monitoring program that uses a combination of predictive meteorological forecasting and real-time noise monitoring data to guide the day to day planning of mining operations, and section 8.3.4 addresses the implementation of proactive and reactive noise mitigation measures to ensure compliance with this approval;</p> <p>(c) section 8.2.4 addresses minimising noise impacts of the project during meteorological conditions when the noise limits in this approval do not apply;</p> <p>(d) a letter from Pacific National stating it would only use locomotives and rolling stock that meet ARTC noise limits only use locomotives and rolling stock that are approved to operate on the NSW rail network in EPL 6142;</p> <p>(e) Moolarben Coal has implemented a data sharing protocol with Ulan Coal Mine and Wilpinjong Mine to minimise cumulative noise impacts; and</p> <p>(f) section 8 presents the noise monitoring program implemented to determine compliance of the project with the relevant conditions of this approval.</p>	
	Noise Management Plan			

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance								
8	<p>The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with the EPA, and submitted to and approved by the Secretary prior to the commencement of any development on site under this approval;</p> <p>(b) describe the measures that would be implemented to ensure compliance with the noise criteria and operating conditions in this approval;</p> <p>(c) describe the proposed noise management system in detail; and</p> <p>(d) include a monitoring program that: • evaluates and reports on: - the effectiveness of the noise management system; - compliance against the noise criteria in this approval; and - compliance against the noise operating conditions; • includes a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time (so the real-time noise monitoring program can be used as a better indicator of compliance with the noise criteria in this approval and trigger for further attended monitoring); and • defines what constitutes a noise incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents.</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 7 • Noise Management Plan, May 2015 • Letter from DP&E re Approval of the Noise Management Plan Version 3, 22 Jun 2015 	<p>The Noise Management Plan for the Moolarben Coal was revised to satisfy Project Approval 08_0135 Schedule 3 condition 8 in May 2015 to include management and mitigation measures for both Stage 1 and Stage 2:</p> <p>(a) the Noise Management Plan was prepared and submitted to the Secretary for approval in May 2015 prior to the commencement of any development on site under this approval. Consultation with the EPA is not reported in the document. (It is noted that EPA received the document but does not review or comment on Management Plans);</p> <p>(b) section 7 describes measures to be implemented to ensure compliance with the noise criteria and operating conditions;</p> <p>(c) section 7 also describes the noise management system;</p> <p>(d) section 8.2.1 presents the monitoring program that includes: • attended noise monitoring to evaluate compliance of the project against the noise criteria in this approval; • a program to calibrate and validate the real-time noise monitoring results with the attended monitoring results over time; • section 8 and 11 addresses evaluation and reporting on: the effectiveness of the noise management system; and - compliance against the noise operating conditions; and • section 11.1 defines what constitutes a noise incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any noise incidents.</p>	Compliant								
	BLASTING											
	Blasting Criteria											
9	<p>The Proponent shall ensure that the blasting on the Moolarben mine complex does not cause exceedances of the criteria in Table 7.</p> <p>Table 4: Blasting criteria</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Location</th> <th style="width: 20%;">Airblast overpressure (dB_(Lin Peak))</th> <th style="width: 20%;">Ground vibration (mm/s)</th> <th style="width: 40%;">Allowable exceedance</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">120</td> <td style="text-align: center;">10</td> <td style="text-align: center;">0%</td> </tr> </tbody> </table>	Location	Airblast overpressure (dB _(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance		120	10	0%	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 8 • Blast Management Plan, section 3 	<p>Blast monitoring conducted for each blast undertaken at the Moolarben Coal Complex demonstrated that no exceedance of the blasting criteria occurred at the Stage 2 site works between September and December 2015.</p>	Compliant Ongoing
Location	Airblast overpressure (dB _(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance									
	120	10	0%									

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Condition No.	Project Approval 08_0135 Condition				Verification	Comments	Compliance
	Residence on privately owned land, churches and schools	115	5	5% of the total number of blasts over a period of 12 months			
	All public infrastructure		50*	0%			
	* (or a limit determined by the structural design methodology in AS 2187.2-2006, or its latest version, or other alternative limit for public infrastructure, to the satisfaction of the Secretary. However, these criteria do not apply if the Proponent has a written agreement with the relevant owner, and has advised the Department in writing of the terms of this agreement.						
	Blasting Hours						
10	The Proponent shall only carry out blasting on the site between 9am and 5pm Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary.				<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 9 Blast Management Plan, section 6.3 	All blasts conducted at the Moolarben Coal Complex Stage 2 site only occurred between 9am and 5pm Monday to Saturday, with no blasts conducted on Sundays or public holidays.	Compliant Ongoing
	Blasting Frequency						
11	The Proponent may carry out a maximum of: (a) 2 blasts a day; and (b) 9 blasts a week, averaged over a calendar year, at the Moolarben mine complex. This condition does not apply to blasts that generate ground vibration of 0.5 mm/s or less at any residence on privately-owned land, blasts misfires or blasts required to ensure the safety of the mine or its workers. <i>Note: For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.</i>				<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 10 Blast Management Plan, section 3 	Blasting at the Moolarben Coal Complex site did not exceed 2 blasts per day or 9 blasts per week between 20-13 and 2015.	Compliant Ongoing
	Property Inspections						
12	If the Proponent receives a written request from the owner of any privately-owned land within 2 kilometres of any approved open cut mining pit on site for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection updated, then within 2 months of receiving this request the Proponent shall:				<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 11 Blast Management Plan, section 6.2.2 	No property inspections related to the commencement of works at the Stage 2 Moolarben Coal development of OC4 were requested between September and December 2015.	Not triggered

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance
	<p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to: • establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and • identify measures that should be implemented to minimise the potential blasting impacts of the project on these buildings and/or structures; and</p> <p>(b) give the landowner a copy of the new or updated property inspection report.</p> <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Proponent or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.</p>			
	Property Investigations			
13	<p>If the owner of any privately-owned land claims that buildings and/or structures on his/her land have been damaged as a result of blasting on the site, then within 2 months of receiving this claim the Proponent shall:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and</p> <p>(b) give the landowner a copy of the property investigation report.</p> <p>If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damage to the satisfaction of the Secretary.</p> <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Proponent or the landowner disagrees with the findings of t</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 12 • Blast Management Plan, section 6.2.2 	No property investigations related to the commencement of works at the Stage 2 Moolarben Coal development of OC4 were conducted between September and December 2015.	Not triggered
	Operating Conditions			
14	<p>The Proponent shall: (a) implement best practice blasting management to: • protect the safety of people and livestock in the surrounding area; • protect public or private infrastructure/property in the surrounding area from any damage; and • minimise the dust and fume emissions of any blasting; (b) operate a suitable system to enable the public to get up-to-date information on the proposed blasting Schedule on site; and (c) co-ordinate the timing of blasting on site with the timing of blasting at the Ulan and Wilpinjong mines to</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 13 • Blast Management Plan, section 6 	<p>The Blast Management Plan section 6 addresses operating conditions:</p> <p>(a) section 6.1 outlines implementation of best practice blasting management to protect the safety of people and livestock in the surrounding area;</p> <p>• section 6.3 addresses protection of public or private infrastructure/property in the surrounding area from any damage; and</p>	Compliant Ongoing

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance
	minimise cumulative blasting impacts, to the satisfaction of the Secretary		<ul style="list-style-type: none"> • section 6.5 and 6.6 addresses minimising dust and fume emissions from any blasting; (b) section 6.4 outlines the system to enable the public to get up-to-date information on the proposed blasting Schedule on site; and (c) section 6.2.1 addresses co-ordination of timing of blasting on site with the timing of blasting at the Ulan and Wilpinjong mines to minimise cumulative blasting impacts, to the satisfaction of the Secretary 	
15	<p>The Proponent shall not undertake blasting on site within 500 metres of:</p> <p>(a) any public road;</p> <p>(b) the Gulgong to Sandy Hollow Railway Line;</p> <p>(c) the Wollar-Wellington 330kV Transmission Line; or</p> <p>(d) any land outside the site not owned by the Proponent, unless the Proponent has:</p> <ul style="list-style-type: none"> • demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the infrastructure or land without compromising the safety of people or livestock or damaging the infrastructure and/or other buildings and structures; and • updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the infrastructure or land; or • a written agreement with the relevant infrastructure owner or landowner to allow blasting to be carried out closer to the infrastructure or land, and the Proponent has advised the Department in writing of the terms of this agreement. 	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 14 • Blast Management Plan, section 6.3 	<p>The Blast Management Plan section 6.3 describes management procedures in relation to blasting on site within 500 metres of:</p> <p>(a) any public road;</p> <p>(b) Moolarben Coal has a written agreement with ARTC to undertake blasting within 500m of the Gulgong to Sandy Hollow Railway Line;</p> <p>(c) Moolarben Coal has a written agreement with Transgrid to undertake blasting within 500m of the Wollar-Wellington 330kV Transmission Line; or</p> <p>(d) section 6.3 of the updated the Blast Management Plan includes specific measures to be implemented while blasting is being carried out within 500 metres of the infrastructure or any land outside the site not owned by the Moolarben Coal.</p>	Compliant Ongoing
	Blast Management Plan			
16	<p>The Proponent shall prepare and implement a Blast Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with the EPA, and submitted to and approved by the Secretary prior to conducting any blasting on site;</p> <p>(b) describe the measures that would be implemented to ensure compliance with the blast criteria and operating conditions of this approval;</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 16 • Blast Management Plan Version 4 May 2015 • Letter from DP&E re Approval of Blast Management Plan Version 4, 22 Jun 2015 	<p>The Blast Management Plan Version 4, May 2015 was prepared with input from SLR Consulting Australia Pty Ltd and includes management and mitigation measures for both Stage 1 and Stage 2 of the Project.</p> <p>(a) The Blast Management Plan Version 4 was submitted to the Secretary for approval in May 2015 prior to conducting any blasting on site.</p>	Compliant

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	(c) propose and justify any alternative ground vibration limits for public infrastructure in the vicinity of the site (if relevant); and (d) include a monitoring program for evaluating and reporting on compliance with the blasting criteria and operating conditions of this approval.		Consultation with the EPA is not reported in the document. (It is noted that EPA received the document but does not review or comment on Management Plans); (b) section 6 describes the blast management and control measures implemented to ensure compliance with the blast criteria and operating conditions of this approval; (c) propose and justify any alternative ground vibration limits for public infrastructure in the vicinity of the site (if relevant); and (d) section 7 describes the blast monitoring program for evaluating compliance with the blasting criteria and operating conditions of this approval.	Compliant															
	AIR QUALITY																		
	Odour																		
17	The Proponent shall ensure that no offensive odours, as defined under the POEO Act, are emitted from the site.	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 16 <i>Protection of the Environment Operations Act 1997</i>, Air Quality Management Plan, Version 3, section 6.2, Jul 2015 Moolarben Coal Complaints Register, Sep to Dec 2015 	Site establishment for the Moolarben Coal Stage 2 operations commenced in September 2015. No odour complaints related to the Stage works were received between 2013 and 2015.	Compliant Ongoing															
	Air Quality Criteria																		
18	<p>The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the Moolarben mine complex do not cause exceedances of the criteria listed in Tables 8, 9 and 10 at any residence on privately owned land.</p> <p><i>Table 8: Long term impact assessment criteria for particulate matter</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>90 µg/m³</td> </tr> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>Annual</td> <td>30 µg/m³</td> </tr> </tbody> </table> <p><i>Table 9: Short term impact assessment criterion for particulate matter</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>24hour</td> <td>50 µg/m³</td> </tr> </tbody> </table>	Pollutant	Averaging Period	Criterion	Total suspended particulate (TSP) matter	Annual	90 µg/m ³	Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m ³	Pollutant	Averaging Period	Criterion	Particulate matter < 10 µm (PM ₁₀)	24hour	50 µg/m ³	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 17 Air Quality Management Plan, Version 3, Jul 2015 Monthly Environmental Monitoring Reports, Sep to Dec 2015. 	<p>The review of air quality data from September to December 2015 indicated:</p> <ul style="list-style-type: none"> No exceedances of the TSP or PM₁₀ criteria have been recorded (with TSP estimated from PM₁₀). No exceedances of the monthly dust deposition criteria were recorded. 	Compliant Ongoing
Pollutant	Averaging Period	Criterion																	
Total suspended particulate (TSP) matter	Annual	90 µg/m ³																	
Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m ³																	
Pollutant	Averaging Period	Criterion																	
Particulate matter < 10 µm (PM ₁₀)	24hour	50 µg/m ³																	

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	<p><i>Table 10: Long term impact assessment criterion for deposited dust</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Pollutant</th> <th style="width: 15%;">Averaging Period</th> <th style="width: 15%;">Max increase in dep dust level</th> <th style="width: 15%;">Max total dep dust level</th> </tr> </thead> <tbody> <tr> <td>Deposited dust</td> <td>Annual</td> <td>2g/m/mth</td> <td>4g/m/mth</td> </tr> </tbody> </table> <p><i>Notes to Tables 5-7: a Cumulative (i.e. incremental increase in concentrations due to the complex plus background concentrations due to all other sources); b Incremental impact (i.e. incremental increase in concentrations due to the complex 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; and d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents, illegal activities or any other activity agreed by the Secretary.</i></p>	Pollutant	Averaging Period	Max increase in dep dust level	Max total dep dust level	Deposited dust	Annual	2g/m/mth	4g/m/mth			
Pollutant	Averaging Period	Max increase in dep dust level	Max total dep dust level									
Deposited dust	Annual	2g/m/mth	4g/m/mth									
	Mine-owned Land											
19	<p>The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the Moolarben mine complex do not cause exceedances of the criteria listed in Tables 8, 9 and 10 at any occupied residence on mine-owned land (including land owned by another mine) unless: (a) the tenant and landowner has been notified of any health risks associated with such exceedances in accordance with the notification requirements under Schedule 4 of this approval;</p> <p>(b) the tenant of any land owned by the Proponent can terminate their tenancy agreement without penalty at any time, subject to giving reasonable notice, and the Proponent uses its best endeavours to provide assistance with relocation and sourcing of alternative accommodation;</p> <p>(c) air mitigation measures such as air filters, a first flush roof water drainage system and/or air conditioning) are installed at the residence, if requested by the tenant and landowner (if the residences is owned by another mine);</p> <p>(d) particulate matter air quality monitoring is regularly undertaken to inform the tenant and landowner of the actual particulate emissions; and</p> <p>(e) data from this monitoring is presented to the tenant in an appropriate format, for a medical practitioner to assist the</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 18 • Air Quality Management Plan, Version 3, section 6.1.1, Jul 2015 • Annual Environment Management Report, 2012-2013. • Annual Environment Management Report, 2013-2014. • Monthly Environmental Monitoring Reports, 2014-2015 	<p>Data from the air quality monitoring network monitoring locations representative of nearest mine-owned and occupied land, was reviewed during this audit to check compliance with the criteria listed in Schedule 3 condition 17 - Tables 8, 9 and 10. The review of air quality data at occupied residences on mine-owned land (including land owned by another mine) indicated that no exceedances of the TSP or PM₁₀ criteria were recorded (with TSP estimated from PM₁₀), or dust deposition criteria were recorded from the Stage 2 OC4 works between September and December 2015.</p>	Compliant Ongoing								

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	tenant in making informed decisions on the health risks associated with occupying the property, to the satisfaction of the Secretary.																										
	Air Quality Acquisition Criteria																										
20	<p>If particulate matter emissions generated by the Moolarben mine complex exceed the incremental criteria, or contribute an exceedance of the relevant cumulative criteria, in Tables 11, 12 and 13 at any residence on privately-owned land or on more than 25% of any privately-owned land (and a dwelling could be built on that land under existing planning controls), then upon receiving a written request for acquisition from the landowner, the Proponent shall acquire the land in accordance with the procedures in conditions 5 and 6 of Schedule 5.</p> <p><i>Table 11: Long term impact assessment criteria for particulate matter</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>90 µg/m³</td> </tr> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>Annual</td> <td>30 µg/m³</td> </tr> </tbody> </table> <p><i>Table 12: Short term impact assessment criterion for particulate matter</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>24hour</td> <td>50 µg/m³</td> </tr> </tbody> </table> <p><i>Table 13: Long term impact assessment criterion for deposited dust</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Max increase in dep dust level</th> <th>Max total dep dust level</th> </tr> </thead> <tbody> <tr> <td>Deposited dust</td> <td>Annual</td> <td>2g/m/mth</td> <td>4g/m/mth</td> </tr> </tbody> </table> <p><i>Notes to Tables 5-7: a Cumulative (i.e. incremental increase in concentrations due to the complex plus background concentrations due to all other sources); b Incremental impact (i.e. incremental increase in concentrations due to the complex 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; and d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire</i></p>	Pollutant	Averaging Period	Criterion	Total suspended particulate (TSP) matter	Annual	90 µg/m ³	Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m ³	Pollutant	Averaging Period	Criterion	Particulate matter < 10 µm (PM ₁₀)	24hour	50 µg/m ³	Pollutant	Averaging Period	Max increase in dep dust level	Max total dep dust level	Deposited dust	Annual	2g/m/mth	4g/m/mth	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 19 	<p>No requests for acquisition under this condition were received by Moolarben Coal between September and December 2015.</p>	Not triggered
Pollutant	Averaging Period	Criterion																									
Total suspended particulate (TSP) matter	Annual	90 µg/m ³																									
Particulate matter < 10 µm (PM ₁₀)	Annual	30 µg/m ³																									
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	<i>incidents, illegal activities or any other activity agreed by the Secretary</i>			
	Operating Conditions			
21	<p>The Proponent shall:</p> <p>(a) implement best management practice to minimise the off-site odour, fume and dust emissions of the project;</p> <p>(b) implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site;</p> <p>(c) minimise any visible off-site air pollution generated by the project;</p> <p>(d) minimise the surface disturbance of the site;</p> <p>(e) operate a comprehensive air quality management system that uses a combination of predictive meteorological forecasting and real-time air quality monitoring data to guide the day to day planning of mining operations and the implementation of both proactive and reactive air quality mitigation measures to ensure compliance with the relevant conditions;</p> <p>(f) minimise the air quality impacts of the project during adverse meteorological conditions and extraordinary events (see Note d under Table 9); and</p> <p>(g) co-ordinate air quality management on site with the air quality management at the Ulan and Wilpinjong mines to minimise cumulative air quality impacts, to the satisfaction of the Secretary.</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 20 • Air Quality Management Plan, Version 3, Jul 2015 	<p>(a) site inspection and interviews with site personnel was carried out to assess compliance. Emission-generating activities of the mining operation were assessed. The evidence to suggest compliance with (a) is as follows, for each activity:</p> <ul style="list-style-type: none"> - Scrapers are used for topsoil removal to reduce dust generation. Roads are designated, roads are watered. - Drills - Water injection and curtains are used on drilling equipment to control dust generation. Equipment is shutdown if not operating correctly. - Blasting - Procedures and checklists used prior to blasting to reduce dust generation. Water used on surface of shot areas to reduce dust dispersion. - Loading trucks. When excess dust is observed the procedures include minimising drop height, reducing swing rates, slowing production. - Haulage by truck. Operators are encouraged to radio directly to the water carts. Fill points have been appropriately positioned around haul routes. - Dumping to hopper. Dust curtains and sprays inside hopper. Enclosure of hopper on 3 sides and roof. Transfer points are covered. - Dumping to emplacement areas. Options in place to dump high or low, depending on the conditions. - Dozers. Can be moved to alternative dumps if required, such as adverse weather conditions. - Wind erosion. Pre-strip area is minimised. - Toolbox talks viewed which included discussion of air quality and minimising dust. <p>(b) Haul route distances are minimised to reduce fuel consumption.</p> <p>(c) A Trigger Action Response Plan (for dust management) is used. Operations are managed to reduce dust impacts, such as modifying activities during high winds to reduce dust dispersion and visual dust. (No off-site air pollution was observed during the site inspection).</p> <p>(d) From the visual inspection the pre-strip and dump areas were limited to the minimum practicable sizes. Surface disturbance was commensurate with the currently observed level of mining activity.</p>	Compliant Ongoing

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			<p>(e) Personnel receive a daily forecast of expected dust generating conditions and dust dispersion contribution from the site. The forecasts (proactive) are derived from meteorological data available from the Sentinex system to provide reactive elements and air dispersion modelling.</p> <p>(f) Forecasts and observations of meteorological conditions are actively used. Operations are modified in response to adverse conditions.</p> <p>(g) Coordination with Ulan and Wilpinjong mines was observed. Minutes of "Joint Mines" consultation group were viewed. Air quality monitoring data is shared via the Sentinex system.</p>	
	Air Quality Management Plan			
22	<p>The Proponent shall prepare and implement an Air Quality Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with the EPA, and submitted to and approved by the Secretary prior to the commencement of any development on site;</p> <p>(b) describe the measures that would be implemented to ensure compliance with the relevant air quality criteria and operating conditions of this approval;</p> <p>(c) describe the air quality management system;</p> <p>(d) include an air quality monitoring program that: • uses a combination of real-time and supplementary monitors to evaluate the performance of the project against the air quality criteria in this approval; • adequately supports the air quality management system; • evaluates and reports on the: - the effectiveness of the air quality management system; - compliance with the air quality criteria; - compliance with the air quality operating conditions; and • defines what constitutes an air quality incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents.</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 20A • Air Quality Management Plan, July 2015 • Letter from DP&E re Approval of the Air Quality Management Plan version 3, 31 Jul 2015 	<p>The Air Quality Management Plan was prepared to satisfy Project Approval 08_0135 Schedule 3 condition 22 in July 2015 to include management and mitigation measures for both Stage 1 and Stage 2 of the project:</p> <p>(a) The Air Quality Management Plan was submitted to the Secretary in August 2015 for approval (i.e. later than the required date of 31 March 2015). Consultation occurred with the EPA;</p> <p>(b) section 6 describes measures to be implemented to ensure compliance with the relevant air quality criteria and operating conditions;</p> <p>(c) section 6 describes the air quality management system;</p> <p>(d) section 7 presents an air quality monitoring program:</p> <ul style="list-style-type: none"> • section 7.1.2 describes the use real-time and HVAS monitors to evaluate the performance against the air quality criteria; • section 7.1 describes support of the air quality management system; • section 8 provides the Compliance Protocol to evaluate and report on the effectiveness of the air quality management system; and compliance against the air quality operating conditions; • section 11.1 defines what constitutes an air quality incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents. 	Compliant

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	ULAN PUBLIC SCHOOL			
23	The Proponent shall consult with DEC and, if requested: (a) implement agreed reasonable and feasible measures to ameliorate potential noise and/or dust impacts to Ulan Public School; or (b) on a reasonable basis relating to the adverse effect of noise and/or dust from the project, contribute to or meet reasonable costs toward relocating the school.	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 20C Water Sharing Agreement between Moolarben Coal and Ulan Coal Mines, Sparkes & Holmore Lawyers, 10 Aug 2009 Water Management Plan, Version 1, 31 Jul 2015 Site Water Balance, Version 1, Jul 2015 	<p>The Ulan Public School located on Cope Road Ulan to the southeast of the Moolarben Coal operations.</p> <p>(a) Moolarben Coal have not had a request from the Ulan Public School for any noise or dust mitigation measures to be provided. A; and (b) Not triggered</p>	Compliant Ongoing
	METEOROLOGICAL MONITORING			
24	For the life of the project, the Proponent shall ensure that there is a meteorological station in the vicinity of the site that: (a) complies with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales guideline; and (b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the NSW Industrial Noise Policy, unless a suitable alternative is approved by the Secretary following consultation with the EPA	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 20B Air Quality Management Plan, Version 3, section 7.1.4, Jul 2015 AS-2923 Approved Methods for Sampling of Air Pollutants in New South Wales Guideline, DECC EPL 12932 condition M4.2 	<p>There were three weather stations operating on the Moolarben site (WS01, WS02 and WS03) during 2015. The meteorological stations operated by Moolarben Coal provide data for use by the project:</p> <ul style="list-style-type: none"> Weather station (WS01) located at the mine site administration office WS02 located at the Coal Handling and Preparation Plant; and WS03 located on a property on Ulan Road. WS03 is the main weather station linked into the real-time monitoring system for reporting purposes, with WS01 used to supplement weather data as required. <p>The WS03 weather station was inspected during the audit. Minespex undertook a review of the siting of the monitoring units against the guidelines contained in the relevant Australian Standards referenced by the EPA Approved Methods publication in September 2010 and concluded that the siting conformed with AS2923. Data from the weather station is available as 15-minute continuous recording. Sigma-theta data available to estimate temperature lapse rate is also available from the weather station operated by the adjacent Wilpinjong Coal Mine from a 60m tower. The weather stations measure the parameters required by EPL 12932 condition M4.2 for the site in accordance with the approved methods.</p> <p>WS01 and WS03 are linked to the real-time monitoring system to provide real time weather data.</p>	Compliant

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	WATER			
	Water Supply			
25	<p>The Proponent shall ensure that:</p> <p>(a) it has sufficient water for all stages of the project, and if necessary, adjust the scale of operations on site to match its available water supply; and</p> <p>(b) any water supply constraints do not compromise any aspect of the environmental performance of the mine.</p> <p><i>Note: Under the Water Act 1912 and/or the Water Management Act 2000, the Proponent is required to obtain the necessary water licences for the project</i></p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 29 • Water Sharing Agreement between Moolarben Coal and Ulan Coal Mines, Sparkes & Holmore Lawyers, 10 Aug 2009 • Water Management Plan, Version 1, 31 Jul 2015 • Site Water Balance, Version 1, Jul 2015 	<p>The Site Water Balance prepared by WRM Water and Environment and Dundon Consulting in July 2015 for Stage 1 and Stage 2 of the project describes sources and security of water supply, and addresses water demands, water use and management on site including details of water sharing with Ulan Coal Project.</p> <p>A Water Sharing Agreement with Ulan Coal provides for up to 1,000 ML/year of surplus mine water from the Ulan Mine Complex, to be obtained via a dedicated pipeline to the Moolarben Coal CHPP site dam.</p> <p>Water licenses for mine dewatering and groundwater extraction are current.</p>	Compliant Ongoing
	Compensatory Water Supply			
26	<p>The Proponent shall provide a compensatory water supply to any landowner of privately owned land whose water supply is adversely and directly impacted (other than an impact that is negligible) as a result of the project, in consultation with NOW, and to the satisfaction of the Secretary.</p> <p>The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributed to the project. Equivalent water supply should be provided (at least on an interim basis) within 24 hours of the loss being identified.</p> <p>If the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Secretary for resolution.</p> <p>If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alternative compensation to the satisfaction of the Secretary.</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 30 • AEMR 2012-2013 • AEMR 2013-2014 • Groundwater Management Plan, Jul 2015 • Groundwater Monitoring Data 2013 to 2015 	<p>Monthly ground water level monitoring is conducted and data is available on Moolarben Coal website and in the AEMR's.</p> <p>Water levels remained stable since suggesting that private water bores have not been impacted. A number of springs and dams have been identified near to pumping bores. Based on the stability of groundwater levels, it is unlikely that these water sources have been impacted (AEMR 2013-14).</p>	Not triggered
	Water Pollution			
27	Unless an EPL authorises otherwise, the Proponent shall comply with section 120 of the POEO Act.	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 31 • <i>Protection of the Environment Operations Act 1997, section 120</i> 	No licensed discharges have occurred since previous audit (Umwelt April 2013)	Noted
	Water Management Performance Measures			

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28	The Proponent shall comply with the performance measures in Table 11 to the satisfaction of the Secretary.		<p>Performance measures are addressed in the Water Management Plan Attachment A, Surface Water Management Plan, and Groundwater Management Plan.</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="background-color: #d9ead3;">Feature</th> <th style="background-color: #d9ead3;">Performance Measure</th> </tr> </thead> <tbody> <tr> <td>Water Management - General</td> <td>Water Management Plan section 2.4.4 describes the measures implemented to minimise cumulative water impacts in the region. Site Water Balance section 7.3 and Surface Water Management Plan section 8.2 outline water sharing arrangements with Ulan Coal. Site Water Balance section 4 prescribes requirements for minimisation of clean water use on site.</td> </tr> <tr> <td>The Drip</td> <td>Surface Water Management Plan section 4.3 outlines requirements for erosion and sediment control Ground Disturbance Permits completed for disturbance, which outlines erosion and sediment control plan requirements and objectives.</td> </tr> <tr> <td>Mine Sediment Dams</td> <td>Surface Water Management Plan, section 4.3.2.</td> </tr> <tr> <td>Clean water diversion & storage infrastructure</td> <td>Surface Water Management Plan, section 4.3.2. Commitment to minimise the occurrence of dirty or sediment laden water on site observed during audit inspection.</td> </tr> <tr> <td>Mine water storages</td> <td>Surface Water Management Plan, section 8.3.</td> </tr> <tr> <td>Tailings, acid forming and potentially</td> <td>Surface Water Management Plan, section 8.3.</td> </tr> </tbody> </table>	Feature	Performance Measure	Water Management - General	Water Management Plan section 2.4.4 describes the measures implemented to minimise cumulative water impacts in the region. Site Water Balance section 7.3 and Surface Water Management Plan section 8.2 outline water sharing arrangements with Ulan Coal. Site Water Balance section 4 prescribes requirements for minimisation of clean water use on site.	The Drip	Surface Water Management Plan section 4.3 outlines requirements for erosion and sediment control Ground Disturbance Permits completed for disturbance, which outlines erosion and sediment control plan requirements and objectives.	Mine Sediment Dams	Surface Water Management Plan, section 4.3.2.	Clean water diversion & storage infrastructure	Surface Water Management Plan, section 4.3.2. Commitment to minimise the occurrence of dirty or sediment laden water on site observed during audit inspection.	Mine water storages	Surface Water Management Plan, section 8.3.	Tailings, acid forming and potentially	Surface Water Management Plan, section 8.3.	Ongoing
	Feature	Performance Measure																
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Tailings, acid forming and potentially	Surface Water Management Plan, section 8.3.																	
Feature	Performance Measure																	
Water Management - General	<ul style="list-style-type: none"> Minimise cumulative water impacts with the other mines in the region Maximise water sharing with the other mines in the region Minimise the use of clean water on site 																	
The Drip	Nil impact on the water supply to the Drip																	
Construction and operation of linear infrastructure	<ul style="list-style-type: none"> Design, install and maintain erosion and sediment controls generally in accordance with the series Managing Urban Stormwater: Soils and Construction including Volume 1, Volume 2A – Installation of Services and Volume 2C – Unsealed Roads Design, install and maintain the infrastructure within 40m of watercourses generally in accordance with the Guidelines for Controlled Activities on Waterfront Land (DPI 2007), or its latest version Design, installation and maintenance of creek crossings generally in accordance with the Policy and Guidelines for Fish Friendly Waterway Crossings (NSW Fisheries, 2003) and Why Do Fish Need To Cross The Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003), or their latest versions. 																	
Mine Sediment Dams	<ul style="list-style-type: none"> Design, install and maintain the dams generally in accordance with the series <i>Managing Urban Stormwater: Soils and</i> 																	
		<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 32 Water Management Plan, Jul 2015 Site Water Balance, Jul 2015 Surface Water Management Plan, Jul 2015 Groundwater Management Plan, Jul 2015 <i>Deed for the Protection of the Drip</i>, 5 Mar 2015 Letter to DP&E re Deed for Protection of the Drip, 6 Mar 2015 Letter from DP&E re The Drip, 13 Mar 2015 																

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		<i>Construction</i> – Volume 1 and Volume 2E Mines and Quarries		acid forming materials		
	Clean water diversion & storage infrastructure	<ul style="list-style-type: none"> Use best endeavours to upgrade the existing clean water systems to capture and convey the 100 year ARI flood Maximise as far as reasonable and feasible the diversion of clean water around disturbed areas on site 		Chemical and hydrocarbon storage	Surface Water Management Plan, section 8.5.	
	Mine water storages	<ul style="list-style-type: none"> Mine water storage infrastructure is designed to store a 50 year ARI 72hour storm event On-site storages (including tailings dams, mine infrastructure dams, groundwater storage and treatment dams) are suitably lined to comply with a permeability standard of $< 1 \times 10^{-9}$ m/s. 		Nil impact on the water supply to the Drip	A 'Deed for the Protection of The Drip' was submitted to the DP&E on 6 March 2015 in relation to the land tenure and surrounds associated with the natural feature known as 'the Drip' to ensure its conservation. DP&E responded on 13 March 2015 'that the matters referred to in Condition 69 would be resolved upon the Deed having effect.'	
	Tailings, acid forming and potentially acid forming materials	(c) In-pit emplacement, encapsulation or capping to prevent the migration of pollutants beyond the pit shell		Aquatic and riparian ecosystem, including the relevant sections of Murragamaba Creek, Eastern Creek and Wilpinjong Creek	Development of detailed plans for protection of aquatic and riparian ecosystems (including the relevant sections of Murragamaba Creek, Eastern Creek and Wilpinjong Creek) were being prepared at the date of this audit. Diversion works had not yet commenced in December 2015.	
	In-pit emplacement of tailings, acid forming and potentially acid forming materials	<ul style="list-style-type: none"> Emplacement, encapsulation and capping to prevent or minimise the migration of pollutants beyond the pit shell of seepage from out of pit emplacement areas Adequate freeboard within the pit void to minimise the risk of discharge to surface waters 				
	Chemical and hydrocarbon storage	<ul style="list-style-type: none"> Chemical and hydrocarbon products to be stored in banded areas in accordance with the relevant Australian Standard 				
	Nil impact on the water supply to the Drip	<ul style="list-style-type: none"> Increase the overall length of the creek diversions and reduce the overall average bed slope compared to the existing creek alignments Mimic the existing meandering plan form of the low flow channel Include creek corridors which are designed to 				

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		contain flood flows up to the 1 in 100 year ARI • Include low flow channels which are designed to contain a rainfall event of a 1 in 1 year ARI • Include riffle/drop structures that are designed for a 1 in 20 year ARI peak flow • Incorporate erosion control measures based on vegetation and engineering revetments • Incorporate persistent/permanent pools for aquatic habitat • Incorporate seepage control/flow loss measures through sections of the creek lines to be constructed over mine waste backfill • Revegetate with suitable native riparian vegetation species to restore aquatic biodiversity throughout the realignments			Note: Murragamba and 'Eastern' Creeks are ephemeral streams that drain self-contained catchments to Wilpinjong Creek, which is located immediately north of the Project Boundary. Due to their location within the mining footprint for OC4, extensive sections of both streams will need to be diverted for resource extraction. Flood characteristics for the existing creeks indicate that flood flows are retained in-bank for most design events. The ephemeral creeks follow a relatively straight alignment and do not exhibit any notable meander characteristics. The adjoining landforms do not therefore present as significant floodplain structures and are not critical to fluvial processes within either valley.
	Aquatic and riparian ecosystem, including the relevant sections of Murragamba Creek, Eastern Creek and Wilpinjong Creek	<ul style="list-style-type: none"> • Maintain or improve baseline channel stability • Develop site-specific in-stream water quality objectives in accordance with ANZECC 2000 and using the ANZECC Guidelines and Water Quality Objectives in NSW procedures (DECC 2006), or its latest version 	<ul style="list-style-type: none"> • Surface Water Management Strategy (2008) • Moolarben Coal Project 2 -Concept Design for Proposed Diversions of Murragamba Creek and Eastern Creek, Worley Parsons, 25 May 2011 		
	Water Management Plan				

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29	The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with NOW and the EPA, by suitably qualified and experienced persons whose appointment has been approved by the Secretary; (b) be submitted to the Secretary for approval prior to the commencement of any development on site; (c) include reference to the National Water Quality Management Strategy; (d) include detailed performance criteria and describe measure to ensure that the Proponent complies with the Water Management Performance Measures (see Table 14);	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 33(a) • Letter from DP&E re Approval of Dr David Newton (WRM) and Peter Dundon (Dundon Consulting, 11 Feb 2015 • Letter from DP&E re Extension of Time for Submission of Water Management Plan, 31 Mar 2015 • Water Management Plan, Jul 2015 • Letter from EPA re Water Management Plan, 13 May 2015 • Letter from NOW re Water Management Plan, 21 May 2015 • Letter from DP&E re Approval of Water Management Plan, 22 Jul 2015 	<p>A general review and update of the Moolarben Coal Water Management Plan occurred in July 2015 to address the requirements of Project Approval 05_0117 Schedule 3 condition 33(a) MOD 11, and include Project Approval 08_0135 Schedule 3 condition 29 for Stage 2:</p> <p>(a) Water Management Plan Version 3 was prepared by MCO, WRM Water & Environment, and Dundon Consulting, whose appointment has been approved by the Secretary, in consultation with the EPA and NOW;</p> <p>(b) submitted to the Secretary for approval prior to the commencement of any Stage 2 development on site;</p> <p>(c) section 2.4.3 referenced the National Water Quality Management Strategy;</p> <p>(d) performance criteria are detailed in the specific Management Plans and section 4 describes measures to ensure compliance with the Water Management Performance Measures outlined in Project Approval 08_0135 Schedule 3 condition 28 Table 11.</p>	Compliant
29(e)(i)	(e) in addition to the standard requirements for management plans (see Condition 3 of Schedule 5), this plan must include:	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 33(b) 	The Water Management Plan includes the following sub-plans;	Compliant
	(i) Site Water Balance that: <ul style="list-style-type: none"> • includes details of: - sources and security of water supply, including contingency planning for future reporting periods; - water use and management on site, including details of water sharing between neighbouring mining operations; - reporting procedures, including the preparation of a site water balance for each calendar year; • describes the measures that would be implemented to: - minimise clean water use on site; - maximise water sharing with the other mines in the region; 	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 33(b)(i) • Site Water Balance, Version 1, Jul 2015 • Letter from DP&E re Approval of Site Water Balance, 31 Jul 2015 	<p>The Site Water Balance was prepared by WRM Water and Environment and Dundon Consulting in July 2015 for Stage 1 and Stage 2 of the project includes:</p> <ul style="list-style-type: none"> • section 7 - describes sources and security of water supply, including contingency planning for future reporting periods. The Site Water Balance prepared by WRM Water and Environment and needs to be updated with current licences; • sections 4 to 7 - address water demands, water use and management on site, including details of water sharing between neighbouring mining operations; and the Site Water Balance section 9 describes reporting procedures, including preparation for a site water balance for each calendar year; • section 4.3 and 7.4 describe measures to be implemented to minimise clean water use on site; and 	Compliant

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			<ul style="list-style-type: none"> section 7.3 - addresses water sharing with the other mines in the region; 	
29(e)(ii)	(ii) Surface Water Management Plan, that includes: <ul style="list-style-type: none"> detailed baseline data on water flows and quality in the water bodies that could be affected by the project; a detailed description of the water management system on site; detailed plans, including design objectives and performance criteria, for the: <ul style="list-style-type: none"> in-pit emplacement areas for tailings, acid forming and potentially acid forming materials; - final voids (see the Rehabilitation Objectives in Table 13); detailed performance criteria for the following, including trigger levels for investigating any potentially adverse impacts associated with the project: - the water management system; - downstream surface water quality; - downstream flooding impacts and - stream and riparian vegetation health for Moolarben Creek, Bora Creek, Murragamba Creek, Eastern Creek, Wilpinjong Creek and the Goulburn River; a program to monitor and report on: - the effectiveness of the water management system; and - surface water flows and quality, stream and riparian vegetation health in the watercourses that could be affected by the project; and - downstream flooding impacts; reporting procedures for the results of the monitoring program; and a plan to respond to any exceedances of the performance criteria, and mitigate any adverse surface water impacts of the project; 	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 33(b)(ii) Surface Water Management Plan, Version 1, Jul 2015 Letter from DP&E re Approval of Surface Water Management Plan, 31 Jul 2015 	The Surface Water Management Plan Version 1 approved by DP&E on 31 July 2015 includes: <ul style="list-style-type: none"> section 3 Surface Water and Environmental Setting provides detailed baseline data on water flows and quality in the water bodies that could be affected by the project; section 4 Surface Water Management System provides a detailed description of the water management system on site; detailed plans, including design objectives and performance criteria, for the creek diversions in consultation with relevant government authorities will be finalised prior to the commencement of Murragamba or Eastern creek diversion works.: <ul style="list-style-type: none"> in-pit emplacement areas for tailings, acid forming and potentially acid forming materials; section 8.5 addresses final voids (see also the Rehabilitation Objectives in Table 13); section 5 Surface Water Impact Trigger Values describes performance criteria including trigger levels for investigating any potentially adverse impacts associated with the project on the water management system; downstream surface water quality; downstream flooding impacts and stream and riparian vegetation health for Moolarben Creek, Bora Creek, Murragamba Creek, Eastern Creek, Wilpinjong Creek and the Goulburn River; section 7 Surface Water Monitoring Program presents a program to monitor and report on the effectiveness of the water management system; surface water flows and quality, stream and riparian vegetation health in the watercourses and downstream flooding impacts; sections 9 and 10 provides reporting procedures for the results of the monitoring program; and section 6 provides a plan to respond to any exceedances of the performance criteria, and mitigate any adverse surface water impacts of the project; 	Compliant
29(e)(iii)	Groundwater Management Plan, that includes:	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 33(b)(iii) 	A Groundwater Management Plan prepared by MCO and Dundon Consulting to satisfy to satisfy Project	Compliant

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	<ul style="list-style-type: none"> • detailed baseline data on groundwater levels, yield and quality in the region and privately-owned groundwater bores that could be affected by the project; • groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; • a program to monitor and report on: - groundwater inflows to the underground and open cut mining operations; - the seepage/leachate from water storages, emplacements, backfilled voids and final voids; - background changes in groundwater yield/quality against mine-induced changes; - the permeability, hydraulic gradient, flow direction and connectivity of the palaeochannel and flows within Wilpinjong Creek (requires 3 additional monitoring piezometers within the main trunk of the paleochannel between the open cut 4 boundary and Wilpinjong Creek); - impacts of the project on: - regional and local (including alluvial) aquifers; - groundwater supply of potentially affected landowners; and - groundwater dependent ecosystems (including the Drip) and riparian vegetation; - a program to validate the groundwater model for the project, and compare against monitoring results with modelled predictions; and • a plan to respond to any exceedances of the groundwater assessment criteria. 	<ul style="list-style-type: none"> • Groundwater Management Plan, Version 1, Jul 2015 • Letter from DP&E re Approval of Groundwater Management Plan, 31 Jul 2015 	<p>Approval Project Approval 05_0117 condition 33(b)(iii) and Project Approval 08_0135 Schedule 3 condition 29(e)(iii) was approved by DP&E on 31 July 2015 and includes:</p> <ul style="list-style-type: none"> • sections 3 provides detailed baseline data on groundwater levels, yield and quality in the region and privately-owned groundwater bores that could be affected by the project. Groundwater Management Plan section 4 and Attachment 1 contain groundwater monitoring schedule and baseline data for monitoring bores and Attachment 2 contains information regarding baseline data of private bores; • section 8 presents groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; • section 6 presents a groundwater monitoring program for: - groundwater inflows to the underground and open cut mining operations; - the seepage/leachate from water storages, emplacements, backfilled voids and final voids (section 6.1.4); background changes in groundwater yield/quality against mine-induced changes (section 6.1); the permeability, hydraulic gradient, flow direction and connectivity of the palaeochannel and flows within Wilpinjong Creek (requires 3 additional monitoring piezometers within the main trunk of the paleochannel between the open cut 4 boundary and Wilpinjong Creek) (section 6.4); impacts of the project on regional and local (including alluvial) aquifers (section 5.2); groundwater supply of potentially affected landowners; and groundwater dependent ecosystems (including the Drip) and riparian vegetation(section 7) for the project, and compare against monitoring results with modelled predictions (section 5). Re-calibration occurred in 2012 and updated in Modification (08_0135). Groundwater model will be validated 2 years from coal extraction, next required in June 2018.; and • Section 8.2 and 10 present processes to respond to any exceedances of the groundwater assessment criteria. 	Compliant Ongoing
29(e)(iv)	(iv) a protocol that has been prepared in consultation with the owners of the Ulan and Wilpinjong mines to:	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 33(b)(iv) 	A Data Sharing Deed signed on 27 March 2012 provides the protocol for sharing of environmental	Compliant Ongoing

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	<ul style="list-style-type: none"> • minimise cumulative water quality impacts; • review opportunities of increased water sharing between these projects; • co-ordinate water quality monitoring programs as far as practicable; • undertake joint investigations/studies in relation to complaints/exceedances of trigger levels where cumulative impacts are considered likely; and • co-ordinate modelling programs for validation, re-calibration and re-running of groundwater models. 	<ul style="list-style-type: none"> • Groundwater Management Plan, Version 1, section 8.4, Jul 2015 • Data Sharing Deed, 27 Mar 2012 • Joint Mines Consultation Commitments, 29 Oct 2015 	<p>monitoring data between Moolarben Coal, Ulan Coal and Wilpinjong Coal.</p> <p>Six-monthly meetings are held between the parties to discuss and implement integrated monitoring programs to assess any cumulative water quality impacts, co-ordinate water quality monitoring programs as far as practicable, undertake joint investigations/studies if cumulative impacts are considered likely; and co-ordinate modelling programs for validation, re-calibration and re-running of groundwater models.</p>																
	BIODIVERSITY																		
	Biodiversity Offset Strategy																		
30	<p>The Proponent shall implement the biodiversity offset strategy for the project summarised in Table 15 and shown conceptually in Appendix 7 to the satisfaction of the Secretary.</p> <p><i>Table 15: Summary of Biodiversity Offset Strategy</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Area</th> <th style="width: 55%;">Offset Type</th> <th style="width: 30%;">Ha</th> </tr> </thead> <tbody> <tr> <td>Dun Dun East</td> <td>Enhance existing vegetation: • 1368 ha of native vegetation • 408 ha of EEC Regenerate: • 380 ha of existing grassland to forest/woodland</td> <td style="text-align: center;">1776</td> </tr> <tr> <td>Dun Dun West</td> <td>Enhance existing vegetation: • 837 ha of native vegetation • 122 ha of EEC Regenerate: • 307 ha of existing grassland to forest/woodland</td> <td style="text-align: center;">959</td> </tr> <tr> <td>Avisford 1</td> <td>Enhance existing vegetation: • 300 ha of native vegetation • 102 ha of EEC Regenerate: • 7 ha of existing grassland to forest/woodland</td> <td style="text-align: center;">402</td> </tr> <tr> <td>Avisford 2</td> <td>Enhance existing vegetation: • 203 ha of native vegetation • 5 ha of EEC</td> <td style="text-align: center;">208</td> </tr> </tbody> </table>	Area	Offset Type	Ha	Dun Dun East	Enhance existing vegetation: • 1368 ha of native vegetation • 408 ha of EEC Regenerate: • 380 ha of existing grassland to forest/woodland	1776	Dun Dun West	Enhance existing vegetation: • 837 ha of native vegetation • 122 ha of EEC Regenerate: • 307 ha of existing grassland to forest/woodland	959	Avisford 1	Enhance existing vegetation: • 300 ha of native vegetation • 102 ha of EEC Regenerate: • 7 ha of existing grassland to forest/woodland	402	Avisford 2	Enhance existing vegetation: • 203 ha of native vegetation • 5 ha of EEC	208	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 34 • Biodiversity Management Plan, Version 1, Jul 2015 	<p>A Biodiversity Offset Strategy is being developed progressively with additions and revision inserted into the Biodiversity Management Plan to address the requirements of Project Approval 08_0135 Schedule 3 Conditions 30 and to address offset impacts associated with development of the Moolarben Coal Complex.</p> <p>Subsequent revisions of the Biodiversity Management Plan will incorporate the Biodiversity Offset Strategy requirements under Project Approval 05_0117 Schedule 3 Condition 36 and Project Approval 08_0135 Schedule 3 Condition 39 including a detailed monitoring program, performance measures, completion criteria and remedial actions.</p>	Compliant Ongoing
Area	Offset Type	Ha																	
Dun Dun East	Enhance existing vegetation: • 1368 ha of native vegetation • 408 ha of EEC Regenerate: • 380 ha of existing grassland to forest/woodland	1776																	
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	Ulan 18	Enhance existing vegetation: • 291 ha of native vegetation • 48 ha of EEC Regenerate: • 178 ha of existing grassland to forest/woodland	339		
	Onsite Offset	Enhance existing vegetation: • 420 ha of native vegetation • 51 ha of EEC Regenerate: • 199 ha of existing grassland to forest/woodland	471		
	Old Bobadeen	Enhance existing vegetation: Enhance existing vegetation: • 90 ha of native vegetation • 400 ha of EEC Regenerate: • 409 ha of existing grassland to forest/woodland	490		
	Libertus	Enhance existing vegetation: • 160 ha of native vegetation • 18 ha of EEC Regenerate: • 22 ha of existing grassland to forest/woodland	178		
	<p><i>Notes:</i></p> <ul style="list-style-type: none"> • To identify the areas referred to in Table 15, see the applicable figures in Appendix 7; • The amount of native vegetation includes forest/woodland and grassland but excludes woodland and grassland EECs. The combined total of native vegetation and EEC on each property equates to the minimum size available as an offset; • The amount of grassland available for regeneration includes sparsely vegetated woodland; and • The strategy includes the regeneration of existing grassland areas within each offset to woodland communities. 				
	Regeneration Areas				
31	The Proponent shall ensure that the regeneration of vegetation within the specified areas of the biodiversity offset strategy is focused on the re-establishment of flora species typical of the White Box Yellow Box Blakely's Red Gum Woodland as defined under the TSC Act and White Box Yellow Box Blakely's Red Gum Grassy Woodland as defined under the EPBC Act.		<ul style="list-style-type: none"> • Biodiversity Management Plan, 31 Jul 2015 	Management measures to ensure the regeneration of vegetation within the offset areas is focused on the reestablishment of flora species typical of the White Box Yellow Box Blakely's Red Gum Woodland as defined under the TSC Act and White Box Yellow Box Blakely's Red Gum Grassy Woodland as defined under the EPBC Act is addressed in the Biodiversity	Ongoing

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			Management Plan section 9 Biodiversity Offset Strategy.	
32	The Proponent shall use its best endeavours to work with the CLD to identify and implement any reasonable and feasible regeneration of vegetation on Crown lands in the vicinity of Pyramul Creek immediately to the south of the 'Dun Dun East' biodiversity offset area.		Moolarben Coal will work with Crown Lands Department to identify reasonable re-generation of vegetation on Crown Lands in the vicinity of Pyramul Creek immediately to the south of the 'Dun Dun East' biodiversity offset area.	Noted
	Munghorn Gap Nature Reserve			
33	The Proponent shall ensure that: (a) the boundary of the project with the Munghorn Gap Nature Reserve is identified and surveyed prior to the commencement of open cut mining; and (b) a 50 metre buffer zone is maintained between the open cut mining and the Munghorn Gap Nature Reserve during the life of the project.		The boundary of the Moolarben Coal project and the Munghorn Gap Nature Reserve was identified prior to the commencement of site establishment for OC4.	Compliant
	Habitat for Threatened Fauna Species			
34	The Proponent shall ensure that the biodiversity offset strategy provides suitable habitat for all the threatened fauna species confirmed and identified as being potentially present in the disturbance areas. <i>Note: The threatened fauna species confirmed and identified as being potentially present in the disturbance areas are listed in Appendix 7</i>			Noted
	Regent Honeyeater Study			
35	Within 6 months of the date of this approval, the Proponent shall calculate: (a) described in condition 30 above, in accordance with the NSW Biodiversity Offset Policy for Major Projects, and to the satisfaction of OEH.	<ul style="list-style-type: none"> • NSW Biodiversity Offset Policy for Major Projects, OEH, 2014 • Framework for Biodiversity Assessment (FBA), OEH 2014 • Regent Honeyeater Offset Calculation, EcoLogical Australia, 28 Jul 2015 • Letter to DP&E re Regent Honeyeater Offset Calculations, 31 Jul 2015 • Letter from OEH re Regent Honeyeater Offset Calculations, Undated 	Yancoal (Moolarben Coal) commissioned EcoLogical Australia to address the requirements of condition 35 and 36 consistent with the NSW Office of Environment and Heritage (OEH) NSW Biodiversity Offsets Policy for Major Projects (OEH 2014a) and Framework for Biodiversity Assessment (FBA) (OEH 2014b). The Regent Honeyeater Offset Calculation Report dated 28 July 2015: (a) addressed the impacts generated by the project on the Regent Honeyeater in species credits (page 4); and (b) the species credits that would be generated for the Regent Honeyeater from implementation of the offset strategy described in condition 30 above (page 5), in accordance with the NSW Biodiversity Offset Policy for Major Projects.	Compliant

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36	<p>If the calculations carried out in condition 35 above identify a shortfall of species credits to offset the impacts of the project, then within 24 months of the date of this approval, the Proponent shall satisfy the outstanding offset requirements to the satisfaction of OEH. This can be achieved by one or more of the following:</p> <p>(a) acquiring or retiring credits under the Biobanking Scheme in the TSC Act;</p> <p>(b) making payments into an offset fund that has been developed by the NSW Government; and/or</p> <p>(c) providing supplementary measures.</p>		In ELA's expert opinion, the offset requirements for potential Regent Honeyeater habitat, as calculated by the FBA, are met by the Biodiversity Offset Strategy and the mine site rehabilitation. Therefore, additional offsets consistent with Project Approval 08_0135 Schedule 3 condition 36 are not required.	Not triggered
	Vegetation Information System Mapping Data			
37	At the request of OEH, the Proponent shall provide OEH with detailed vegetation mapping and survey data associated with its lands to be conserved in perpetuity in accordance with this approval. This information is to be provided free of charge.			Noted
	Long Term Security of Biodiversity Offsets			
38	<p>By 31 December 2015, unless the Secretary agrees otherwise, the Proponent shall make suitable arrangements to protect the offset areas in Table 15 in perpetuity, in consultation with OEH and to the satisfaction of the Secretary.</p> <p><i>Note: The preferred mechanisms for the provision of long-term conservation security are via Biobanking Arrangements and additions to the OEH Estate</i></p>	<ul style="list-style-type: none"> • Project 05_0117 Schedule 3 condition 35 • Letter to DP&E re Offset Security and Conservation Bond Extension, 27 Apr 2015 • Letter from DP&E re Extension of Time for Offset Security and Conservation Bond, 27 Apr 2015 • Letter to DP&E re Status of Conservation Bond, 26 Nov 2015 • Letter to DP&E re Project Approval 05_0117 Schedule 3 condition 35 for Extension of Submission of the Long Term Security Offset, 8 Dec 2015 	<p>Arrangements to provide long-term security for the offset areas described in Project Approval 05_0117 Schedule 3 condition 35 - Table 12 have been developed in consultation with OEH (NWPS) and the documentation prepared and was submitted to the Secretary for approval in December 2015. Moolarben Coal requested DP&E for an extension for the submission of the arrangements for long term security of the offsets to 31 March 2016, in correspondence on 8 December 2015.</p>	Compliant Ongoing
	Biodiversity Management Plan			

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36	<p>The Proponent shall prepare and implement a Biodiversity Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared in consultation with OEH, and submitted to and approved by the Secretary prior to the commencement of any development on site;</p> <p>(b) describe the short, medium, and long term measures that would be implemented to: • manage the remnant vegetation and fauna habitat on the site; and • implement the biodiversity offset strategy; • integrate the implementation of the biodiversity offset strategy to the greatest extent practicable with the rehabilitation of the site;</p> <p>(c) include detailed performance and completion criteria for evaluating the performance of the biodiversity offset strategy, and triggering remedial action (if necessary); for monitoring, reviewing, and implementing the plan.</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 36 • Letter to OEH re Input to Biodiversity Management Plan, 20 Mar 2015 • Biodiversity Management Plan, 31 Jul 2015 • Letter from DP&E re Staged Biodiversity Management Plan, 20 Jul 2015 • Letter from DP&E re Approval of Biodiversity Management Plan, Version 1, 31 Jul 2015 	<p>The Biodiversity Management Plan was prepared by MCO with input from EcoLogical Australia to satisfy the requirements of Project Approval 05_0117 Schedule 3 condition 36 and Project Approval 08_0135 Schedule 3 condition 39.</p> <p>The Biodiversity Management Plan:</p> <p>(a) was prepared in consultation with OEH and submitted to the Secretary for approval. The Biodiversity Management Plan was approved by DP&E on 31 July 2015;</p> <p>(b) sections 6 and 7 and section 10 - Table 4 describe the short, medium, and long term measures to be implemented to:</p> <ul style="list-style-type: none"> • section 6 addresses management remnant vegetation and habitat on the site and in the offset areas; • section 6 addresses management biodiversity impacts of the project; and • section 9 outlines the planning for the implementation of the biodiversity offset strategy, including detailed performance and completion criteria; <p>(c) section 10 addresses performance and completion criteria for evaluating the performance of the biodiversity offset strategy, and triggering remedial action (if necessary);</p>	Compliant Ongoing
	<p>(d) include a detailed description of the measures that would be implemented over the next 3 years for: • enhancing the quality of existing vegetation and fauna habitat in the biodiversity offset areas; • creating native vegetation and fauna habitat in the biodiversity offset areas and rehabilitation area through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary); • maximising the salvage of resources within the approved disturbance area - including vegetative and soil resources – for beneficial reuse in the enhancement of the biodiversity offset areas or rehabilitation area; • collecting and propagating seed; • protecting vegetation and fauna habitat outside the approved disturbance area on-site; • minimising the impacts on fauna on site, including undertaking pre-clearance surveys; • managing any potential conflicts between the proposed enhancement works in the biodiversity offset strategy areas and any</p>		<p>(d) sections 4, 5 6 and 7 present a description of the measures that would be implemented for:</p> <ul style="list-style-type: none"> • enhancing the quality of existing vegetation and fauna habitat; and restoring native vegetation and fauna habitat on the biodiversity offset areas through focusing on assisted natural regeneration, targeted vegetation establishment and the introduction of naturally scarce fauna habitat features (where necessary), and managing any potential conflicts between the proposed restoration works in the biodiversity areas and any Aboriginal heritage values (both cultural and archaeological) will be addressed in Extraction Plans and subsequent revisions of this Biodiversity Management Plan; 	Compliant Ongoing

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	<p>Aboriginal heritage values (both cultural and archaeological) in these areas; • managing salinity; • controlling weeds and feral pests; • controlling erosion; • managing grazing and agriculture on site; • controlling access; and • bushfire management; (e) include a seasonally-based program to monitor and report on the effectiveness of these measures, and progress against the detailed performance and completion criteria; (f) identify the potential risks to the successful implementation of the biodiversity offset strategy, and include a description of the contingency measures that would be implemented to mitigate against these risks; and (g) include details of who would be responsible</p>		<ul style="list-style-type: none"> • section 4.2.3 and 7.6 address maximising salvage of resources within the approved disturbance area (including vegetative, soil and cultural heritage resources) for beneficial reuse in the enhancement of the biodiversity areas or rehabilitation area; • section 7.1 addresses rehabilitating the environmental bunds on site as soon as practicable and maintaining the landscaping on the bunds once it has been established; • section 5 addresses collecting and propagating seed; • sections 4.2 and 4.3 address minimising the impacts on fauna on site, including undertaking pre-clearance surveys; • section 7.2 addresses managing salinity; • section 7.3 addresses controlling weeds and feral pests; • section 7.4 and 7.4 address controlling erosion; • section 7.6 addresses managing grazing and agriculture on site; • section 7.7 addresses controlling access; and • section 7.8 addresses bushfire management; <p>(e) section 8 includes monitoring program to report on the effectiveness of biodiversity management measures, and progress against the detailed performance and completion criteria;</p> <p>(f) potential risks to the successful implementation of the biodiversity offset strategy will be addressed in future revisions of the Biodiversity Management Plan, and section 11 describes the contingency measures that would be implemented to mitigate against these risks; and</p> <p>(g) include details of who would be responsible for monitoring, reviewing, and implementing the plan.</p>	
	Conservation Bond			

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37	<p>By 31 December 2015, unless otherwise agreed by the Secretary, the Proponent shall lodge a Conservation Bond with the Department to ensure that the biodiversity offset strategy is implemented in accordance with the performance and completion criteria of the Biodiversity Management Plan. The sum of the bond shall be determined by:</p> <p>(a) calculating the full cost of implementing the biodiversity offset strategy (other than land acquisition costs); and</p> <p>(b) employing a suitably qualified quantity surveyor to verify the calculated costs, to the satisfaction of the Secretary.</p> <p>If the offset strategy is completed generally in accordance with the completion criteria in the Biodiversity Management Plan to the satisfaction of the Secretary, the Secretary will release the bond.</p> <p>If the offset strategy is not completed generally in accordance with the completion criteria in the Biodiversity Management Plan, the Secretary will call in all, or part of, the conservation bond, and arrange for the satisfactory completion of the relevant works.</p> <p><i>Notes:</i></p> <ul style="list-style-type: none"> • <i>Alternative funding arrangements for long-term management of the Biodiversity Offset Strategy, such as provision of capital and management funding as agreed by OEHL as part of a Biobanking Agreement or transfer to conservation reserve estate can be used to reduce the liability of the conservation and biodiversity bond, and</i> • <i>The sum of the bond may be reviewed in conjunction with any revision to the biodiversity offset strategy.</i> 	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 37 • Letter to DP&E re Offset Security and Conservation Bond Extension, 27 Apr 2015 • Letter from DP&E re Extension of Time for Offset Security and Conservation Bond, 27 Apr 2015 • Letter to DP&E re Status of Conservation Bond, 26 Nov 2015 	<p>A Conservation Bond for the biodiversity offset strategy has been calculated for the Moolarben Coal offset areas for the performance and completion criteria of the Biodiversity Management Plan. The sum of the bond was determined by:</p> <p>(a) calculating the full cost of implementing the biodiversity offset strategy (other than land acquisition costs); and</p> <p>(b) the calculated costs were verified by qualified quantity surveyor and agreed with the OEHL (NWPS).</p> <p>Moolarben Coal requested an extension of time for the lodgement of the Offset Security and Conservation Bond.</p> <p>A letter was submitted to the DP&E on 26 November 2015 describing the status of the Conservation Bond.</p>	Compliant
	HERITAGE			
	Protection of Aboriginal Heritage Items			
41	<p>Unless otherwise authorised under the NP&W Act, the Proponent shall ensure that the project does not cause any direct or indirect impact on the identified Aboriginal heritage items located outside the approved disturbance area of the project.</p> <p><i>Note: Identified Aboriginal heritage items are listed in Appendix 9.</i></p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 38 	<p>No inadvertent disturbance on the identified Aboriginal heritage items located outside the approved disturbance area of the project have been reported by Moolarben Coal.</p>	Noted
	Additional Survey			
42	<p>Prior to carrying out any development on site, unless the Secretary agrees otherwise, the Proponent shall:</p>	<ul style="list-style-type: none"> • Letter to OEHL re Additional Survey, 26 Feb 2015 • Heritage Management Plan, Jul 2015 	<p>(a) Additional archaeological survey/inspection of the green fields surface area in the vicinity of the Stage 2 run-of-mine coal facilities and the</p>	Compliant

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance																								
	(a) carry out additional archaeological survey work in the vicinity of the proposed Stage 2 ROM Coal Facilities in consultation with OEH and Aboriginal stakeholders; (b) undertake a detailed analysis of the significance of the heritage items that are identified during the survey; and (c) recommend measures to avoid and/or mitigate the impacts of the project on these heritage items, to the satisfaction of the Secretary.		northern section of the proposed haul road was undertaken and OEH advised on 26 Feb 2015; (b) An analysis / assessment of the significance of the heritage items identified during the survey is included in the revised Heritage Management Plan; and (c) Suitable recommended measures to avoid and/or mitigate the impacts of the Moolarben Coal Complex on these heritage items are incorporated in the Moolarben Coal Complex-wide revised Heritage Management Plan.																									
43	Within 12 months of the date of this approval, unless the Secretary agrees otherwise, the Proponent shall carry out a detailed investigation into the Aboriginal cultural heritage values of the southern portion of the Dun Dun East biodiversity offset area (Lot 79, DP 704159), in the vicinity of Pyramul Creek, in consultation with OEH and Aboriginal stakeholders, and to the satisfaction of the Secretary.		Investigation of the Aboriginal cultural heritage values of the southern portion of the Dun Dun East biodiversity offset area (Lot 79, DP 704159), in the vicinity of Pyramul Creek, was in progress at time of audit (December 2015). (The report is required to be submitted to the Secretary by 30 January 2016).	Compliant Ongoing																								
	Heritage Conservation Areas																											
44	<p>The Proponent shall implement the heritage conservation strategy described in the EA, summarised in Table 16 and shown conceptually in Appendix 8, to the satisfaction of the Secretary.</p> <p><i>Table 16: Summary of the Heritage Conservation Strategy</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Area</th> <th style="width: 33%;">Sites</th> <th style="width: 33%;">Ha</th> </tr> </thead> <tbody> <tr> <td>Murragamba Creek Management Area</td> <td>40 sites - 5 of high significance, 6 of medium and 29 of low</td> <td style="text-align: center;">154</td> </tr> <tr> <td>Powers Conservation Area</td> <td>10 sites – 1 of high significance, 2 of medium and 7 of low significance</td> <td style="text-align: center;">63</td> </tr> <tr> <td>Red Hills Conservation Area</td> <td>42 sites – 2 of high significance, 9 of medium and 31 of low significance</td> <td style="text-align: center;">107</td> </tr> </tbody> </table>	Area	Sites	Ha	Murragamba Creek Management Area	40 sites - 5 of high significance, 6 of medium and 29 of low	154	Powers Conservation Area	10 sites – 1 of high significance, 2 of medium and 7 of low significance	63	Red Hills Conservation Area	42 sites – 2 of high significance, 9 of medium and 31 of low significance	107	<ul style="list-style-type: none"> Environmental Assessment (2009), section 5.9 Preferred Project Report, Appendix J Project Approval 08_0135 Appendix 8 	<p>The following works have been implemented by Moolarben Coal at the date of this audit:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Area</th> <th style="width: 33%;">Sites</th> <th style="width: 33%;">Action</th> </tr> </thead> <tbody> <tr> <td>Murragamba Creek Management Area</td> <td>40 sites - 5 of high significance, 6 of medium and 29 of low</td> <td>Fencing in progress at time of audit</td> </tr> <tr> <td>Powers Conservation Area</td> <td>10 sites – 1 of high significance, 2 of medium and 7 of low significance</td> <td>Scheduled for completion by 30 June 2017</td> </tr> <tr> <td>Red Hills Conservation Area</td> <td>42 sites – 2 of high significance, 9 of medium and 31 of low significance</td> <td>Survey and fencing complete</td> </tr> </tbody> </table>	Area	Sites	Action	Murragamba Creek Management Area	40 sites - 5 of high significance, 6 of medium and 29 of low	Fencing in progress at time of audit	Powers Conservation Area	10 sites – 1 of high significance, 2 of medium and 7 of low significance	Scheduled for completion by 30 June 2017	Red Hills Conservation Area	42 sites – 2 of high significance, 9 of medium and 31 of low significance	Survey and fencing complete	Compliant Ongoing
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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance
	<i>Note: To identify the areas referred to in Table 16, see the applicable figures in Appendix 8.</i>			
	Long Term Security of Heritage Conservation Areas			
45	Within 18 months of approval of the Heritage Management Plan, unless the Secretary agrees otherwise, the Proponent shall make suitable arrangements to protect the heritage conservation areas in Table 16 in perpetuity to the satisfaction of the Secretary.	<ul style="list-style-type: none"> Heritage Management Plan, 22 Jun 2015 	The Heritage Management Plan was approved by DP&E on 22 June 2015. Arrangements for permanent conservation to protect the heritage conservation areas had commenced at the date of this audit and were being progressed.	Not yet triggered
	Heritage Management Plan			
46	<p>The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Secretary. This plan must:</p> <p>(a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary;</p> <p>(b) be prepared in consultation with OEH and the Aboriginal stakeholders (in relation to the management of Aboriginal heritage values);</p> <p>(c) be submitted to and approved by the Secretary prior to construction, unless the Secretary agrees otherwise;</p> <p>(d) include a description of the measures that would be implemented for:</p> <ul style="list-style-type: none"> managing the discovery of human remains or previously unidentified heritage items on site; and ensuring any workers on site receive suitable heritage inductions prior to carrying out any development on site, and that suitable records are kept of these inductions; <p>(e) include the following for the management of Aboriginal Heritage:</p> <ul style="list-style-type: none"> a detailed plan of management for the Murrumbidgee Creek, Red Hills and Powers conservation areas; a description of the measures that would be implemented for: <ul style="list-style-type: none"> protecting, monitoring and/or managing (including any proposed archaeological investigations and/or salvage measures) the heritage items identified in the tables in Appendix 8; managing the discovery of previously unidentified Aboriginal items on site; conserving the sites outside the surface disturbance area (see Appendix 8), including measures that would be implemented to secure, analyse and record the sites at risk of subsidence; maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site and within any Aboriginal heritage conservation areas; ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on site and 	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 39 Heritage Management Plan, Jul 2008 Letter from DP&E re Approval of Suitably Qualified and Experienced Persons for the Heritage Management Plan, 11 Feb 2015 Heritage Management Plan Revision 4, Jun 2015 Letter from DP&E re Approval of Heritage Management Plan, 22 Jun 2015 	<p>A Heritage Management Plan Version 4 was prepared to satisfy the requirements of Project Approval 05_0117 Schedule 3 condition 39 and Project Approval 08_0136 Schedule 3 condition 46 and approved on 22 June 2015.</p> <p>This Heritage Management Plan:</p> <p>(a) was prepared by suitably qualified and experienced persons (Dr Andrew Sneddon and Dr Matthew Whincop of the University of Queensland Culture and Heritage Unit) whose appointment was endorsed by the Secretary on 11 February 2015;</p> <p>(b) was prepared in consultation with OEH and the Registered Aboriginal Parties stakeholders;</p> <p>(c) Heritage Management Plan Version 4 was submitted to the Secretary of DP&E and approved by the Secretary of DP&E on 22 June 2015 prior to Stage 2 construction;</p> <p>(d) include a description of the measures that would be implemented for:</p> <ul style="list-style-type: none"> sections 5.10 and 5.11 address managing the discovery of human remains or previously unidentified heritage items on site; and section 7 outlines suitable heritage inductions are provided for any workers on site prior to carrying out any development on site. Two Inductions are given, a general and a specific. These records are held in 'Pegasus' system; <p>(e) include the following for the management of Aboriginal Heritage:</p> <ul style="list-style-type: none"> section 5.2.1 provides a plan of management for the Murrumbidgee Creek, Red Hills and Powers conservation areas; 	Compliant

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	<p>within any Aboriginal heritage conservation areas; and • a strategy for the storage of any heritage items salvaged on site, both during the project and in the long term; (f) include a detailed plan for the implementation of the mitigation and management measures outlined for the specified heritage items in Appendix 9, including archival recording, historical research and archaeological assessment prior to any disturbance.</p>	 <p>Keeping Place for Aboriginal heritage items salvaged on Moolarben Coal Complex site, observed during the site inspection.</p>	<ul style="list-style-type: none"> • section 5 and Appendix D provide a description of the measures implemented for: - protecting, monitoring and/or managing (including any proposed archaeological investigations and/or salvage measures) the heritage items identified in the tables in Appendix 8; - managing the discovery of previously unidentified Aboriginal items on site; - conserving the sites outside the surface disturbance area (see Appendix 8), including measures that would be implemented to secure, analyse and record the sites at risk of subsidence; - maintaining and managing reasonable access for Aboriginal stakeholders to heritage items on site and within any Aboriginal heritage conservation areas; - ongoing consultation with the Aboriginal stakeholders in the conservation and management of Aboriginal cultural heritage both on site and within any Aboriginal heritage conservation areas; and • section 5.13 provides a strategy for the storage of any heritage items salvaged on site, both during the project and in the long term; (f) section 6 describes the plan for the mitigation and management measures outlined for the specified heritage items in Appendix 9, including archival recording, historical research and archaeological assessment prior to any disturbance. 	
	TRANSPORT			
	Ulan Road Strategy			
47	<p>The Proponent shall:</p> <p>(a) work with Council and the owners of the Ulan and Wilpinjong mines to develop a detailed plan for the implementation of the Ulan Road Strategy; and</p> <p>(b) make financial contributions towards the implementation of this detailed plan, in accordance with the requirements in the plan, with its share of the mining companies' contribution for implementation of the strategy to be proportionate to its share of mining-related traffic to be generated on the road during the life of the strategy.</p> <p>If there is any dispute between the various parties involved in either the development of the detailed plan or the implementation of the strategy, then any of the parties may refer the matter to the Secretary for resolution.</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 56  <p>Ulan Road upgrade as part of the Ulan Road Strategy</p>	<p>Moolarben Coal had made financial contributions to the development of the Ulan Road Strategy and works were being progressively undertaken by the Council.</p>  <p>Ulan Road upgrade works part of the Ulan Road Strategy, at the date of this audit.</p>	<p>Compliant Ongoing</p>

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance
	Ulan-Wollar Road Site Access			
48	The Proponent shall design, construct, and maintain the site access intersection off Ulan-Wollar Road to the satisfaction of Council.		The Ulan-Wollar Road intersection to the Moolarben Coal site had been constructed to the satisfaction of the Council.	Compliant
	Cope Road Maintenance			
56	The Proponent shall pay Council \$480,000 (in 2013 dollar value) for the maintenance of Cope Road. This payment must be: (a) made in 4 instalments of \$120,000 over the first four years of mining operations, with the first payment to be made on the commencement of mining operations on site; (b) indexed in accordance with the CPI for the previous quarter.		Moolarben Coal had paid the first instalment of \$120,000 in Q4 2015 at the commencement of the development of OC4.	Compliant Ongoing
	VISUAL			
50	The Proponent shall: (a) implement all reasonable and feasible measures to minimise the visual and off-site lighting impacts of the project; (b) ensure no fixed outdoor lights shine above the horizontal or above the building line or any illuminated structure; (c) ensure no in-pit mobile lighting rigs shine above the pit wall and other mobile lighting rigs do not shine above the horizontal; (d) ensure that all external lighting associated with the project complies with Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting, or its latest version; (e) provide for the establishment of trees and shrubs and/or the construction of mounding or bunding to minimise visual and lighting impacts on the Proponent’s land adjoining public roads with views of the site; (f) ensure that the visual appearance of all buildings, structures, facilities or works (including paint colours and specifications) is aimed at blending as far as possible with the surrounding landscape, to the satisfaction of the Secretary.	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 62 • AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting 	As the site establishment of Stage 2 OC4 was occurring at the date of this audit lighting and visual amenity were being considered and measures implemented to meet the requirements of this condition: (a) measures to minimise the visual and off-site lighting impacts of the project were implemented to prevent light spill to Wollar Road; (b) fixed outdoor lights did not shine above the horizontal or above the building line of any illuminated structure; (c) in-pit mobile lighting rigs do not shine above the pit wall and other mobile lighting rigs did not shine above the horizontal; (d) external lighting complies with Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting; (e) trees and shrubs and/or mounding or bunding have been established along the northern side of Wollar Road to minimise visual and lighting impacts on adjoining public roads with views of the site; (f) the visual appearance of the Moolarben Coal buildings, structures, facilities or works blend in as far as practicable with the surrounding landscape.	Compliant Ongoing
	BUSHFIRE MANAGEMENT			

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance				
51	The Proponent shall: (a) ensure that the project is suitably equipped to respond to any fires on site; and (b) assist the RFS and emergency services as much as practicable if there is a fire in the vicinity of the site.	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 63 Rehabilitation Management Plan, section 5.13, Aug 2015 Landscape Management Plan, section 3.23, Jun 2013 	(a) MCO maintain water carts with firefighting equipment capable of extinguishing fire outbreaks. This firefighting equipment, together with graders and bulldozers used for mining, provides effective bushfire fighting capability. (b) MCO would assist RFS and emergency services in the event of a fire outbreak and in addition, responsiveness is enhanced by emergency preparedness training for mine-site personnel. There have been no major outbreaks of fire on the Moolarben Coal Stage 2 site between September and December 2015.	Compliant Ongoing				
	WASTE							
52	The Proponent shall: (a) implement all reasonable and feasible measures to minimise the waste (including coal reject) generated by the project; (b) ensure that the waste generated by the project is appropriately stored, handled and disposed of; and (c) monitor and report on effectiveness of the waste minimisation and management measures in the Annual Review.	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 64 2012-2013 AEMR section 2.7 2013-2014 AEMR section 3.8 	The Waste Management Plan sets a recycling target of 70% for MCO. MCO continued to maintain a Total Integrated Waste Management Service to manage all waste streams generated on site. This includes general waste, cardboard and paper recycling, co-mingled recycling, waste oil, and steel. Consultation with the waste management contractor to identify opportunities to improve the recycling rates occurs.	Compliant Ongoing				
	REHABILITATION							
	Rehabilitation Objectives							
53	The Proponent shall rehabilitate the site to the satisfaction of the Executive Director Mineral Resources. This rehabilitation must be generally consistent with the proposed rehabilitation described in the EA (and depicted conceptually in the figure in Appendix 8), and comply with the objectives in Table 13. Table 13: Rehabilitation Objectives <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Feature</th> <th>Objective</th> </tr> </thead> <tbody> <tr> <td>Mine site (as a whole)</td> <td> • Safe, stable and non-polluting; • Constructed landforms drain to the natural environment (excluding final voids); and • Minimise visual impact of final landforms as far as is reasonable and feasible. • Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems that is compatible with the conservation values of the adjacent Munghorn Gap </td> </tr> </tbody> </table>	Feature	Objective	Mine site (as a whole)	• Safe, stable and non-polluting; • Constructed landforms drain to the natural environment (excluding final voids); and • Minimise visual impact of final landforms as far as is reasonable and feasible. • Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems that is compatible with the conservation values of the adjacent Munghorn Gap	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 65 	Rehabilitation of the areas of the Stage 2 development will be generally consistent with the proposed rehabilitation described in the Environmental Assessment (and depicted conceptually in the figure in Appendix 8 to this Project Approval 08_0135), to address the requirements of Table 13. Site establishment works for the Stage 2 OC4 operations commenced in September 2015 and no mining had occurred in Stage 2 areas at the date of this audit (December 2015).	Not triggered
Feature	Objective							
Mine site (as a whole)	• Safe, stable and non-polluting; • Constructed landforms drain to the natural environment (excluding final voids); and • Minimise visual impact of final landforms as far as is reasonable and feasible. • Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems that is compatible with the conservation values of the adjacent Munghorn Gap							

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	<p>Nature Reserve and Goulburn River National Park, that is comprised of: - 1502 ha of open woodland including Grey Box – Narrow leaved Ironbark shrubby woodland on hills of the Hunter Valley, North Coast and Sydney Basin; Scribbly Gum – Brown Bloodwood woodland of the southern Brigalow Belt South; Rough-barked Apple – Coast Banksia shrubby woodland on Warkworth Sands of the central Hunter Valley, Sydney Basin; and White Box Yellow Box Blakely's Red Gum Woodland (EEC); - aquatic habitat areas (within the diverted creek lines and retained water features); - habitat for threatened fauna species; and - wildlife corridors</p>			
	<p>Final voids</p>	<ul style="list-style-type: none"> • Minimise the size and depth of final voids so far as is reasonable and feasible, subject to meeting the objectives below; • Minimise the drainage catchment of the final void so far as is reasonable and feasible; • Negligible high wall instability risk; • The size and depth of the final voids must be designed having regard to their function as long-term groundwater sinks, to ensure that groundwater flows across the back-filled pit towards the final void; and • Minimise risk of flood interaction for all flood events up to and including the Probable Maximum Flood level. 		
	<p>Surface infrastructure</p>	<ul style="list-style-type: none"> • To be decommissioned and removed, unless the Executive Director, Mineral Resources agrees otherwise 		
	<p>Degraded riparian areas along Wilpinjong Creek and along Murragamba and Eastern</p>	<ul style="list-style-type: none"> • Restore channel stability; • Restore riparian and aquatic ecosystem function; and • Include compensatory aquatic habitat areas. 		

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance
	<p>Creeks downstream of the mined areas to the boundary of the Wilpinjong mine</p> <p>Community</p> <ul style="list-style-type: none"> • Ensure public safety; and • Minimise the adverse socio-economic effects associated with mine closure. 			
	Progressive Rehabilitation			
54	<p>The Proponent shall rehabilitate the site progressively. That is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies shall be employed when areas prone to dust generation cannot yet be permanently rehabilitated.</p> <p><i>Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the project.</i></p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 66 	<p>Progressive rehabilitation will be undertaken on the Stage 2 OC4 area when works on areas of disturbance for OC4 have been completed. No rehabilitation on the OC4 area had occurred at the date of this audit (December 2015).</p>	Not triggered
	Long Term Security of Rehabilitated Areas			
55	<p>Prior to relinquishing the mining lease that covers the site, unless the Secretary agrees otherwise, the Proponent shall make suitable arrangements to protect the rehabilitation areas with conservation value in perpetuity, in consultation with OEHL and to the satisfaction of the Secretary.</p>			Noted
	Rehabilitation Management Plan			
56	<p>The Proponent shall prepare and implement a Rehabilitation Management Plan for the project to the satisfaction of the Executive Director, Mineral Resources. This plan must:</p> <p>(a) be prepared in consultation with the Department, NOW, OEHL, Council and the CCC;</p> <p>(b) be submitted to and approved by the Executive Director, Mineral Resources prior to the commencement of any development on site under this approval, unless the Secretary agrees otherwise;</p> <p>(c) be prepared in accordance with any relevant DRE guideline;</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 68 • Rehabilitation Management Plan, Version 3, 11 Aug 2015 • Letter to OEHL re Rehabilitation Management Plan Input, 31 Mar 2015 • Letter to NOW re Rehabilitation Management Plan Input, 31 Mar 2015 • Letter to MWRC re Rehabilitation Management Plan Input, 31 Mar 2015 	<p>The Rehabilitation Management Plan prepared for Stage 1 was revised to include the requirements for Stage 2 development under Project Approval 08_0135 Schedule 3 condition 56 in May 2015. The Rehabilitation Management Plan was updated to address regulatory review comments in August 2015. The Rehabilitation Management Plan includes:</p> <p>(a) section 1.3 outlines consultation with the DP&E, NOW, OEHL, Mid-Western Regional Council and the CCC;</p> <p>(b) the Rehabilitation Management Plan was submitted to the Executive Director, Mineral</p>	Compliant

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance		
	<p>(d) provide for periodic review and updating of the rehabilitation plans and management strategies to ensure best practice landform design and establishment strategies are employed;</p> <p>(e) describe how the rehabilitation of the site would be integrated with the implementation the biodiversity offset strategy;</p> <p>(f) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);</p> <p>(g) describe the measures that would be implemented to ensure compliance with the relevant conditions of this approval, and address all aspects of rehabilitation including mine closure, final landform, and final land use;</p> <p>(h) include interim rehabilitation where necessary to minimise the area exposed for dust generation;</p> <p>(i) include a program to monitor, independently audit and report on the effectiveness of the measures, and progress against the detailed performance and completion criteria; and</p> <p>(j) build to the maximum extent practicable on the other management plans required under this approval</p>	<ul style="list-style-type: none"> Letter to Executive Director, Mineral Resources, re Rehabilitation Management Plan, 31 Mar 2015 Letter to CCC re Rehabilitation Management Plan Input, 31 Mar 2015 Mining Operations Plan (MOP) Guidelines, DRE, 2013 	<p>Resources prior to the commencement of any Stage 2 development on site under this approval;</p> <p>(c) was prepared in accordance with DRE guideline ESG3 section 7.2 and 8;</p> <p>(d) sections 11.3 and 11.4 provide for periodic review and updating of the rehabilitation plan and management strategies to ensure best practice landform design and establishment strategies are employed.</p> <p>(e) section 4.9 describes how the rehabilitation of the site would be integrated with the implementation the biodiversity offset strategy;</p> <p>(f) section 6 addresses performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary);</p> <p>(g) Section 4 to 9 describe the measures to be implemented to ensure compliance with the relevant conditions of this approval, and address all aspects of rehabilitation and section 12 addresses mine closure, final landform, and final land use;</p> <p>(h) section 4.7 includes interim rehabilitation where necessary to minimise the area exposed for dust generation;</p> <p>(i) section 7 provides a program to monitor, independently audit and section 11 addresses reporting on the effectiveness of the measures, and progress against the detailed performance and completion criteria; and</p> <p>(j) EMP's are referenced where relevant to build to the maximum extent practicable on the other management plans required under this approval.</p>			
	SCHEDULE 4 ENVIRONMENTAL CONDITIONS – UNDERGROUND MINING					
	SUBSIDENCE					
	Performance Measures – Natural and Heritage Features					
1	<p>The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 18, to the satisfaction of the Secretary.</p> <p><i>Table 18: Subsidence Impact Performance Measures</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Water Resources</td> <td style="width: 50%;">Performance Measures</td> </tr> </table>	Water Resources	Performance Measures	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 73 	<p>No underground mining had occurred at the Moolarben Coal Complex at the date of this audit (December 2015).</p>	Not triggered
Water Resources	Performance Measures					

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	Drainage Lines (DL1 – DL7)	No greater subsidence impacts or environmental consequences than predicted in the EA		The Extraction Plan and associated sub-plans will be prepared and completed prior to the commencement of any underground mining.	
	Land				
	Cliffs C7, C9 and C10	Negligible environmental consequences (that is occasional rock falls, displacement or dislodgement of boulders or slabs or fracturing, that in total do not impact more than 0.5% of the total face of such cliffs within any longwall mining domain)			
	Other Cliffs	No greater subsidence impacts or environmental consequences than predicted in the EA			
	Minor cliffs Rock face features Steep slopes	Minor environmental consequences (that is, occasional rock-falls, displacement of or dislodgment of boulders or slabs, or fracturing, that in total do not impact more than 5% of the total face area of each such type of feature within any longwall mining domain)			
	Biodiversity				
	Threatened species, threatened populations, or endangered ecological communities	Negligible subsidence impacts or environmental consequences			
	Heritage Sites				
	Aboriginal heritage site S2MC 236 (AHIMS No's 36-3-0016 and 36-3-0134)	Negligible subsidence impacts or environmental consequences			

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance								
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Historic heritage sites</td> <td style="width: 50%;">No greater subsidence impact or environmental consequences than predicted in the EA</td> </tr> <tr> <td>Mine Workings</td> <td></td> </tr> <tr> <td>First workings under an approved Extraction Plan beneath any feature where performance measures in this table require negligible subsidence impacts or negligible environmental consequences</td> <td>To remain long-term stable and non-subsiding</td> </tr> <tr> <td>Second workings</td> <td>To be carried out only in accordance with an approved Extraction Plan</td> </tr> </table> <p><i>Notes: • The locations of the features referred to in Table 18 are shown in Appendix 4. • The Proponent will be required to define more detailed performance indicators (including impact assessment criteria) for each of these performance measures in the various management plans that are required under this approval. • Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter. • The requirements of this condition only apply to the impacts and consequences of mining operations, construction or demolition undertaken following the date of this approval.</i></p>	Historic heritage sites	No greater subsidence impact or environmental consequences than predicted in the EA	Mine Workings		First workings under an approved Extraction Plan beneath any feature where performance measures in this table require negligible subsidence impacts or negligible environmental consequences	To remain long-term stable and non-subsiding	Second workings	To be carried out only in accordance with an approved Extraction Plan			
Historic heritage sites	No greater subsidence impact or environmental consequences than predicted in the EA											
Mine Workings												
First workings under an approved Extraction Plan beneath any feature where performance measures in this table require negligible subsidence impacts or negligible environmental consequences	To remain long-term stable and non-subsiding											
Second workings	To be carried out only in accordance with an approved Extraction Plan											
	Offsets											
2	<p>If the Proponent exceeds the performance measures in Table 18 and the Secretary determines that:</p> <p>(a) it is not reasonable or feasible to remediate the impact or environmental consequence; or</p> <p>(b) remediation measures implemented by the Proponent have failed to satisfactorily remediate the impact or environmental consequence then the Proponent shall provide a suitable</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 74 		Not triggered								

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance										
	offset to compensate for the impact or environmental consequence, to the satisfaction of the Secretary. <i>Note: Any offset required under this condition must be proportionate with the significance of the impact or environmental consequence.</i>													
	Performance Measures – Built Features													
3	The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 19, to the satisfaction of the Secretary. <i>Table 19: Subsidence Impact Performance Measures – Built Features</i>	<ul style="list-style-type: none"> Project 05_0117 Schedule 3 condition 75 	No underground mining had commenced at the date of this audit (December 2015)	Not triggered										
	<table border="1" style="width: 100%;"> <tr> <th colspan="2" style="background-color: #f2f2f2;">Key public infrastructure:</th> </tr> <tr> <td style="width: 30%;">Gulgong-Sandy Hollow Railway Line</td> <td>Gulgong-Sandy Hollow Railway Line Always safe and serviceable. Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired.</td> </tr> <tr> <th colspan="2" style="background-color: #f2f2f2;">Other Infrastructure</th> </tr> <tr> <td>Murrumbidgee Road Low voltage electricity power line</td> <td>Always safe. Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.</td> </tr> <tr> <td>Telecommunication cable Fibre-optic cable Murrumbidgee Trig Station</td> <td>Fibre-optic cable Murrumbidgee Trig Station Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated.</td> </tr> </table>				Key public infrastructure:		Gulgong-Sandy Hollow Railway Line	Gulgong-Sandy Hollow Railway Line Always safe and serviceable. Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired.	Other Infrastructure		Murrumbidgee Road Low voltage electricity power line	Always safe. Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.	Telecommunication cable Fibre-optic cable Murrumbidgee Trig Station	Fibre-optic cable Murrumbidgee Trig Station Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated.
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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance								
	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%;">Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated</td> </tr> <tr> <td>Other built features and improvements, including fences</td> <td>including fences Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.</td> </tr> <tr> <td>Public Safety</td> <td></td> </tr> <tr> <td>Public safety</td> <td>Negligible additional risk</td> </tr> </table> <p><i>Notes: • The locations of the features referred to in Table 19 are shown in Appendix 4. • The Proponent will be required to define more detailed performance indicators for each of these performance measures in Built Features Management Plans or Public Safety Management Plan (see condition 5 below). • Measurement and/or monitoring of compliance with performance measures and performance indicators is to be undertaken using generally accepted methods that are appropriate to the environment and circumstances in which the feature or characteristic is located. These methods are to be fully described in the relevant management plans. In the event of a dispute over the appropriateness of proposed methods, the Secretary will be the final arbiter. • The requirements of this condition only apply to the impacts and consequences of mining operations undertaken following the date of this approval. • Requirements under this condition may be met by measures undertaken in accordance with the Mine Subsidence Compensation Act 1961. • Requirements regarding safety or serviceability do not prevent preventative or mitigatory actions being taken prior to or during mining in order to achieve or maintain these outcomes.</i></p>		Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated	Other built features and improvements, including fences	including fences Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.	Public Safety		Public safety	Negligible additional risk			
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Public Safety												
Public safety	Negligible additional risk											
4	Any dispute between the Proponent and the owner of any built feature over the interpretation, application or implementation of the performance measures in Table 19 is to be settled by the	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 76 		Noted								

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	Secretary, following consultation with the Executive Director Mineral Resources. Any decision by the Secretary shall be final and not subject to further dispute resolution under this approval.			
	Extraction Plan			
	<p>The Proponent shall prepare and implement an Extraction Plan for all second workings on site to the satisfaction of the Secretary. Each extraction plan must: (a) be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary; (b) be approved by the Secretary before the Proponent carries out any of the second workings covered by the plan; (c) include detailed plans of existing and proposed first and second workings and any associated surface development; (d) include detailed performance indicators for each of the performance measures in Tables 18 and 19; (e) provide revised predictions of the potential subsidence effects, subsidence impacts and environmental consequences of the proposed second workings, incorporating any relevant information obtained since this approval; (f) describe the measures that would be implemented to ensure compliance with the performance measures in Tables 18 and 19, and manage or remediate any impacts and/or environmental consequences; (g) include a Built Features Management Plan, which has been prepared in consultation with DRE and the owners of affected public infrastructure, to manage the potential subsidence impacts and/or environmental consequences of the proposed second workings, and which:</p> <ul style="list-style-type: none"> • addresses in appropriate detail all items of key public infrastructure and other public infrastructure and all classes of other built features; • has been prepared following appropriate consultation with the owner/s of potentially affected feature/s; • recommends appropriate remedial measures and includes commitments to mitigate, repair, replace or compensate all predicted impacts on potentially affected built features in a timely manner; and • in the case of all key public infrastructure, and other public infrastructure except roads, trails and associated structures, reports external auditing for compliance with ISO 31000 (or alternative standard agreed with the infrastructure owner) and provides for annual auditing of compliance and effectiveness during extraction of longwalls which may impact the infrastructure; (h) include a Water Management Plan, which has been prepared in consultation with EPA and NOW, which provides for the management of the potential impacts and/or 	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 3 condition 77 	<p>No underground mining had occurred at the Moolarben Coal Complex at the date of this audit (December 2015).</p> <p>The Extraction Plan and associated sub-plans will be prepared and completed prior to the commencement of any underground mining.</p>	Not triggered

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	<p>environmental consequences of the proposed second workings on watercourses and aquifers, including: • surface and groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse impacts on water resources or water quality; • a program to monitor and report stream flows, assess any changes resulting from subsidence impacts and remediate and improve stream stability; • a program to monitor and report groundwater inflows to underground workings; • a program to predict, manage and monitor impacts on groundwater bores on privately owned land; and (i) include a Biodiversity Management Plan, which has been prepared in consultation with OEH, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on aquatic and terrestrial flora and fauna, with a specific focus on threatened species, populations and their habitats; endangered ecological communities; and water dependent ecosystems; (j) include a Land Management Plan, which has been prepared in consultation with any affected public authorities, to manage the potential impacts and/or environmental consequences of the proposed second workings on land in general; (k) include a Heritage Management Plan, which has been prepared in consultation with OEH and relevant stakeholders for both Aboriginal and historic heritage, to manage the potential environmental consequences of the proposed second workings on both Aboriginal and non-Aboriginal heritage items, and reflects all requirements under conditions 41-46 of Schedule 3; (l) include a Public Safety Management Plan, which has been prepared in consultation with DRE, to ensure public safety in the mining area; (m) include a Subsidence Monitoring Program, which has been prepared in consultation with DRE, to: • describe the on-going subsidence monitoring program; • provide data to assist with the management of the risks associated with subsidence; • validate the subsidence predictions; • analyse the relationship between the predicted and resulting subsidence effects and predicted and resulting impacts under the plan and any ensuing environmental consequences; and • inform the contingency plan and adaptive management process; (n) include a contingency plan that expressly provides for adaptive management where monitoring indicates that there has been an exceedance of any performance measure in Tables 18 and 19, or where any such exceedance appears likely; (o) proposes appropriate revisions to the Rehabilitation Management Plan required under condition 56 of Schedule 3;</p>			

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	and (p) include a program to collect sufficient baseline data for future Extraction Plans. Note: To identify the longwall mining domains referred to in this condition, see Appendix 2.			
6	The Proponent shall ensure that the management plans required under conditions 5(g)-(l) above include: (a) an assessment of the potential environmental consequences of the Extraction Plan, incorporating any relevant information that has been obtained since this approval; and (b) a detailed description of the measures that would be implemented to remediate predicted impacts.	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 78 	No underground mining had occurred at the Moolarben Coal Complex at the date of this audit (December 2015). The Extraction Plan and associated sub-plans will be prepared and completed prior to the commencement of any underground mining.	Not triggered
	First Workings			
7	The Proponent may carry out first workings on site other than in accordance with an approved Extraction Plan, provided that DRE is satisfied that the first workings are designed to remain long-term stable and non-subsiding, except insofar as they may be impacted by approved second workings.	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 79 		Noted
	Payment of Reasonable Costs			
8	The Proponent shall pay all reasonable costs incurred by the department to engage suitably qualified, experienced and independent experts to review the adequacy of any aspect of an Extraction Plan.	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 80 		Noted
	Gas Drainage			
9	The Proponent shall implement all reasonable and feasible measures to minimise the greenhouse gas emissions from the underground mining operations to the satisfaction of the Secretary.	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 71 	No underground mining had occurred at the Moolarben Coal Complex at the date of this audit (December 2015).	Not triggered
10	Prior to carrying out underground mining operations, the Proponent shall submit an updated Greenhouse Gas Minimisation Plan to the Secretary. This plan must: (a) identify options for minimising greenhouse gas emissions from underground mining operations, with a particular focus on capturing and/or using these emissions; (b) investigate the feasibility of implementing each option; (c) propose the measures that would be implemented in the short to medium term on site; and	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 3 condition 72 	No underground mining had occurred at the Moolarben Coal Complex at the date of this audit (December 2015).	Not triggered

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	(d) include a research program to inform the continuous improvement of the greenhouse gas minimisation measures on site.			
	SCHEDULE 5 ADDITIONAL PROCEDURES			
	NOTIFICATION OF LANDOWNERS/TENANTS			
1	<p>Within 1 month of the date of this approval, the Proponent shall:</p> <p>(a) notify in writing the owners of: • any land listed in Table 1 and any residence or land exceeding the criteria in Tables 4 or 5 (respectively) of Schedule 3 that they have the right to require the Proponent to acquire their land at any stage during the project; • any residence on the land listed in Table 2 and any residence exceeding the criteria in Table 6 of Schedule 3 that they have the right to request the Proponent for additional noise mitigation measures to be installed at their residence at any stage during the project; and • any privately-owned land within 2 kilometres of the approved open cut mining pit/s that they are entitled to ask for an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous property inspection report updated;</p> <p>(b) notify the tenants of any mine-owned land of their rights under this approval; and</p> <p>(c) send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the owners and/or existing tenants of any land (including mine-owned land) where the predictions in the EA identify that dust emissions generated by the project are likely to be greater than the relevant air quality criteria in Schedule 3 at any time during the life of the project.</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 4 condition 1 • Blast Management Plan, section 6.2 • Air Quality Management Plan, Version 3, section 11.2, Jul 2015 		Not triggered
2	<p>Prior to entering into any tenancy agreement for any land owned by the Proponent that is predicted to experience exceedances of the recommended dust and/or noise criteria, or for any of the land listed in Table 3 that is subsequently purchased by the Proponent, the Proponent shall: (a) advise the prospective tenants of the potential health and amenity impacts associated with living on the land, and give them a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time); and (b) advise the prospective tenants of the rights they would have under this approval, to the satisfaction of the Secretary.</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 4 condition 2 • Air Quality Management Plan, Version 3, section 11.2, Jul 2015 		Not triggered
3	<p>As soon as practicable after obtaining monitoring results showing:</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 4 condition 3 		

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance
	<p>(a) an exceedance of any relevant criteria in Schedule 3, the Proponent shall notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the project is again complying with the relevant criteria; and</p> <p>(b) an exceedance of the relevant air quality criteria in Schedule 3, the Proponent shall send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land).</p>	<ul style="list-style-type: none"> Blast Management Plan, section 9 and 11 Air Quality Management Plan, Version 3, section 11.2, Jul 2015 		
	INDEPENDENT REVIEW			
4	<p>If an owner of privately-owned land considers the project to be exceeding the criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the project on his/her land.</p> <p>If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision, the Proponent shall: (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to:</p> <ul style="list-style-type: none"> consult with the landowner to determine his/her concerns; conduct monitoring to determine whether the project is complying with the relevant impact assessment criteria in Schedule 3; and if the project is not complying with these criteria then: <ul style="list-style-type: none"> determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine regarding the impact on the land; identify the measures that could be implemented to ensure compliance with the relevant criteria; and <p>(b) give the Secretary and landowner a copy of the independent review.</p>	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 4 condition 4 		Not triggered
	LAND ACQUISITION			
5	<p>Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on: (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 project, having regard to the:</p> <ul style="list-style-type: none"> existing and permissible use of the land, in accordance with the applicable 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, but excluding any improvements that 	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 4 condition 10 		Noted

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	<p>have resulted from the implementation of the additional noise and/or air quality mitigation measures in conditions 4 and 5 of Schedule 3; (b) the reasonable costs associated with: • relocating within the Mid-western Regional local government area, or to any other local government area determined by the Secretary; and • obtaining legal advice 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.</p> <p>However, if at the end of this period, the Proponent 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 Secretary for resolution.</p> <p>Upon receiving such a request, the Secretary will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to: • consider submissions from both parties; • determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above; • prepare a detailed report setting out the reasons for any determination; and • provide a copy of the report to both parties. Within 14 days of receiving the independent valuer's report, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination. However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions.</p> <p>Within 14 days of this determination, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination. If the landowner refuses to accept the Proponent's binding written offer under this condition within 6 months of the offer being</p>			

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	made, then the Proponent's obligations to acquire the land shall cease, unless the Secretary determines otherwise.			
6	The Proponent shall pay all reasonable costs associated with the land acquisition process described in condition 10 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 4 condition 11 		Noted
	SCHEDULE 6 ENVIRONMENTAL MANAGEMENT, AUDITING AND REPORTING			
	ENVIRONMENTAL MANAGEMENT			
	Environmental Management Strategy			
1	<p>The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must:</p> <p>(a) be submitted to the Secretary for approval within 6 months of the date of this approval;</p> <p>b) provide the strategic framework for environmental management of the project;</p> <p>c) identify the statutory approvals that apply to the project;</p> <p>(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;</p> <p>(e) describe the procedures that would be implemented to:</p> <ul style="list-style-type: none"> keep the local community and relevant agencies informed about the operation and environmental performance of the project; receive, handle, respond to, and record complaints; resolve any disputes that may arise; respond to any non-compliance; respond to emergencies; and <p>(f) include:</p> <ul style="list-style-type: none"> copies of any strategies, plans and programs approved under the conditions of this approval; and a clear plan depicting all the monitoring to be carried out in relation to the project 	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 5 condition 1 Environmental Management Strategy, Mar 2015 Letter from DP&E re Approval of Environmental Management Strategy, 31 Jul 2015 	<p>An Environmental Management Strategy was prepared to satisfy Project Approval 05_0117 Schedule 5 condition 1 in December 2008 prior to construction of Stage 1 commencing. The Environmental Management Strategy Version 2 was updated in June 2013 and Version 3 in March 2015 to include management and mitigation measures for both Stage 1 and Stage 2. The Environmental Management Strategy:</p> <p>(a) was submitted to the Secretary for approval within 6 months of the date of this approval;</p> <p>(b) provide the strategic framework for environmental management of the project;</p> <p>(c) section 4 identifies the statutory approvals that apply to the project;</p> <p>(d) section 5.1 and Appendix E describe role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;</p> <p>(e) describe the procedures that would be implemented to section 5.3 describes information dissemination to keep the local community and relevant agencies informed about the operation and environmental performance of the project; section 5.4 outlines the procedures for receipt, handling, response, and recording of complaints; section 6.2 addresses resolve any disputes that may arise; • response to any non-compliance; • sections 5.2 and 6.3 address response to incidents / emergencies; and</p> <p>(f) include reference to all strategies, plans and programs approved under the conditions of this</p>	Compliant

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Condition No.	Project Approval 08_0135 Condition	Verification	Comments	Compliance
			approval in section 2 and Table 4; and a clear plan depicting all the monitoring to be carried out in relation to the project in section 6 and EMP's.	
	Adaptive Management			
2	<p>The Proponent must assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this approval and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation. Where any exceedance of these criteria and/or performance measures has occurred, the Proponent must, at the earliest opportunity:</p> <p>(a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;</p> <p>(b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and</p> <p>(c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary.</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 5 condition 2 	<p>Project related risks are assessed and managed to reduce the potential for an exceedance to recur. All reasonable and feasible options for remediation are investigated and the preferred remediation measures or other course of action implemented by Moolarben Coal.</p>	Ongoing
	Management Plan Requirements			
3	<p>The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:</p> <p>(a) detailed baseline data;</p> <p>(b) a description of:</p> <ul style="list-style-type: none"> • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; <p>(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</p> <p>(d) a program to monitor and report on the:</p> <ul style="list-style-type: none"> • impacts and environmental performance of the project; • effectiveness of any management measures (see c above); <p>(e) a contingency plan to manage any unpredicted impacts and their consequences;</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 5 condition 3 • Heritage Management Plan, Version 4, Jun 2015 • Air Quality Management Plan, version 3, Jul 2015 • Blast Management Plan, Version 4 May 2015 • Blast Fume Management Strategy • Environmental Management Strategy, Version 3, Mar 2015 • Landscape Management Plan, Version 2, June 2013 • Noise Management Plan, Version 3 May 2015 • Rehabilitation Management Plan, Version 3, Aug 2015 	<p><i>Refer to Independent Environmental Audit Report section 5.2:</i></p> <p>Management plans developed for the Moolarben Coal Complex (i.e. Stage 1 and Stage 2) and approved by DP&E have been prepared general accordance with this condition:</p> <p>(a) detailed baseline data is provided in the relevant plans and Environmental Assessments;</p> <p>(b) relevant statutory requirements (including any relevant approval, licence or lease conditions) are provided in section 2 of the majority of the plans, and relevant limits and specific performance and management measures/criteria are provided in sections 3 and 4;</p> <p>(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria are generally provided in sections 6 and 7;</p>	Compliant

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	(f) a program to investigate and implement ways to improve the environmental performance of the project over time; (g) a protocol for managing and reporting any: • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and (h) a protocol for periodic review of the plan.	<ul style="list-style-type: none"> • Waste Management Plan • Water Management Plan, Version 3 Jul 2015 • Biodiversity Management Plan, Version 1, May 2015 • Biodiversity Offset Management Plan, Version 1 Dec 2014 	<p>(d) monitoring programs and reporting are generally covered in section 7 and 8 in relation to environmental performance of the project and effectiveness of any management measures;</p> <p>(e) contingency plan to manage any unpredicted impacts and their consequences are presented in section 9 or 11;</p> <p>(f) investigation and implementation of ways to improve the environmental performance of the project over time are presented in section 10 and the AEMR's;</p> <p>(g) the protocols for managing and reporting incidents, complaints; non-compliances with statutory requirements; and exceedances of the impact assessment criteria and/or performance criteria is outlined in sections 7, 8, and/or 11; and</p> <p>(h) periodic review of the plans is addressed in section 10 and the Environmental Management Strategy.</p>	
	Annual Review			
4	<p>By the end of March each year, or other timing as may be agreed by the Secretary, the Proponent shall review the environmental performance of the project to the satisfaction of the Secretary. This review must:</p> <p>(a) describe the development that was carried out in the previous calendar year, and the development that is proposed to be carried out over the next year;</p> <p>(b) include a comprehensive review of the monitoring results and complaints records of the project over the previous calendar year, which includes a comparison of these results against the • the relevant statutory requirements, limits or performance measures/criteria; • the monitoring results of previous years; and • the relevant predictions in the EA;</p> <p>(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>(d) identify any trends in the monitoring data over the life of the project;</p> <p>(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and</p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 5 condition 4 • 2012 – 2013 Annual Environmental Management Report • 2013 - 2014 Annual Environmental Management Report 	<p>The annual review of construction and operations of the Stage 2 Moolarben Coal Complex project will be covered in the 2015 Annual Environmental Management Report 1 January to 31 December 2015. The AEMR will review the environmental performance of the project:</p> <p>(a) section 2 will describe the development of Stage 2 between September and 31 December 2015 and section 6 will outline the development activities proposed to for the next 12 months;</p> <p>(b) section 3 will present a comprehensive review of the monitoring results and complaints for the project and includes a comparison of these results against relevant statutory requirements, limits or performance measures/criteria, relevant predictions in the EA and monitoring results of previous reporting period;</p> <p>(c) section 3 will also identify any non-compliance and describes actions taken;</p> <p>(d) trends in the monitoring data are described under each environmental aspect in section 3;</p> <p>(e) section 3 will also identify any discrepancies between the predicted and actual impacts of the</p>	<p>Not triggered (at the date of this audit)</p>

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	(f) describe what measures will be implemented over the next year to improve the environmental performance of the project.		project, and discusses the potential cause of any significant discrepancies; and (f) section 6 will describe measures to be implemented to improve the environmental performance of the project.	
	Revision of Strategies, Plans and Programs			
5	<p>Within 3 months of the submission of:</p> <p>(a) the submission for annual review under condition 4 above;</p> <p>(b) the submission for incident report under condition 7 below;</p> <p>(c) the submission for audit under condition 9 below; or</p> <p>(d) any modification of this approval, the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary. Where this review leads to revisions in any such document, then within four weeks of the review the revised document must be submitted to the Secretary for approval.</p> <p><i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.</i></p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 5 condition 5 • 2012-2013 AEMR • 2013-2014 AEMR • 2013 Independent Environmental Audit, Umwelt Apr 2013 • Project Approval 05_0117 Stage 1 MOD 9, 10 and 11 • Project Approval 08_0135 Stage 2 	Review and revision of the strategies, plans, and programs required under this approval have occurred between 2013 and 2015 following the granting of Modifications to Project Approval 05_0117 Stage 1, and the Stage 2 Project Approval 08_0135, and recommendations made in the 2013 Independent Environmental Audit.	Compliant Ongoing
	Community Consultative Committee			
6	<p>The Proponent shall operate a Community Consultative Committee (CCC) for the Moolarben mine complex to the satisfaction of the Secretary. 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), and be operating by the end of March 2015.</p> <p><i>Notes: • The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval; and • The CCC should be comprised of an independent chair and appropriate representation from the Proponent, Council, recognised environmental groups and the local community.</i></p>	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 4 condition 6 • Meeting 28 – 10 September 2013 • Meeting 29 - 10th December 2013 • Meeting 30 - 1st April 2014 • Meeting 31 - 1st July 2014 • Meeting 32 - 25th November 2014 • Meeting 33 - 6th May 2015 • Meeting 34 - 4th August 2015 • Meeting 35 - 10th November 2015 	<p>The Community Consultative Committee (CCC) for the Moolarben Coal Project was established for Stage 1 and re-established for the Moolarben Coal Complex to the satisfaction of the Secretary. This CCC is operated in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007).</p> <p>Minutes of recent meetings (December 2013 to November 2015) were reviewed during the audit. Meetings have been held each three to four months with the most recent meeting being held in November 2015. Minutes of CCC meetings are available on the Moolarben Coal website.</p>	Compliant Ongoing
	REPORTING			
	Incident Reporting			
7	The Proponent shall immediately notify the Secretary 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 project, the Proponent shall	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 5 condition 7 	Reportable incidents are summarised in the AEMR's.	Compliant Ongoing

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	notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested	<ul style="list-style-type: none"> Pollution Incident Response Management Plan 2102-2013 AEMR section 3.23 2013-2014 AEMR section 3.24 	Reports are prepared in accordance with the Pollution Incident Response Management Plan and submitted to the EPA and other relevant agencies.	
	Regular Reporting			
8	The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval	<ul style="list-style-type: none"> Project Approval 05_0117 Schedule 5 condition 8 	Moolarben Coal provide Monthly Environmental Monitoring Reports of environmental performance, that are placed on the website.	Compliant
	AUDITING			
9	<p>By 31 December 2015, and every 3 years thereafter, unless the Secretary directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:</p> <p>(a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;</p> <p>(b) include consultation with the relevant agencies;</p> <p>(c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval, and any other relevant approvals, relevant EPL/s and/or Mining Lease (including any assessment, plan or program required under these approvals);</p> <p>(d) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals; and</p> <p>(e) recommend measures or actions to improve the environmental performance of the Moolarben mine complex, and/or any strategy, plan or program required under these approvals.</p> <p><i>Note: • Notwithstanding the timing referred to above, audits must be carried out prior to the completion of longwall panels 4 and 8. The Proponent must liaise with the Department to determine the precise date of these audits. • This audit team should be led by a suitably qualified auditor, and include experts in the field of subsidence, surface water and groundwater management, noise, ecology and mine rehabilitation.</i></p>	<ul style="list-style-type: none"> Project 05_0117 Schedule 5 condition 9 	<p>This current Independent Environmental Audit conducted by Trevor Brown & Associates in December 2015, reviewed the status of the development of the Moolarben Coal Complex project and reports on the Stage 2 works that commenced in September 2015.</p> <p>For the current audit, consultation was undertaken with relevant government agencies (DRE, NOW, DP&I, EPA and Council) and details of the consultation are included in the audit report.</p>	Compliant Ongoing

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10	Within 3 months of completing this audit, or as otherwise agreed by the Secretary, the Proponent shall submit a copy of the audit report to the Secretary with a response to any recommendations contained in the audit report.	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 5 condition 10 	This will occur by Moolarben Coal on completion of the audit.	Not triggered
	ACCESS TO INFORMATION			
11	The Proponent shall: (a) make the following information publicly available on its website: • the EA; • current statutory approvals for the project; • approved strategies, plans or programs required under the conditions of this approval; • a comprehensive summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval; • a complaints register, which is to be updated on a monthly basis; • minutes of CCC meetings; • the last five annual reviews; • any independent environmental audit, and the Proponent's response to the recommendations in any audit; • any other matter required by the Secretary; and (b) keep this information up to date, (c) investigate and report on reasonable and feasible measures to make predictive meteorological data and real time monitoring data publicly available on its website to the satisfaction of the Secretary.	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 5condition 11 	The Moolarben Coal website provides the following publically available information: <ul style="list-style-type: none"> • Environmental Assessment • Major Project Approvals • Environmental Management Plans • Monthly Environmental Monitoring Reports • Annual Environmental Management Reports • Community Consultative Committee Minutes • Independent Environmental Audits • Mining Leases and Approvals • Blasting Information • Complaints Register 	Compliant Ongoing

Attachment D

Statements of Commitment – Environmental Assessment Stage 2

SoC	Project Approval 08_0135 Statements of Commitment	Verification	Comments	Compliance
	Mining Operations			
1	MCM will operate the Stage 1 and Stage 2 projects as a combined mining complex (the MCC) to extract up to 17 Mtpa of ROM coal comprising: <ul style="list-style-type: none"> • 13 Mtpa from combined open cut operations (with up to 8 Mtpa derived from Stage 1 OCs and up to 12 Mtpa from Stage 2 OC); and • up to 4 Mtpa from underground operations, for 24 years, generally in accordance with the Stage 2 EA and PPR. 	<ul style="list-style-type: none"> • 2012-2013 AEMR • 2013-2014 AEMR 	<i>Project Approval 05_0117 Schedule 2 condition 7</i> <i>Project Approval 08_0135 Schedule 2 condition 7</i> Extraction of coal from the Moolarben Coal Complex open cuts has not exceeded the specified tonnage per annum.	Compliant
2	MCM will ensure that open cut plant and equipment meet the sound power levels described in the noise impact assessment for the project, including specifying sound power levels and factory fitting of attenuation kits in relevant plant and equipment purchase contracts.		<i>Project Approval 05_0117 Schedule 2 condition 12</i> <i>Project Approval 08_0135 Schedule 2 condition 12</i> The open cut plant and equipment used on the Moolarben Coal Complex site meet the sound power levels consistent with the manufacturers specifications and the noise assessment conducted for the Environmental Assessment.	Compliant
3	MCM will obtain all necessary licences and approvals required to operate the Stage 2 project, generally in accordance with the Stage 2 EA and PPR.	<ul style="list-style-type: none"> • EPL 12932 • Bore Licence 20BL172002 • Bore Licence 20BL173923 • Water Access Licence 36340 	Moolarben Coal have the necessary licences and approvals for the development of the Stage 2 Moolarben Coal Complex.	Compliant
	Environmental Management			
4	MCM will revise the Stage 1 Environmental Management System to incorporate the MCC Stage 2 project in consultation with relevant regulators and stakeholders (where appropriate). This may require revision or preparation of monitoring and management plans as prescribed by the Project Approval, such as (where relevant): <ul style="list-style-type: none"> • Environmental Monitoring Program; • Air Quality and Greenhouse Gas Management Plan (including energy savings actions); • Spontaneous Combustion Management Plan; • Noise Management Plan; • Blast Management Plan; • Water Management Plan (including groundwater and surface water); • Creek and Aquatic Rehabilitation Plan; • Rehabilitation Management Plan; • Biodiversity Management Plan; • Subsidence Management Plan; • Aboriginal Cultural Heritage Management Plan; • Non Aboriginal Heritage Management Plan; • Erosion and 	<ul style="list-style-type: none"> • Environmental Management Strategy • Environmental Monitoring Program • Air Quality Management Plan • Noise Management Plan • Blast Management Plan • Water Management Plan • Creek and Aquatic Rehabilitation Plan • Rehabilitation Management Plan • Biodiversity Management Plan • Heritage Management Plan; • Erosion and Sediment Control Plan 	<i>Project Approval 05_0117 Schedule 5 condition 1 and 3</i> <i>Project Approval 08_0135 Schedule 6 condition 1 and 3</i> The environmental management system for the Moolarben Coal Complex has been developed and the management Plans prepared and approved by the DP&E for Stage 2 of the project: <ul style="list-style-type: none"> Environmental Management Strategy Environmental Monitoring Program Air Quality Management Plan Noise Management Plan Blast Management Plan Water Management Plan (including groundwater and surface water) Rehabilitation Management Plan 	Compliant

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	Sediment Control Plan; • Social Engagement and Issue Response Strategy; • Bushfire Management Plan; and • Waste Management Plan. (Note where applicable or appropriate some of these plans may be combined).	<ul style="list-style-type: none"> • Bushfire Management Plan and • Waste Management Plan 	Biodiversity Management Plan Biodiversity Offset Management Plan Heritage Management Plan; Bushfire Management Plan	
	Air Quality			
5	MCM will use its best endeavours to implement industry best practice air quality management initiatives to minimise the air quality impacts of the MCC	<ul style="list-style-type: none"> • Air Quality Management Plan, Jul 2015 	The Air Quality Management Plan section 6.1 addresses management and monitoring of air quality to be undertaken in accordance with the best management practices.	Compliant
6	The revised MCC Air Quality Management Plan (and future variations) will include a validation exercise of the real time response triggers	<ul style="list-style-type: none"> • Air Quality Management Plan, Jul 2015 	The Air Quality Management Plan section 6.1 addresses a validation exercise of the real time response triggers	Compliant
7	MCM will complete a review of particulate emission controls implemented at the MCC against industry best practice on a three yearly basis and report the findings in the relevant Annual Review.	<ul style="list-style-type: none"> • Air Quality Management Plan, Jul 2015 	The Air Quality Management Plan section 6.1 addresses a review of particulate emission controls implemented at the MCC against industry best practice on a three yearly basis and report the findings in the relevant Annual Review.	Compliant
8	MCM will develop and implement meteorological criteria to help ensure that blasting is not undertaken under unfavourable wind and/or atmospheric conditions which would result in an exceedance of relevant criteria.	<ul style="list-style-type: none"> • Air Quality Management Plan, Jul 2015 	The Air Quality Management Plan section 6.1.1 addresses meteorological criteria to help ensure that blasting is not undertaken under unfavourable wind and/or atmospheric conditions that would result in an exceedance of relevant criteria.	Compliant
9	Where air quality impacts are predicted to exceed criteria at private residences in the PPR due to MCC operations, MCM will install a first flush system to the rain water tanks upon written request of the landholder.	<ul style="list-style-type: none"> • Air Quality Management Plan, Jul 2015 	The Air Quality Management Plan section 9.1 addresses where air quality impacts are predicted to exceed criteria at private residences due to MCC operations. (MCM will install a first flush system to the rain water tanks upon written request of the landholder)	Compliant Ongoing
	Greenhouse Gas			
10	MCM will undertake regular revision of energy efficiency initiatives to ensure that Scope 1 greenhouse gas emissions per tonne of product coal are kept to the minimum practicable level.	<ul style="list-style-type: none"> • Air Quality Management Plan, Jul 2015 		Noted
	Noise and Blasting			
11	MCM will use its best endeavours to implement industry best practice noise control and management measures to minimise the noise impacts of the MCC.	<ul style="list-style-type: none"> • Noise Management Plan, section 7.1 and 7.2, May 2015 	The Noise Management Plan has been implemented and noise mitigation and management measures are practised to reduce noise emissions from the Moolarben Coal Complex operations.	Compliant Ongoing
12	MCM will proactively manage its operations to ensure noise impacts are within the worst case predicted noise envelope.	<ul style="list-style-type: none"> • Noise Management Plan, section 7, May 2015 	Management of the operations at the Moolarben Coal Complex occurs to keep noise emissions within the	Ongoing

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			predicted worst case modelled levels at sensitive receivers.	
13	MCM will ensure noise monitoring is implemented to determine and manage the contribution to cumulative mine noise from the MCC at Property 258, including implementing at least quarterly attended noise monitoring and installing a directional noise monitor in the vicinity of the property in conjunction with the Ulan Mine, unless monitoring indicates there is no noise impact from the MCC at this property.	<ul style="list-style-type: none"> Noise Management Plan, section 6.1, 7.6 and 8.2, May 2015 Joint Mines Meeting Minutes 29 October 2015 	Noise monitoring is conducted in accordance with the Noise Management Plan noise monitoring program with quarterly attended noise surveys and real-time directional noise monitors located to indicate the potential source(s) from the Moolarben Col and Ulan Coal operations.	Compliant Ongoing
14	MCM will work cooperatively with neighbouring mines to develop a blast monitoring system which is representative of the closest sensitive receivers to ensure compliance with the relevant blast criteria.	<ul style="list-style-type: none"> Noise Management Plan, section 6.1, 7.6 and 8.2, May 2015 Joint Mines Meeting Minutes 29 October 2015 	Conveyors used (at the CHPP and Stage 12 operations) and being installed at the Moolarben Coal Complex for Stage 2 operations are enclosed and installed to the supplier specifications.	Compliant Ongoing
15	The sound power of the conveyor used in the NIA will be provided to equipment manufacturers and suppliers to help ensure that the conveyor is maintained at these levels during operations.	<ul style="list-style-type: none"> Noise Management Plan, section 7 and Appendix B, May 2015 	The Noise Management Plan has been implemented and noise mitigation and management measures are practised to reduce noise emissions from the Moolarben Coal Complex operations.	Compliant Ongoing
16	MCM will continue to advise neighbours of blasting schedules upon request so that any concerns regarding blasting and impacts to pets and livestock can be managed by neighbours.	<ul style="list-style-type: none"> Blast Management Plan, May 2015 	The public are notified through methods such as newspaper advertisements, direct contact with residents, signs and the Moolarben Coal website.	Compliant Ongoing
	Water Resources			
17	MCM will implement the water management and mitigation measures described in the PRP and subsequent supporting documents.	<ul style="list-style-type: none"> Preferred Project Report, 2012 	Water management and mitigation measures described in the PRP have been implemented by Moolarben Coal.	Compliant Ongoing
18	MCM will continue to monitor groundwater impacts on surrounding privately owned bores. In the event that it is demonstrated that water levels in existing landholder bores decline as a consequence of the MCC, leading to an adverse impact on groundwater supply, MCM will: <ul style="list-style-type: none"> engage an appropriately qualified and experienced hydrogeologist to investigate the cause of the impact and recommend an appropriate action response plan; and provide an alternate interim water supply or commensurate compensation as agreed to with the landholder. 	<ul style="list-style-type: none"> Groundwater Management Plan, 31 Jul 2015 	<i>Project Approval 05_0117 Schedule 3 condition 30</i> <i>Project Approval 08_0135 Schedule 3 condition 26</i> No local users of water had been impacted between January 2013 and December 2015. Groundwater Management Plan section 6.1 addresses monitoring of groundwater impacts on surrounding privately owned bores.	Not triggered
19	MCM will develop a surface water monitoring program to quantify the streamflow and water quality characteristics within Murragamba and Eastern Creeks for existing conditions prior to mining of the creek lines.	<ul style="list-style-type: none"> Surface Water Management Plan, 31 Jul 2015 	Surface Water Management Plan, section 3 addresses a surface water monitoring program to quantify the streamflow and water quality. Results of surface water	Compliant Ongoing

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			monitoring are reported in the Monthly Environmental Monitoring Reports and AEMR's.	
20	MCM will manage rainfall run-off from MCC mine disturbed areas to prevent contamination of downstream water sources from sediment laden water, unless otherwise approved under a relevant Environment Protection Licence.	<ul style="list-style-type: none"> Surface Water Management Plan, 31 Jul 2015 	Surface Water Management Plan section 4 addresses rainfall run-off from mine disturbed areas. No incidents related to contamination of downstream water sources caused by runoff from mine disturbed areas occurred between 2013-2015.	Compliant Ongoing
21	MCM will develop a six monthly water balance for MCC operations to assist in site water management and monitoring protocols. This will be reviewed on a regular basis to account for changing mine water inflows and water management infrastructure as mining progresses. The frequency of this review will be revised after Year 3 of Stage 2 operations to the approval of relevant regulators.		WRM were engaged to review the Water Balance Model to reflect the current operational planning and demands. An interim monthly water balance is currently being developed by Moolarben Coal to provide information between model updates, which will be used to provide a range of likely outcomes for wet and dry conditions. This will be reviewed to account for changing mine water inflows and water management infrastructure as mining progresses.	Compliant Ongoing
22	Collated groundwater monitoring data will be reviewed annually to assess the impacts of the MCC on the groundwater environment and to compare observed impacts with those predicted from groundwater modelling.	<ul style="list-style-type: none"> Groundwater Management Plan, 31 Jul 2015 AEMR 2012-2013 AEMR 2013-2014 	Groundwater monitoring data is reviewed annually in accordance with Groundwater Management Plan section 10.1 and the data reported in the AEMR's, comparing observed impacts with those predicted from groundwater modelling.	Compliant Ongoing
23	The groundwater monitoring program will be revised to include additional piezometers in alluvial areas, including palaeochannel areas, potentially affected by the MCC.	<ul style="list-style-type: none"> Groundwater Management Plan, 31 Jul 2015 	The Groundwater Management Plan section 6.4 addresses the monitoring program additional piezometers in alluvial areas north of OC4.	Compliant Ongoing
24	A groundwater modelling post-audit and model re-calibration (where required) will be carried out 2 years (and 5 yearly thereafter) after commencing Stage 2 coal extraction. Should any groundwater review or post-audit indicate a significant variance from the model predictions, an appropriate response will be implemented in consultation with NOW and DP&I.		Stage 2 site development only commenced in September 2015. Re-calibration of the groundwater model occurred in 2012 and updated in Modification (08_0135). Groundwater model will be validated 2 years from coal extraction, next required in June 2018.	Not triggered
25	MCM will acquire relevant licences under the Water Act 1912 and Water Management Act 2000 as required (or implement other such ameliorative measures as agreed with relevant regulators, such as return flows or other such reasonable and feasible mitigation measures to reduce the total direct and indirect water take of the MCC from alluvial and connected surface water sources).	<ul style="list-style-type: none"> Water Management Plan, Jul 2015 Site Water Balance, Jul 2015 Water Licences Report Moolarben Coal, 2014-15 Water Sharing Agreement between Moolarben Coal and Ulan Coal Mines, Sparkes & Holmore Lawyers, 10 Aug 2009 	A Regional Water Supply and Monitoring Investigation was undertaken and submitted to DPI in 2009. Water extraction licences for the site are current. Water Licences Report prepared for 2014-15. A Water Sharing Agreement between Ulan Coal and Moolarben Coal for the supply of 1,000ML/year of surplus mine water from the Ulan Coal. Site Water Balance reported in AEMR's.	Compliant Ongoing
26	MCM will endeavour to implement an integrated monitoring program for the MCC, with UCML and Wilpinjong Coal Mine for data-sharing.	<ul style="list-style-type: none"> Water Management Plan section 2.4.4, 31 Jul 2015 	A Data Sharing Deed signed on 27 March 2012 provides the protocol for sharing of environmental monitoring data	Compliant Ongoing

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		<ul style="list-style-type: none"> Data Sharing Deed, 27 Mar 2012 Joint Mines Consultation Commitments, 29 Oct 2015 	<p>between Moolarben Coal, Ulan Coal and Wilpinjong Coal.</p> <p>Six-monthly meetings are held between the parties to discuss and implement integrated monitoring programs to assess any cumulative water quality impacts, co-ordinate water quality monitoring programs as far as practicable, undertake joint investigations/studies if cumulative impacts are considered likely; and co-ordinate modelling programs for validation, re-calibration and re-running of groundwater models.</p>	
27	MCM commits to realign and reconstruct the mined sections of Murragamba and Eastern creeks to meet geomorphological, hydraulic and ecological performance and completion criteria developed in consultation with relevant regulators.	<ul style="list-style-type: none"> Surface Water Management Plan, Jul 2015 	<p>Not yet triggered.</p> <p>Surface Water Management Plan section 8.8 addresses realignment and reconstruction of mined sections of Murragamba and Eastern creeks. Moolarben Coal is progressing the development of detailed creek diversion plans in consultation with relevant government authorities.</p>	Noted
28	MCM will develop operational criteria for the realigned sections of Murragamba and Eastern creeks in consultation with relevant regulators and install diversions around the realigned sections of creek until such time as they become operational.	<ul style="list-style-type: none"> Surface Water Management Plan, Jul 2015 	Surface Water Management Plan section 8.8 addresses operational criteria for the realigned sections of Murragamba and Eastern creeks in consultation with relevant government authorities.	Compliant Ongoing
29	As a part of its revised Water Management Plan, MCM will prioritise UCML surplus water for use within the MCC, to minimise the need for extraction from the Northern Borefield.	<ul style="list-style-type: none"> Site Water Balance, Jul 2015 	Management of surplus water within the Moolarben Coal Complex will be addressed in the revised Site Water Balance sections 5.6 and 7.3, to minimise the need for extraction from the Northern Borefield.	Ongoing
	Ecology			
30	MCM will implement the ecological management and mitigation measures described in the PPR and subsequent supporting documents.	<ul style="list-style-type: none"> Preferred Project Report, 2012 Biodiversity Management Plan, May 2015 Biodiversity Offset Management Plan, Dec 2014 Letter to DP&E re Biodiversity Management Plan, 24 Mar 2015 Letter to DP&E re Biodiversity Management Plan, 17 Jul 2015 Letter to DP&E re Biodiversity Offset Security, 19 Aug 2015 	<p>The implementation of the ecological management and mitigation measures scribed in the PPR and Biodiversity Management Plan and Biodiversity Offset Management Plan will occur as the Stage 2 development progresses.</p>	In progress
31	MCM will establish the Biodiversity Offset Strategy as described in the PPR and subsequent supporting documents to initially maintain and ultimately improve ecological values. Where ownership or the controlling interest of any proposed offset property is not able to be held by MCM it will either provide an alternate property of equal biodiversity value as a replacement, or make other such alternate arrangements as agreed to with relevant regulators. Management of offset properties for conservation purposes will be described in a Rehabilitation Offset Management Plan (or equivalent).			

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32	MCM will implement appropriate security mechanisms to ensure that offset areas and rehabilitated areas (at the completion on mining) are protected in the long-term.	<ul style="list-style-type: none"> Letter to DP&E re Biodiversity Offset Security, 19 Aug 2015 	The long term security of offset areas is being progressed by Moolarben Coal through consultation with OEH and DP&E re the mechanisms for security of the land.	Ongoing
33	MCM will continue to consult with OEH on the inclusion of relevant Moolarben owned properties into the existing Avisford Nature Reserve.	<ul style="list-style-type: none"> Letter to DP&E re Biodiversity Offset Security, 19 Aug 2015 	Moolarben Coal continues to consult with the OEH re Avisford Nature Reserve in relation to dedicating the Avisford 1 biodiversity offset area to the national park estate under the NPW Act; and registering a Voluntary Conservation Agreement (VCA) under the NPW Act on the relevant portion of the Avisford 2 biodiversity offset area.	Ongoing
	Aboriginal Archaeology and Cultural Heritage			
34	The salvage and the protection of all known Aboriginal objects within the Project Boundary will be managed in accordance with the measures described in the PPR, subsequent supporting documents and an approved Aboriginal Cultural Heritage Management Plan for the MCC which has been prepared in consultation with local Aboriginal community stakeholders and the OEH. Prior to finalisation and approval of the Aboriginal Cultural Heritage Management Plan, the description of significance, development area, potential impacts, management strategies and current management status for all sites in the Stage 2 area will be reviewed by a suitably experienced and qualified archaeologist.	<ul style="list-style-type: none"> Heritage Management Plan, Jun 2015 	The salvage and the protection of all known Aboriginal objects within the Moolarben Coal Project Boundary has occurred in accordance with the approved Heritage Management Plan section 5.	Compliant Ongoing
35	Site S2MC229 will be described as being a directly impacted site with a management strategy of 'detailed recording and surface collection, including closer inspection of the drip line' in the approved Aboriginal Cultural Heritage Management Plan.	<ul style="list-style-type: none"> Heritage Management Plan, Jun 2015 	Site S2MC229 was been salvaged by Niche Environmental, report to be completed by June 2016.	Compliant Ongoing
36	Unsurveyed areas such as the Powers Management Area will be assessed and managed in accordance with the procedures agreed to with local Aboriginal community stakeholders and approved in the Aboriginal Cultural Heritage Management Plan for the MCC.	<ul style="list-style-type: none"> Heritage Management Plan, Jun 2015 	Survey for Aboriginal sites is regularly undertaken for areas previously undisturbed. The surveys are conducted with involvement of Aboriginal community stakeholders.	Compliant Ongoing
37	MCM will manage the Aboriginal conservation zones as outlined in the PPR and subsequent supporting documents in consultation with local Aboriginal community stakeholders.	<ul style="list-style-type: none"> Heritage Management Plan, Jun 2015 	Local Aboriginal community is engaged with the Aboriginal heritage site management process and Heritage Management Plan provisions are enacted.	Compliant Ongoing
	Rehabilitation			

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SoC	Project Approval 08_0135 Statements of Commitment	Verification	Comments	Compliance
38	MCM will rehabilitate the Stage 2 project area to restore forest and woodland across the valley landscape, including rehabilitating 631 ha of currently degraded secondary grasslands. Areas of derived native grassland, secondary grassland and exotic grassland will be rehabilitated to treed landscapes.	<ul style="list-style-type: none"> Vegetation Clearance Protocol and Landscape Management Plan, 24 Nov 2014 Rehabilitation Management Plan, Aug 2015 	Moolarben Coal will rehabilitate the Stage 2 project area to restore forest and woodland across the valley landscape, including rehabilitating 631 ha of currently degraded secondary grasslands, as disturbed areas become available for rehabilitation.	Not yet triggered
39	MCM will implement best practice environmental management to progressively rehabilitate mined and degraded non-mined areas with a focus on the re-establishment of C/EEC Box Gum Woodland and threatened species habitat.	<ul style="list-style-type: none"> Vegetation Clearance Protocol and Landscape Management Plan, 24 Nov 2014 Rehabilitation Management Plan, Aug 2015 	Progressive rehabilitation of mined and degraded non-mined areas will focus on the re-establishment of Box Gum Woodland and threatened species habitat, in the Stage 2 development areas.	Compliant Ongoing
40	The gradients of final landform slopes will be generally designed to be no more than 10 to 14 degrees. However, where the out-of-pit (OOP) emplacement area is spatially constrained the final gradients of these slopes will be limited to a maximum of 20 degrees, provided it is agreed to by the relevant regulators.	<ul style="list-style-type: none"> Vegetation Clearance Protocol and Landscape Management Plan, 24 Nov 2014 Rehabilitation Management Plan, Aug 2015 	The gradients of out-of-pit (OOP) overburden emplacement area final landform slopes for OC4 development are being designed to be no more than 10 to 14 degrees, where practicable. The design of the gradients is dynamic and restricted to 10 to 14 degrees where the emplacement areas are not spatially constrained.	Compliant Ongoing
	Traffic and Transport			
41	Early morning and evening shift changes will be outside school bus service times, and where feasible will be offset from existing Ulan and Wilpinjong mine shift changes over time to minimise peak traffic loads on the road network.		The Moolarben Coal morning and evening shift changes are outside school bus service times. The 12-hour shift changes are between 0500 and 0700, and afternoon shift changes are from 1700-1900.	Compliant
42	MCM will work with MRWC and Ulan and Wilpinjong coal mines to generally improve road safety and traffic management on the local road network.			Noted
	Visual			
43	Rehabilitation will be carried out on disturbed areas as soon as practical after disturbance with emphasis on bunding and the OOP emplacement area.	<ul style="list-style-type: none"> Rehabilitation Management Plan, Aug 2015 		Noted
44	Infrastructure lighting will be designed to control light spill with directional lighting in elevated and exposed areas and will utilise low intensity lights to the level necessary for operational and safety requirements to minimise adverse night lighting impacts.	<ul style="list-style-type: none"> Project Approval 08_0135 Schedule 3 condition 50 AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting 	Infrastructure lighting uses directional lighting and low intensity lights to control light spill in elevated and exposed areas of the operations.	Ongoing
45	MCM will provide fair and reasonable community enhancement contributions for Stage 2 of the MCC to MWRC, which will augment the existing VPA for Stage 1.			Noted

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SoC	Project Approval 08_0135 Statements of Commitment	Verification	Comments	Compliance
46	MCM will provide fair and reasonable community enhancement contributions for Stage 2 of the MCC to MWRC, which will augment the existing VPA for Stage 1.		Molarben Coal consult with the local community through the Community Consultative Committee and newsletters, and liaise with the neighbouring coal mine (Ulan and Wilpinjong) and relevant agencies.	Compliant Ongoing
47	MCM will employ appropriately qualified persons residing in the MWRC area where feasible. MCM will also provide traineeships for young people residing in the MWRC area.		Employment of local appropriately qualified persons in the local area is practised. Traineeships for young people are provided where practicable.	Noted
	Reporting			
48	MCM will prepare an Annual Review (which summarises monitoring results and reviews performance) and distribute it to the relevant regulatory authorities and the MCM CCC.	<ul style="list-style-type: none"> • Project Approval 08_0135 Schedule 6 condition 4 	Annual Environmental Management Reports are prepared for the Moolarben Coal project and submitted to the DP&E and available publically on the Moolarben Coal website.	Compliant Ongoing

Attachment E

Environment Protection Licence 12932

EPL 12932	EPL 12932 Condition	Verification	Comments	Compliance												
1	Administrative Condition															
A1	What the licence authorises and regulates															
A1.1	<p>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.</p> <p>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.</p> <table border="1"> <thead> <tr> <th>Scheduled Activity</th> <th>Fee Based Activity</th> <th>Scale</th> </tr> </thead> <tbody> <tr> <td>Coal Works</td> <td>Coal works</td> <td>>5000000T handled</td> </tr> <tr> <td>Extractive Activities</td> <td>Land-based extractive activity</td> <td>500000-20000000T extracted, processed or stored</td> </tr> <tr> <td>Mining for Coal</td> <td>Mining for coal</td> <td>>5000000T produced</td> </tr> </tbody> </table>	Scheduled Activity	Fee Based Activity	Scale	Coal Works	Coal works	>5000000T handled	Extractive Activities	Land-based extractive activity	500000-20000000T extracted, processed or stored	Mining for Coal	Mining for coal	>5000000T produced		The Moolarben Coal project operations have not exceeded the scales of the Scheduled Activities and Fee Based Activities specified in condition A1.1, during the 2013 to 2015 period.	Compliant
Scheduled Activity	Fee Based Activity	Scale														
Coal Works	Coal works	>5000000T handled														
Extractive Activities	Land-based extractive activity	500000-20000000T extracted, processed or stored														
Mining for Coal	Mining for coal	>5000000T produced														
A1.2	Notwithstanding A1.1, the scale of the land-based extractive activity authorised under this licence must not exceed 2,000,000 tonnes per annum, being the amount equivalent to the extraction limit approved by the development consent granted under the Environmental Planning and Assessment Act 1979 for the premises specified in A2.			Noted												
A2	Premises or plant to which this licence applies															
A2.1	<p>The licence applies to the following premises: Moolarben Coal Mine 4250 Ulan Road (Locked Bag 2003) Mudgee NSW 2850</p> <p>The premise is defined as the combined extents of the stage 1 project boundary and the stage 2 preferred project, project boundary as indicated in the figure Moolarben Coal Stage 1 and Stage 2 indicative project layouts (drawing no. 09845) Appendix 3 of the licence variation application received by the EPA on 11 June 2015.</p>		The Moolarben Coal Project is being developed and operated within the boundaries defined in the Environment Assessments for Stage 1 and Stage 2.	Compliant												

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EPL 12932	EPL 12932 Condition	Verification	Comments	Compliance									
A3	Other activities												
A3.1	This licence applies to all other activities carried on at the premises, including: Ancillary activity – Crushing, grinding and separating <30,000 tonnes per year.												
A4	Information supplied to the EPA												
A4.1	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			Noted									
2	Discharges to Air and Water and Applications to Land												
P1	Location of monitoring/discharge points and areas												
P1.1	<p>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.</p> <p>Air</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">EPA ID No.</th> <th style="text-align: center;">Type of Monitoring / Discharge Point</th> <th style="text-align: center;">Location Description</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">6</td> <td style="text-align: center;">Dust deposition monitoring</td> <td>Dust deposition gauge DG01 as indicated on Attachment 3 (Project Area with General Location of Discharge and Monitoring Points) licence variation application received by the EPA 21/2/11</td> </tr> <tr> <td style="text-align: center;">7</td> <td style="text-align: center;">Dust deposition monitoring</td> <td>Dust deposition gauge DG12 as indicated in Moolarben Coal Complex Appendix 4 Proposed Air Quality Monitoring Points in the licence variation application received by the EPA on 11/6/15</td> </tr> </tbody> </table>	EPA ID No.	Type of Monitoring / Discharge Point	Location Description	6	Dust deposition monitoring	Dust deposition gauge DG01 as indicated on Attachment 3 (Project Area with General Location of Discharge and Monitoring Points) licence variation application received by the EPA 21/2/11	7	Dust deposition monitoring	Dust deposition gauge DG12 as indicated in Moolarben Coal Complex Appendix 4 Proposed Air Quality Monitoring Points in the licence variation application received by the EPA on 11/6/15	<ul style="list-style-type: none"> Air Quality Management Plan, 31 Jul 2015 	Monitoring is carried out at the EPA Identification No. locations.	Compliant Ongoing
EPA ID No.	Type of Monitoring / Discharge Point	Location Description											
6	Dust deposition monitoring	Dust deposition gauge DG01 as indicated on Attachment 3 (Project Area with General Location of Discharge and Monitoring Points) licence variation application received by the EPA 21/2/11											
7	Dust deposition monitoring	Dust deposition gauge DG12 as indicated in Moolarben Coal Complex Appendix 4 Proposed Air Quality Monitoring Points in the licence variation application received by the EPA on 11/6/15											

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EPL 12932	EPL 12932 Condition		Verification	Comments	Compliance
	9	Dust deposition monitoring	Dust deposition gauge DG04 as indicated in Insert 1 Attachment 3 (Project Area with General Location of Discharge and Monitoring points) licence variation application received by the EPA on 21/2/11		
	10	Dust deposition monitoring	Dust deposition gauge DMG05 as indicated on Attachment 3 (Project Area with the General Location of Discharge and Monitoring Points) licence variation application received by the EPA on 21/2/11		
	11	Dust deposition monitoring	Dust deposition gauge DG06 as indicated on Attachment 3 (Project Area with the General Location of Discharge and Monitoring Points) licence variation application 21/2/11		
	12	Dust deposition monitoring	Dust deposition gauge DG07 as indicated on Attachment 3 (Project Area with the General Location of Discharge and Monitoring Points) licence variation application received by the EPA 21/2/11		
	13	Dust deposition monitoring	Dust deposition gauge DG08 as indicated on Attachment 3 (Project Area with the General Location of Discharge and Monitoring Points) licence variation application received by the EPA on 21/2/11		
	14	Dust deposition monitoring	Dust deposition gauge DG09 as indicated on Attachment 3 (Project Area with the General Location of Discharge and Monitoring Points) licence variation application received by the EPA on 21/2/11		
	15	Dust monitoring PM10 (TEOM)	TEOM06 - indicated in Moolarben Coal Complex Appendix 4 Proposed Air Quality Monitoring Points in the Dust deposition monitoring licence variation received by the EPA on 11 June 2015		

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EPL 12932	EPL 12932 Condition			Verification	Comments	Compliance									
	16	Dust monitoring PM10 (TEOM)	HVAS PM01 - Ulan Village indicated in Moolarben Coal Complex Appendix 4 Proposed Air Quality Monitoring Points in the licence variation application received by the EPA on 11 June 2015												
	17	Dust monitoring PM10 (TEOM)	HVAS PM01 - Ulan Village indicated in Moolarben Coal Complex Appendix 4 Proposed Air Quality Monitoring Points in the licence variation application received by the EPA on 11 June 2015												
	25	Meteorological monitoring	Ulan Road weather station - location as indicated on map with response to s.193 licence variation received by the EPA 5/7/11												
	27	Dust monitoring PM10 (TEOM)	TEOM05 - Southern Ridge Road as shown on Figure 1 Air Quality Monitoring Locations Moolarben Coal Air Quality Monitoring Plan September 2013												
P1.2	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					Noted									
P1.3	<p>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.</p> <p>Water and Land</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">EPA ID No.</th> <th style="text-align: center;">Type of Monitoring / Discharge Point</th> <th style="text-align: center;">Location Description</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Discharge to waters. Discharge water quality monitoring</td> <td>Discharge to Bora Creek from "Cockies Dam" as indicated on sketch no. SK3445-005 Stage 1 Open Cut & CHPP Water Management Assessment and Upgrade Proposal Report dated October 2012 and received by the EPA 26/10/12</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Discharge to waters.</td> <td>Discharge from Open Cut 1 Sediment Dam 6 as indicated on</td> </tr> </tbody> </table>			EPA ID No.	Type of Monitoring / Discharge Point	Location Description	1	Discharge to waters. Discharge water quality monitoring	Discharge to Bora Creek from "Cockies Dam" as indicated on sketch no. SK3445-005 Stage 1 Open Cut & CHPP Water Management Assessment and Upgrade Proposal Report dated October 2012 and received by the EPA 26/10/12	2	Discharge to waters.	Discharge from Open Cut 1 Sediment Dam 6 as indicated on	<ul style="list-style-type: none"> Water Management Plan, 31 Jul 2015 Surface Water Management Plan, 31 Jul 2015 	EPA Identification No's 1 and 2: No licensed discharges occurred during the audit period.	Compliant Ongoing
EPA ID No.	Type of Monitoring / Discharge Point	Location Description													
1	Discharge to waters. Discharge water quality monitoring	Discharge to Bora Creek from "Cockies Dam" as indicated on sketch no. SK3445-005 Stage 1 Open Cut & CHPP Water Management Assessment and Upgrade Proposal Report dated October 2012 and received by the EPA 26/10/12													
2	Discharge to waters.	Discharge from Open Cut 1 Sediment Dam 6 as indicated on													

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EPL 12932	EPL 12932 Condition		Verification	Comments	Compliance
		Discharge water quality monitoring	sketch no. SK3445-023 Stage 1 Open Cut & CHPP Water Management Assessment and Upgrade Proposal Report dated October 2012 and received by the EPA on 26/10/12		
	3	Surface water quality monitoring	Bora Creek at the western boundary of mining lease 1605. Surface water monitoring point SW11 as indicated in attachment 3 licence variation application received by the EPA on 21/2/11	<p>EPA Identification No's 3, 5, 22 to 26, and 29: Monitoring undertaken at the site when required under this EPL., results shown in AEMR and monthly report</p> <p>EPA Identification No 4: Monitoring undertaken at the site, results shown in AEMR and monthly report. Site is generally dry, therefore limited monitoring results available</p>	
	4	Surface water quality monitoring	Bora Creek upstream of the extent of the rail loop. Surface water monitoring point SW10 as indicated in attachment 3 licence variation application received by the EPA 21/2/11		
	5	Effluent discharge and monitoring	Discharge point EFF01 as indicated on Attachment 3 (Project Area with the General Location of Discharge Monitoring Points) licence variation application received by the EPA 21/2/11		
	22	Effluent discharge and monitoring	Discharge point EFF02 as indicated on Attachment 3 (Project Area with the General Location of Discharge and Monitoring Points) licence variation application received by the EPA 21/2/11		
	23	Effluent discharge and monitoring	Discharge point EFF03 as indicated on Attachment 3 (Project Area with the General Location of Discharge and Monitoring Points) licence variation application received by the EPA 21/2/11		
	24	Stormwater discharge & monitoring point	General 1:50 stormwater control structures indicated as OC1-1, OC1-2, OC1-3, OC1-4 and OC1-5 on Figure 1 Concept Design		

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EPL 12932	EPL 12932 Condition			Verification	Comments	Compliance
			Drainage Layout Open Cut 1 received by the EPA on 11/1/13			
	26	Stormwater discharge & monitoring point	General 1:50 year stormwater control structures indicated as SD03, SD04, SD05, SD06, SD07, SD08 & SD14 on sketch no SK3445-001 Stage 1 Open Cut & CHPP Water Management Assessment and Upgrade Proposal Report dated October 2012 received by the EPA 26/10/12			
	28	Discharge to waters. Discharge water quality monitoring	Discharge to Moolarben Creek from Dam 202 LDP as shown on figure "Proposed Licence Discharge Points for OC2" received by the EPA on 8 October 2014			
	29	Stormwater discharge & monitoring point	General 1:50 year stormwater control structures indicated as dam 203 fill & spill, dam 206 fill & spill and dam 210 fill & spill on figure "Proposed Licence Discharge Points for OC2" received by the EPA on 8 October 2014			
	30	Stormwater discharge & monitoring point	Stormwater sediment dams indicated as EPA Identification No. 30 in Appendix 6 - Moolarben Coal Complex Proposed Water and Land Monitoring and Discharge Points of the licence variation application received by the EPA on 11 June 2015			
	31	Conceptual stormwater discharge & monitoring point	Stormwater sediment dams indicated as EPA identification No. 31 in Appendix 6 - Moolarben Coal Complex Proposed Water and Land Monitoring and Discharge Points of the licence variation application received by the EPA on 11 June 2015			
					EPA Identification No's 28, and 30 to 38: Not triggered	

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EPL 12932	EPL 12932 Condition			Verification	Comments	Compliance
	32	Stormwater discharge & monitoring point	Conceptual stormwater sediment dams indicated as EPA Identification No. 32 in Appendix 6 - Moolarben Coal Complex Proposed Water and Land Monitoring and Discharge Points of the licence variation application received by the EPA on 11 June 2015			
	33	Stormwater discharge & monitoring point	Stormwater sediment dams indicated as EPA Identification No. 33 in Appendix 6 - Moolarben Coal Complex Proposed Water and Land Monitoring and Discharge Points of the licence variation application received by the EPA on 11 June 2015			
	34	Conceptual stormwater discharge & monitoring point	Stormwater sediment dams indicated as EPA Identification No. 33 in Appendix 6 - Moolarben Coal Complex Proposed Water and Land Monitoring and Discharge Points of the licence variation application received by the EPA on 11 June 2015			
	35	Stormwater discharge & monitoring point	Stormwater sediment dams indicated as EPA Identification No. 35 in Appendix 6 - Moolarben Coal Complex Proposed Water and Land Monitoring and Discharge Points of the licence variation application received by the EPA on 11 June 2015			
	36	Conceptual stormwater discharge & monitoring point	Conceptual stormwater sediment dams indicated as EPA Identification No. 36 in Appendix 6 - Moolarben Coal Complex Proposed Water and Land Monitoring and Discharge Points of the licence variation application received by the EPA on 11 June 2015			

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EPL 12932	EPL 12932 Condition			Verification	Comments	Compliance									
	37	Conceptual stormwater discharge & monitoring point	Conceptual stormwater sediment dams indicated as EPA Identification No. 37 in Appendix 6 - Moolarben Coal Complex Proposed Water and Land Monitoring and Discharge Points of the licence variation application received by the EPA on 11 June 2015												
	38	Conceptual stormwater discharge & monitoring point	Conceptual stormwater sediment dams indicated as EPA Identification No. 38 in Appendix 6 - Moolarben Coal Complex Proposed Water and Land Monitoring and Discharge Points of the licence variation application received by the EPA on 11 June 2015												
P1.4	<p>The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or setting of limits for the emission of noise from the point.</p> <p>Noise</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">EPA ID No.</th> <th style="text-align: center;">Type of monitoring point</th> <th style="text-align: center;">Location description</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">40</td> <td style="text-align: center;">Noise monitoring</td> <td>Residences 30 and 63 - the location of the residence is indicated in Project Approval 05_0117 Moolarben Coal Mine Appendix 5 - Property Number and Land Ownership and Project Approval 08_0135 Moolarben Coal Mine Appendix 5 - Property Number and Land Ownership</td> </tr> <tr> <td style="text-align: center;">41</td> <td style="text-align: center;">Noise monitoring</td> <td>Residence 70 - the location of the residence is indicated in Project Approval 05_0117 Moolarben Coal Mine Appendix 5 - Property No. and Land Ownership and Project Approval 08_0135 Moolarben Coal Mine App 5 - Property Number and Land Ownership</td> </tr> </tbody> </table>			EPA ID No.	Type of monitoring point	Location description	40	Noise monitoring	Residences 30 and 63 - the location of the residence is indicated in Project Approval 05_0117 Moolarben Coal Mine Appendix 5 - Property Number and Land Ownership and Project Approval 08_0135 Moolarben Coal Mine Appendix 5 - Property Number and Land Ownership	41	Noise monitoring	Residence 70 - the location of the residence is indicated in Project Approval 05_0117 Moolarben Coal Mine Appendix 5 - Property No. and Land Ownership and Project Approval 08_0135 Moolarben Coal Mine App 5 - Property Number and Land Ownership	<ul style="list-style-type: none"> Noise Management Plan, 22 Jun 2015 	<p>Attended noise monitoring is conducted quarterly. No exceedances of criteria were noted.</p> <p>Note: Point 40 is Residence 30 and 63 Point 41 is Residence 70 Point 42 is Residence 75 Point 43 is all other privately owned residences Point 44 is Ulan Primary School Point 45 is Ulan Anglican and Catholic Churches Point 46 is Goulburn River National Park & Munghorn Gap Nature Reserve Point 47 is Residence 31</p>	Compliant Ongoing
EPA ID No.	Type of monitoring point	Location description													
40	Noise monitoring	Residences 30 and 63 - the location of the residence is indicated in Project Approval 05_0117 Moolarben Coal Mine Appendix 5 - Property Number and Land Ownership and Project Approval 08_0135 Moolarben Coal Mine Appendix 5 - Property Number and Land Ownership													
41	Noise monitoring	Residence 70 - the location of the residence is indicated in Project Approval 05_0117 Moolarben Coal Mine Appendix 5 - Property No. and Land Ownership and Project Approval 08_0135 Moolarben Coal Mine App 5 - Property Number and Land Ownership													

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EPL 12932	EPL 12932 Condition			Verification	Comments	Compliance
	42	Noise monitoring	Residence 75 - the location of the residence is indicated in Project Approval 05_0117 Moolarben Coal Mine Appendix 5 - Property No. and Land Ownership and Project Approval 08_0135 Moolarben Coal Mine Appendix 5 - Property Number and land ownership			
	43	Noise monitoring	All other privately owned residences - the location of the residences are indicated in Project Approval 05_0117 Moolarben Coal Mine Appendix 5 - Property No. and Land Ownership and Project Approval 08_0135 Moolarben Coal Mine App 5 - Property Number and Land Ownership			
	44	Noise monitoring	Ulan Primary School, Ulan NSW, 2850			
	45	Noise monitoring	Ulan Anglican and Catholic Churches, Ulan NSW, 2850			
	46	Noise monitoring	Goulburn River National Park & Munghorn Gap Nature Reserve			
	47	Noise monitoring	Residence 31 - the location of the residence is indicated in Project Approval 05_0117 Moolarben Coal Mine App 5 - Property No. and Land Ownership and Project Approval 08_0135 Moolarben Coal Mine App 5 - Property Number and Land Ownership			
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.			<ul style="list-style-type: none"> • <i>Protection of the Environment Operations Act 1997, section 120.</i> 	No reportable incidents related to water pollution have occurred since the last audit (Umwelt April 2013).	Compliant
L2	Concentration limits					

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EPL 12932	EPL 12932 Condition	Verification	Comments	Compliance																																				
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.			Noted																																				
L2.2	Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.			Noted																																				
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.			Noted																																				
L2.4	<p>Water and/or Land Concentration Limits POINT 1,2,28</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Pollutant</th> <th style="text-align: center;">Unit of measure</th> <th style="text-align: center;">50%ile conc. Limit</th> <th style="text-align: center;">100%ile conc. limit</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Conductivity</td> <td style="text-align: center;">µS/cm</td> <td style="text-align: center;">800</td> <td style="text-align: center;">900</td> </tr> <tr> <td style="text-align: center;">Oil and Grease</td> <td style="text-align: center;">mg/l</td> <td></td> <td style="text-align: center;">10</td> </tr> <tr> <td style="text-align: center;">pH</td> <td style="text-align: center;">pH units</td> <td></td> <td style="text-align: center;">6.5-8.5</td> </tr> <tr> <td style="text-align: center;">TSS</td> <td style="text-align: center;">mg/l</td> <td></td> <td style="text-align: center;">50</td> </tr> <tr> <td style="text-align: center;">Turbidity</td> <td style="text-align: center;">NTU</td> <td></td> <td style="text-align: center;">25</td> </tr> </tbody> </table> <p>POINT 24,26,29,30,31,33,35</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Pollutant</th> <th style="text-align: center;">Unit of measure</th> <th style="text-align: center;">100%ile conc. limit</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">pH</td> <td style="text-align: center;">pH units</td> <td style="text-align: center;">6.5-8.5</td> </tr> <tr> <td style="text-align: center;">TSS</td> <td style="text-align: center;">mg/l</td> <td style="text-align: center;">50</td> </tr> <tr> <td style="text-align: center;">Turbidity</td> <td style="text-align: center;">NTU</td> <td style="text-align: center;">25</td> </tr> </tbody> </table>	Pollutant	Unit of measure	50%ile conc. Limit	100%ile conc. limit	Conductivity	µS/cm	800	900	Oil and Grease	mg/l		10	pH	pH units		6.5-8.5	TSS	mg/l		50	Turbidity	NTU		25	Pollutant	Unit of measure	100%ile conc. limit	pH	pH units	6.5-8.5	TSS	mg/l	50	Turbidity	NTU	25	<ul style="list-style-type: none"> Water Management Plan, 31 Jul 2015 Surface Water Management Plan, 31 Jul 2015 	<p>Monitoring if water has been conducted in accordance with the approved Water Management Plan, and Surface Water Management Plan at the sampling locations Listed in EPL condition P1.3 for the parameters specified in EPL conditions L2.4 to 2.6.</p> <p>No licensed discharges occurred during the audit period (2013 to 2015).</p>	Compliant
Pollutant	Unit of measure	50%ile conc. Limit	100%ile conc. limit																																					
Conductivity	µS/cm	800	900																																					
Oil and Grease	mg/l		10																																					
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TSS	mg/l	50																																						
Turbidity	NTU	25																																						
L2.5	<p>The total suspended solids and turbidity limits specified under Condition L2.4 for the sediment basins identified as EPA licence discharge points 24, 26, 29, 30, 31, 33 and 35 do not apply when the discharge occurs solely as a result of rainfall measured at the premises which exceeds a total of 44 millimetre of rainfall over any consecutive 5day period.</p> <p><i>Note: A 44mm rainfall depth is defined by the publication Managing urban stormwater: soils and construction (Landcom 2004) as the rainfall depth in millimetres for a 95th percentile 5day rainfall events for the Central Tablelands consistent with the storage capacity</i></p>			Noted																																				

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EPL 12932	EPL 12932 Condition	Verification	Comments	Compliance									
	<i>(recommended minimum design criteria) for Type D sediment retention basins for mines and quarries (Vol 2E of the Landcom 2004).</i>												
L2.6	<p>The concentration limit for Total Suspended Solids (TSS) and turbidity under condition L2.4 for licence discharge points 24, 26, 29, 30, 31, 33 and 35 is deemed not to have been breached where:</p> <p>(a) the sample complies with the turbidity limit at the time of the discharge; and</p> <p>(b) the EPA is advised within 3 working days of completion of the TSS testing, of any TSS results above the licence limit.</p>			Noted									
L3	Volume and mass limits												
L3.1	<p>For each discharge point or utilisation area specified below (by a point number), the volume/mass of:</p> <p>a) liquids discharged to water; or;</p> <p>b) solids or liquids applied to the area; must not exceed the volume/mass limit specified for that discharge point or area.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Point</th> <th style="width: 40%;">Unit of Measure</th> <th style="width: 40%;">Volume/Mass Limit</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1 and 2</td> <td style="text-align: center;">Megalitres/day</td> <td style="text-align: center;">10</td> </tr> <tr> <td style="text-align: center;">28</td> <td style="text-align: center;">Kilolitres per day</td> <td style="text-align: center;">1</td> </tr> </tbody> </table> <p><i>Note: 1. The combined discharge volume from points 1, 2 and 28 must not exceed 10 megalitres (ML) per day</i></p>	Point	Unit of Measure	Volume/Mass Limit	1 and 2	Megalitres/day	10	28	Kilolitres per day	1		<p>EPA Points 5, 22 and 23 are for effluent disposal areas and continually discharge to the effluent discharge area.</p> <p>The EPA issued a Formal Warning Notice on 18 December 2014 in relation to the required monitoring of volume of effluent on a daily basis during discharge, from Points 5, 22 and 23 under EPL 12932 conditions L3.1 and M7.1. Following the Formal Warning Notice, daily readings were taken and a data logger was installed.</p> <p>A Variation to the EPL 12932 on 28 July 2015 removed the requirement for monitoring the discharge volume limit for points 5, 22 and 23.</p> <p>No discharges occurred from Points 1, 2 or 28 occurred during the audit period.</p>	Administrative Non-compliance (with EPL prior to 18 Dec 2014)
Point	Unit of Measure	Volume/Mass Limit											
1 and 2	Megalitres/day	10											
28	Kilolitres per day	1											
L3.2	No discharges are permitted at any time from licence points 32, 34, 36, 37 and 38.		No discharges from licence points 32, 34, 36, 37 and 38 between 2013 and 2015.	Compliant									
L4	Waste												
L4.1	The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below. Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below. Any waste received at the premises is subject to those limits or conditions,		<p>No waste has been received at the Moolarben Coal Complex site.</p> <p>Tyres are disposed in the pit. Less than 650 tonnes per annum have been disposed of at the premises between 2013 and 2015.</p>	Compliant									

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	<p>if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below. This condition does not limit any other conditions in this licence.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Code</th> <th style="width: 10%;">Waste</th> <th style="width: 15%;">Description</th> <th style="width: 15%;">Activity</th> <th style="width: 50%;">Other Limits</th> </tr> </thead> <tbody> <tr> <td>T140</td> <td>Tyres</td> <td>Heavy vehicle waste tyres generated on site</td> <td>Waste disposal (to land)</td> <td>The total volume of tyres disposed of at the premises must not exceed 650 tonnes per annum</td> </tr> </tbody> </table>	Code	Waste	Description	Activity	Other Limits	T140	Tyres	Heavy vehicle waste tyres generated on site	Waste disposal (to land)	The total volume of tyres disposed of at the premises must not exceed 650 tonnes per annum																	
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L5	Noise Limits																											
L5.1	<p>Noise generated at the premises that is measured at each noise monitoring point established under this licence must not exceed the noise levels specified in Column 4 of the table below for that point during the corresponding time periods specified in Column 1 when measured using the corresponding measurement parameters listed in Column 2.</p> <p>Point 40</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Time period</th> <th style="width: 35%;">Measurement Parameter</th> <th style="width: 40%;">Noise Level dB(A)</th> </tr> </thead> <tbody> <tr> <td>Day, Evening, Night</td> <td>LAeq (15 minute)</td> <td>39</td> </tr> <tr> <td>Night</td> <td>Night-LA1 (1 minute)</td> <td>45</td> </tr> </tbody> </table> <p>Point 41</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Time period</th> <th style="width: 35%;">Measurement Parameter</th> <th style="width: 40%;">Noise Level dB(A)</th> </tr> </thead> <tbody> <tr> <td>Day, Evening, Night</td> <td>LAeq (15 minute)</td> <td>37</td> </tr> <tr> <td>Night</td> <td>Night-LA1 (1 minute)</td> <td>45</td> </tr> </tbody> </table> <p>Point 42</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Time period</th> <th style="width: 35%;">Measurement Parameter</th> <th style="width: 40%;">Noise Level dB(A)</th> </tr> </thead> <tbody> <tr> <td>Day, Evening, Night</td> <td>LAeq (15 minute)</td> <td>36</td> </tr> </tbody> </table>	Time period	Measurement Parameter	Noise Level dB(A)	Day, Evening, Night	LAeq (15 minute)	39	Night	Night-LA1 (1 minute)	45	Time period	Measurement Parameter	Noise Level dB(A)	Day, Evening, Night	LAeq (15 minute)	37	Night	Night-LA1 (1 minute)	45	Time period	Measurement Parameter	Noise Level dB(A)	Day, Evening, Night	LAeq (15 minute)	36	<ul style="list-style-type: none"> Noise Management Plan, Jul 2015 2012-2013 AEMR 2013-2014 AEMR Monthly Environmental Monitoring Report Month ending 31 December 2014 to 31 December 2015 	<p>No exceedances of the noise criteria noted between January 2013 and December 2015.</p> <p>Note: Point 40 is Residence 30 and 63 Point 41 is Residence 70 Point 42 is Residence 75 Point 43 is all other privately owned residences Point 44 is Ulan Primary School Point 45 is Ulan Anglican and Catholic Churches Point 46 is Goulburn River National Park & Munghorn Gap Nature Reserve Point 47 is Residence 31</p>	Compliant Ongoing
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	Night	Night-LA1 (1 minute)	45			
	Point 43					
	Time period	Measurement Parameter	Noise Level dB(A)			
	Day, Evening, Night	LAeq (15 minute)	35			
	Point 44					
	Time period	Measurement Parameter	Noise Level dB(A)			
	Day, Evening, Night	LAeq (15 minute)	35			
	Point 45					
	Time period	Measurement Parameter	Noise Level dB(A)			
	Day, Evening, Night	LAeq (15 minute)	35			
	Point 46					
	Time period	Measurement Parameter	Noise Level dB(A)			
	Day, Evening, Night	LAeq (15 minute)	50			
	Point 47					
	Time period	Measurement Parameter	Noise Level dB(A)			
	Day	LAeq (15 minute)	36			
	Evening	LAeq (15 minute)	35			
	Night	LAeq (15 minute)	35			
	Night	Night-LA1 (1 minute)	45			
	<p><i>Note: 1. The above noise limits do not apply at properties where the licensee has a written agreement with the landowner to exceed the noise limits. 2. The noise limit for licence points 44 and 45 identified in condition L5.1 are applicable when in use only and when measured internally</i></p>					

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L5.2	<p>For the purpose of Condition L5.1:</p> <p>a) Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays;</p> <p>b) Evening is defined as the period from 6pm to 10pm; and</p> <p>c) Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays</p>	<ul style="list-style-type: none"> Noise Management Plan, section 6.2, Jul 2015 	Noise Monitoring Reports reflect these definitions.	Compliant
L5.3	<p>The noise limits set out in condition L5.1 apply under all meteorological conditions except for the following:</p> <p>a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or</p> <p>b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or c) Stability category G temperature inversion conditions.</p>	<ul style="list-style-type: none"> Noise Management Plan, section 6.2, Jul 2015 		Noted
L5.4	<p>For the purpose of condition L5.3:</p> <p>a) Data recorded by the meteorological station identified as EPA Licence Point 25 must be used to determine meteorological conditions; and</p> <p>b) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.</p>	<ul style="list-style-type: none"> Noise Management Plan, section 6.2, Jul 2015 	Meteorological conditions at the time of monitoring is recorded for monitoring data interpretation and reported in the Noise Monitoring Reports.	Compliant
L5.5	<p>To determine compliance:</p> <p>a) with the Leq(15 minute) noise limits in condition L5.1, the noise measurement equipment must be located:</p> <p>i) approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or ii) within 30 metres of a dwelling façade, but not closer than 3 metres where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable iii) within approximately 50 metres of the boundary of a National Park or Nature Reserve.</p> <p>b) with the LA1(1 minute) noise limits in condition L5.1, the noise measurement equipment must be located within 1 metre of a dwelling façade.</p> <p>c) with the noise limits in condition L5.1, the noise measurement equipment must be located:</p>	<ul style="list-style-type: none"> Noise Management Plan, section 6.0, Jul 2015 	Noise Monitoring Reports reflect these requirements for equipment locations.	Compliant

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	i) at the most affected point at a location where there is no dwelling at the location; or ii) at the most affected point within an area at a location prescribed by conditions L5.5(a) or L5.5(b).			
L5.6	A non-compliance of L5.1 will still occur where noise generated from the premises in excess of the appropriate limit is measured: (a) at a location other than an area prescribed by condition L5.5(a) and L5.5(b); and/or (b) at a point other than the most affected point at a location.	<ul style="list-style-type: none"> Noise Management Plan, section 6.1, Jul 2015 		Noted
L5.7	For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment			Noted
L6	Blasting			
L6.1	Blasting in or on the premises must only be carried out between 9 am and 5 pm, Monday to Saturday. Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.		Review of blast records confirmed that blasting was undertaken in accordance with the requirements. Blasting only occurred between 9am and 5pm Monday to Saturday. No blasting occurred on Sundays or Public Holidays between 2013 and 2015.	Compliant
L6.2	Blasting at the premises is limited to the following: a) A maximum of 2 blasts per day; and b) A maximum of 9 blasts per week averaged over a 12month reporting period.	<ul style="list-style-type: none"> Blast Management Plan, section 3, May 2015 2012-2013 AEMR 2013-2014 AEMR Monthly Environmental Monitoring Reports for Months ending 31 December 2014 to 31 December 2015 	Review of blast records confirmed that blasting was undertaken in accordance with the requirements. Blasting activities did not exceed 2 blasts a day or 9 blasts a week (averaged over any 12month period), between 2013 and 2015.	Compliant
L6.3	The airblast overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time at any noise sensitive locations. 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.		No blast overpressure results exceeded the 120dB criteria between 2013 and 2015 at any monitoring location.	Compliant
L6.4	The airblast overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) at any noise sensitive locations 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.		Blast overpressure results between 115dB and 120dB, were less than the allowable 5% during the 2013 to 2015 period. Two overpressure readings greater than 115dB were recorded in 2013-2014: <ul style="list-style-type: none"> BM1 - 116.6dB Lin on 6 December 2013; BM5 - 120.0dB Lin on 11 March 2014; and 	Compliant

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			two (2) overpressure readings greater than 115dBL were recorded in 2015: <ul style="list-style-type: none"> • BM1 - 115.9dBL on 30 April 2015; • BM5 – 115.4dBL on 29 September 2015 Three blasts on 3 and 4 of December 2015 exceeded 120dBL at Ridge Road monitoring site due to faulty microphone on the BM5 monitor.	
L6.5	Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time at any noise sensitive locations. 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.		No vibration results exceeded the 10mm/s criteria at any monitoring location during the 2013 to 2015 period.	Compliant
L6.6	Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/sec at any noise sensitive locations 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. <i>Note: 1. The airblast overpressure and ground vibration levels in conditions L6.3 to L6.6 do not apply at noise sensitive locations that are owned by the licensee or subject to a private agreement, relating to airblast overpressure and ground vibration levels, between the licensee and land owner. 2. "Noise sensitive locations" includes buildings used as a residence, hospital, school, child care centres, places of public worship and nursing homes. A noise sensitive location includes the land within 30 metres of the building.</i>		All vibration results at all monitoring locations were less than the 5mm/s criteria over the period of 2013 to 2015.	Compliant
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.		The Moolarben Coal activities are carried out in a competent manner for the processing, handling, movement and storage of materials and substances used to carry out the activity; and the management of waste generated by the activity	Compliant Ongoing
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		All plant and equipment used at the Moolarben Coal Complex is maintained and operated in a proper and	Compliant Ongoing

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	proper and efficient condition; and b) must be operated in a proper and efficient manner.		efficient manner. All maintenance is conducted at the Maintenance Workshops on site.	
O3	Dust			
O3.1	All areas in or on the premises must be maintained in a condition that prevents or minimises the emission into the air of air pollutants (which includes dust).		Interviews and a site inspection of each emission generating activity on the Moolarben Coal Complex operations was assessed and considered compliant with conditions O3.1, O3.2 and O3.3: - Scrapers on topsoil. Roads are designated and watered to reduce dust generation. - Water injection and water curtains are used on drill rigs. Equipment is shutdown if not operating correctly. - Procedures and checklists are used prior to blasting to reduce dust generation. - Procedures for loading trucks to reduce dust include minimising drop height, reducing swing rates, slowing production. - Haulage truck operators are encouraged to radio directly to the water carts. Fill points have been appropriately positioned around haul routes. - Dust curtains and sprays operate when dumping to hoppers. Hoppers are enclosed on 3 sides and roof. Transfer points are covered. - Dumping to emplacement areas managed depending on the weather conditions. - Dozers can be moved to alternative dumps if required during adverse weather conditions. - Pre-strip areas are minimised to reduce wind erosion. - Toolbox talks viewed which included discussion of air quality and minimising dust.	Compliant
O3.2	Any activity in or on the premises must be carried out by such practicable means as to prevent or minimise the emission into the air of air pollutants (which includes dust).			Compliant
O3.3	Any activity in or on the premises must be carried out by such practicable means as to prevent or minimise the emission into the air of air pollutants (which includes dust).			Compliant
O4	Effluent application to land			
O4.1	Effluent application must not occur in a manner that causes surface runoff.		No evidence of runoff or erosion caused by runoff was observed during the audit site inspections.	Compliant Ongoing
O4.2	Spray from effluent application must not drift beyond the boundary of the premises		Effluent application to the grassed bund adjacent to the administration buildings does not result in drift beyond the boundary of the premises.	Compliant Ongoing

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O4.3	The quantity of effluent applied to the utilisation area(s) must not exceed the capacity of the utilisation area(s) to effectively utilise the effluent. For the purpose of this condition, "effectively utilise" includes the ability of the soil to absorb the nutrient, salt and hydraulic loads and the applied organic material without causing harm to the environment		The effluent applied to the grassed utilisation area did not appear to exceed the capacity of the utilisation area to effectively utilise the effluent as no evidence of runoff was observed.	Compliant Ongoing
O5	Processes and management			
O5.1	All chemicals, fuels and explosives must be handled and stored in a bunded area which complies with the specifications of the relevant Australian Standard and legislative requirements.	<ul style="list-style-type: none"> • AS1940-2004: Storage and handling of flammable and combustible liquids • AS2187.1-1998: Explosives – storage and transport • AS3780-1994: The storage and handling of corrosive substances • AS/NZS 3833:1998: The storage and handling of mixed classes of dangerous goods in packages and intermediate bulk containers 	All chemicals, fuels and explosives stored at the Moolarben Coal Complex site are within bunded areas that comply with the specifications of the relevant Australian Standard.	Compliant
O5.2	Contingency and emergency management plans must be developed and implemented for the spill of any chemical and fuel.	<ul style="list-style-type: none"> • Pollution Incident Response Management Plan, 17 Dec 2015 	The Pollution Incident Response Management Plan prepared to satisfy EPL 12932 is immediately implemented in the event of a spill of chemical or fuel resulting in a pollution incident.	Compliant
O6	Other operating conditions			
O6.1	The sediment basins identified as EPA identification no. (licence discharge points) 24, 26, 29, 30, 31, 33 and 35 under condition P1.3 must be drained or pumped out as necessary to maintain each basins design storage capacity, within 5 days following rainfall.		Maintenance of sediment basins was observed during the site audit inspections with de-silting observed at sediment dam to the east of the maintenance workshop. Sediment dams have currently been constructed larger than design storage capacity requirement calculated in accordance with the 'Blue Book'.	Compliant Ongoing
O6.2	Water discharged to comply with condition O6.1 may only be discharge to waters from sediment basins identified under licence discharge points 24, 26, 29, 30, 31, 33 and 35 where the water complies with the discharge limit specified under condition L2.4 for licence discharge points 24, 26, 29, 30, 31, 33 and 35.		No discharges to waters occurred between 2013 and 2015.	Compliant

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O6.3	The licensee must also undertake maintenance as necessary to desilt basins identified as under licence discharge points 24, 26, 29, 30, 31, 33 and 35 in order to retain each basins design storage capacity.		Inspection of sediment dams undertaken after rainfall or on routine environmental site inspections determine when desilting is required.	Compliant Ongoing
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.			Noted
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.		All monitoring records are kept by Moolarben Coal and are in a legible form, and retained in the Environment Department at the Moolarben Coal site.	Compliant Ongoing
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.		Records of sampling are completed on Chain-of-Custody forms and record: <ul style="list-style-type: none"> • date and time the sample is collected; • monitoring point ID; and • the name of the person who collected the sample 	Compliant Ongoing
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:			Noted

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M2.2	<p>Air Monitoring Requirements Points 6,7,9,10,11,12,13,14</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Pollutant</th> <th style="text-align: center;">Unit of Measure</th> <th style="text-align: center;">Frequency</th> <th style="text-align: center;">Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Particulates – Deposited Matter</td> <td>g/m²/mth</td> <td>Monthly</td> <td>AM-19</td> </tr> </tbody> </table> <p>Points 15, 17, 27</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Pollutant</th> <th style="text-align: center;">Unit of Measure</th> <th style="text-align: center;">Frequency</th> <th style="text-align: center;">Sampling Method</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td>µg/m³</td> <td>Continuous</td> <td>AM-22</td> </tr> </tbody> </table> <p>Point 16</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Pollutant</th> <th style="text-align: center;">Unit of Measure</th> <th style="text-align: center;">Frequency</th> <th style="text-align: center;">Sampling Method</th> </tr> </thead> <tbody> <tr> <td>PM₁₀</td> <td>µg/m³</td> <td>Every 6 days</td> <td>AM-18</td> </tr> </tbody> </table>	Pollutant	Unit of Measure	Frequency	Sampling Method	Particulates – Deposited Matter	g/m ² /mth	Monthly	AM-19	Pollutant	Unit of Measure	Frequency	Sampling Method	PM ₁₀	µg/m ³	Continuous	AM-22	Pollutant	Unit of Measure	Frequency	Sampling Method	PM ₁₀	µg/m ³	Every 6 days	AM-18	<ul style="list-style-type: none"> Air Quality Management Plan, 31 Jul 2015 	Monitoring is undertaken in accordance with the Air Quality Management Plan monitoring program and AM-22, AM-18 and AM-19.	Compliant Ongoing			
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M2.3	<p>Water and/ or Land Monitoring Requirements Points 1, 2, 28</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Pollutant</th> <th style="text-align: center;">Unit of Measure</th> <th style="text-align: center;">Frequency</th> <th style="text-align: center;">Sampling Method</th> </tr> </thead> <tbody> <tr> <td>Conductivity</td> <td>µS/cm</td> <td rowspan="3" style="text-align: center;">Continuous during discharge</td> <td>Continuous</td> </tr> <tr> <td>Turbidity</td> <td>NTU</td> <td>Probe</td> </tr> <tr> <td>pH</td> <td>pH units</td> <td>Continuous</td> </tr> <tr> <td>Oil and Grease</td> <td>mg/l</td> <td rowspan="4" style="text-align: center;">Daily during any discharge</td> <td>Grab sample</td> </tr> <tr> <td>TSS</td> <td>mg/l</td> <td>Composite sample</td> </tr> <tr> <td>Iron</td> <td>mg/l</td> <td>Grab sample</td> </tr> <tr> <td>Zinc</td> <td>mg/l</td> <td>Grab sample</td> </tr> </tbody> </table>	Pollutant	Unit of Measure	Frequency	Sampling Method	Conductivity	µS/cm	Continuous during discharge	Continuous	Turbidity	NTU	Probe	pH	pH units	Continuous	Oil and Grease	mg/l	Daily during any discharge	Grab sample	TSS	mg/l	Composite sample	Iron	mg/l	Grab sample	Zinc	mg/l	Grab sample	<ul style="list-style-type: none"> Surface Water Management Plan, Jul 2015 Groundwater Management Plan, 31 Jul 2015 	<p>Points 1, 2, 28 No licensed discharges occurred between January 2013 and December 2015.</p>	Compliant Ongoing
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M2.4	<p><i>Note:</i></p> <p><i>For the purposes of the table(s) above Special Frequency 1 means Point 3 is required to be sampled monthly in the event of a flow, and daily during periods of discharge from licence point 1 and in the event of a flow at Point 3.</i></p> <p><i>For the purposes of the table(s) above Special Frequency 1 means Point 4 is required to be sampled monthly in the event of a flow.</i></p>			Noted
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.		Sample collection is undertaken using ALS bottles, COCs and submission to a NATA accredited lab (ALS Mudgee). Discharge point (LDP 2) includes a real time automatic sampler linked to Citec, which has the ability to shut-down pumping prior to reaching discharge limits.	Compliant Ongoing
M3.2	<p>Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:</p> <p>a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or</p> <p>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</p> <p>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.</p> <p><i>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".</i></p>	<ul style="list-style-type: none"> <i>Approved Methods for the Sampling and Analysis of Air Pollutants in NSW, DECC</i> 	Monitoring of air emissions is conducted in accordance with the "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".	Compliant Ongoing
M4	Weather monitoring			
M4.1	The meteorological weather station (licence point 25) must be maintained so as to be capable of continuously monitoring the parameters specified in condition M4.2.		The weather station and data from the weather station were inspected, and found to be compliant with the requirements of condition M4.	Compliant

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M4.2	<p>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.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Parameter</th> <th style="text-align: center;">Unit of Measure</th> <th style="text-align: center;">Frequency</th> <th style="text-align: center;">Averaging Period</th> <th style="text-align: center;">Sampling Method</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Wind speed</td> <td style="text-align: center;">m/s</td> <td style="text-align: center;">Continuous</td> <td style="text-align: center;">15 minutes</td> <td style="text-align: center;">AM-2 and AM-4</td> </tr> <tr> <td style="text-align: center;">Wind direction</td> <td style="text-align: center;">Degrees</td> <td style="text-align: center;">Continuous</td> <td style="text-align: center;">15 minutes</td> <td style="text-align: center;">AM-2 and AM-4</td> </tr> <tr> <td style="text-align: center;">Sigma theta</td> <td></td> <td style="text-align: center;">Continuous</td> <td style="text-align: center;">15 minutes</td> <td style="text-align: center;">AM-2 and AM-4</td> </tr> <tr> <td style="text-align: center;">Rainfall</td> <td style="text-align: center;">Mm</td> <td style="text-align: center;">Continuous</td> <td style="text-align: center;">15 minutes</td> <td style="text-align: center;">AM-4</td> </tr> <tr> <td style="text-align: center;">Temperature</td> <td style="text-align: center;">°C</td> <td style="text-align: center;">Continuous</td> <td style="text-align: center;">1 hour</td> <td style="text-align: center;">AM-4</td> </tr> <tr> <td style="text-align: center;">Relative humidity</td> <td style="text-align: center;">%</td> <td style="text-align: center;">Continuous</td> <td style="text-align: center;">1 hour</td> <td style="text-align: center;">AM-4</td> </tr> </tbody> </table>	Parameter	Unit of Measure	Frequency	Averaging Period	Sampling Method	Wind speed	m/s	Continuous	15 minutes	AM-2 and AM-4	Wind direction	Degrees	Continuous	15 minutes	AM-2 and AM-4	Sigma theta		Continuous	15 minutes	AM-2 and AM-4	Rainfall	Mm	Continuous	15 minutes	AM-4	Temperature	°C	Continuous	1 hour	AM-4	Relative humidity	%	Continuous	1 hour	AM-4	<ul style="list-style-type: none"> Air Quality Management Plan, Version 3, section 7.1.4, Jul 2015 AS-2923 NSW Industrial Noise Policy Approved Methods for Sampling of Air Pollutants in New South Wales Guideline, DECC EPL 12932 condition M4.2 	<p>Three weather stations are available for data collection on the Moolarben site (WS01, WS02 and WS03) during 2015. The meteorological stations operated by Moolarben Coal provide data for use by the project:</p> <ul style="list-style-type: none"> Weather station (WS01) located at the mine site administration office WS02 located at the Coal Handling and Preparation Plant; and WS03 located on a property on Ulan Road. WS03 is the main weather station linked into the real-time monitoring system for reporting purposes, with WS01 used to supplement weather data as required. <p>WS01 and WS03 are linked to the real-time monitoring system to provide real time weather data. The WS03 weather station was inspected during the audit. Minespex undertook a review of the siting of the monitoring units against the guidelines contained in the relevant Australian Standards referenced by the EPA Approved Methods publication in September 2010 and concluded that the siting conformed with AS2923. Data from the weather station is available as 15-minute continuous recording. Sigma-theta data available to estimate temperature lapse rate is also available from the weather station operated by the adjacent Wilpinjong Coal Mine from a 60m tower.</p> <p>The weather stations measure the parameters required by EPL 12932 condition M4.2 for the site in accordance with the approved methods.</p>	Compliant Ongoing
Parameter	Unit of Measure	Frequency	Averaging Period	Sampling Method																																			
Wind speed	m/s	Continuous	15 minutes	AM-2 and AM-4																																			
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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.	<ul style="list-style-type: none"> Community Complaints Register 2015 Community Complaints Register 2013 and 2014 	All complaints made to Moolarben Coal are maintained in the Complaints Register as legible records.	Compliant Ongoing																																			
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;		The Moolarben Coal Complaints Register records the following information in accordance with condition M5.2:	Compliant Ongoing																																			

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	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, the reasons why no action was taken.		<ul style="list-style-type: none"> • date and time of the complaint; • details of the complainant • nature of the complaint; • the action taken by Moolarben Coal in relation to the complaint, including any follow-up contact with the complainant; and • action taken by Moolarben Coal. 	Compliant						
M5.3	The record of a complaint must be kept for at least 4 years after the complaint was made.			Compliant Ongoing						
M5.4	The record must be produced to any authorised officer of the EPA who asks to see them.			Noted						
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.			Compliant Ongoing						
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.		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, is available on the Moolarben Coal website and	Compliant						
M6.3	The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.			Noted						
M7	Requirement to monitor volume or mass									
M7.1	For each discharge point or utilisation area specified below, the licensee must monitor: a) the volume of liquids discharged to water or applied to the area; b) the mass of solids applied to the area; c) the mass of pollutants emitted to the air; at the frequency and using the method and units of measure, specified below. Point 1 and 2 <table border="1" style="width: 100%; margin-top: 5px;"> <thead> <tr> <th style="text-align: center;">Frequency</th> <th style="text-align: center;">Units of Measure</th> <th style="text-align: center;">Sampling Method</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Continuous during discharge</td> <td style="text-align: center;">ML / day</td> <td style="text-align: center;">Flow meter and continuous logger</td> </tr> </tbody> </table>	Frequency	Units of Measure	Sampling Method	Continuous during discharge	ML / day	Flow meter and continuous logger		Point 1 and 2 No licensed discharges occurred during the audit period.	Not triggered
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Continuous during discharge	ML / day	Flow meter and continuous logger								

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Frequency	Units of Measure	Sampling Method								
Continuous during discharge	kL/ day	Flow meter and continuous logger								
M8	Blasting									
M8.1	<p>To determine compliance with condition(s) L6.3 to L6.6:</p> <p>a) Airblast overpressure and ground vibration levels experienced at the following noise sensitive locations must be measured and recorded for all blasts carried out on the premises;</p> <p style="padding-left: 20px;">i) Ulan Public School, Ulan</p> <p>b) Instrumentation used to measure and record the airblast overpressure and ground vibration levels must meet the requirements of Australian Standard AS 2187.2-2006.</p> <p><i>NOTE: A breach of the licence will still occur where airblast overpressure or ground vibration levels from the blasting operations at the premises in excess of the limit specified in conditions L6.3 to L6.6 are detected at any "noise sensitive locations" other than the locations identified in the above condition.</i></p>	<ul style="list-style-type: none"> AS 2187.2-2006 Blast Management Plan, Jul 2015 	<p>Airblast overpressure and ground vibration levels are monitored for each blast at the Ulan Public School (Monitor BM1).</p> <p>Instrumentation used to measure and record the airblast overpressure and ground vibration levels are compliant with the requirements of Australian Standard AS 2187.2-2006</p>	Compliant Ongoing						
M9	Noise monitoring									
M9.1	To determine compliance with the noise limits contained in condition L5.1 noise monitoring must be conducted in accordance with the document "Moolarben Coal Complex Noise Management Plan June 2015" (as amended from time to time).			Noted						
6	Reporting Conditions									
R1	Annual return documents									
R1.1	<p>The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:</p> <p>a) a Statement of Compliance; and</p> <p>b) a Monitoring and Complaints Summary.</p> <p>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</p>	<ul style="list-style-type: none"> 2012-2013 Annual Return 2013-2014 Annual Return 	Moolarben Coal have completed and supplied an Annual Return on the approved form to the EPA each year.	Compliant						
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below.			Noted						

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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.			Not applicable
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.			Not applicable
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').	<ul style="list-style-type: none"> • 2012-2013 Annual Return • 2013-2014 Annual Return 	The Annual Returns for Moolarben Coal have been supplied to the EPA not later than 60 days after the end of each reporting period.	Compliant
R1.5	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.	<ul style="list-style-type: none"> • 2012-2013 Annual Return • 2013-2014 Annual Return 	Copies of the Annual Returns to the EPA are retained in the Environment Department files at the Moolarben Coal site.	Compliant
R1.6	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. <i>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.</i> <i>Note: An application to transfer a licence must be made in the approved form for this purpose.</i>	<ul style="list-style-type: none"> • 2012-2013 Annual Return • 2013-2014 Annual Return 	The Statement of Compliance and Monitoring and Complaints Summary provided to the EPA in the Annual Return are signed by approved officers of the Company.	Compliant
R2	Notification of environmental harm			
R2.1	Notifications must be made by telephoning the Environment Line service on 131 555.			Noted

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R2.2	<p>The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.</p> <p><i>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.</i></p>	<ul style="list-style-type: none"> • <i>Protection of the Environment Operations Act 1997, Part 5.7</i> • Letter to EPA re Overpressure Report, 9 Dec 2015 	The EPA was notified of three blasts on 3 and 4 of December 2015 that exceeded 120dBL at Ridge Road monitoring site due to faulty microphone on the BM5 monitor.	Compliant Ongoing
R3	Written report			
R3.1	<p>Where an authorised officer of the EPA suspects on reasonable grounds that:</p> <p>a) where this licence applies to premises, an event has occurred at the premises; or</p> <p>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.</p>	<ul style="list-style-type: none"> • Pollution Incident Response Management Plan, 17 Dec 2015 		Noted
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.			Noted
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.			Noted
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.			Noted

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R4	Other reporting conditions				
R4.1	<p>Every six (6) months, the licensee must complete and submit to the EPA a report comprising:</p> <p>a) Data, reported graphically where practicable, for monitoring conducted in accordance with licence requirements;</p> <p>b) Statement of compliance; and</p> <p>c) A complaints summary.</p> <p>The report must be received by the EPA no later than 4 weeks after the end of the period being reported.</p>	<ul style="list-style-type: none"> Monthly Environmental Monitoring Reports, Jan to Oct 2015 	<p>Moolarben Coal prepare and submit Monthly Environmental Monitoring Reports to the EPA on:</p> <ul style="list-style-type: none"> Eight dust deposition gauge sites; Three Tapered Element Oscillating Microbalance (TEOM) PM10 sites; One PM10 High Volume Air Sampler (HVAS); 15 water discharge points (5 conceptual); Two surface water quality sites; Three effluent discharge sites; Blast monitoring; Noise monitoring; and Meteorological monitoring. 	Compliant Ongoing	
R4.2	<p>A noise compliance assessment report must be submitted to the EPA by 31 January each year. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:</p> <p>a) an assessment of compliance with noise limits presented in Condition L5.1; and</p> <p>b) an outline of any management actions taken within the monitoring period to address any exceedances of the limits contained in Condition L5.1.</p>		<p>Moolarben Coal prepare a Monthly Environmental Monitoring Report that includes noise monitoring results and interpretation against noise criteria.</p> <p>The preparation of a monthly report and AEMR reporting of noise exceeds the requirement of this condition.</p>	Compliant	
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.		Copies of the EPL are available in the Environment Department offices.	Compliant	
G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.			Noted	
G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises			Copies of the EPL are available in the Environment Department offices.	Compliant
G2	Signage				
G2.1	Each monitoring and discharge point must be clearly marked by a sign that indicates the EPA point identification number.		Effluent monitoring point clearly marked indicating the EPA point identification number.	Monitoring and discharge points are clearly marked by a sign indicating the EPA point identification number	Compliant

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8	Pollution Studies and Reduction Programs			
U1	Particulate Matter Control Best Practice Implementation – Wheel Generated Dust	<ul style="list-style-type: none"> Moolarben Coal Particulate Matter Control Best Practice Pollution Reduction Program 25 Jan 2012 	The Moolarben Coal Particulate Matter Control Best Practice Pollution Reduction Program prepared by PAE Holmes and submitted to the EPA on 25 January 2012. EPL Notice of Variation 150486 dated 22 March 2013, removed this condition following satisfactory completion.	Compliant COMPLETE
U2	Particulate Matter Control Best Practice Implementation – Disturbing and Handling Overburden in Adverse Weather Conditions	<ul style="list-style-type: none"> Moolarben Coal Particulate Matter Control Best Practice Pollution Reduction Program 25 Jan 2012 	The Moolarben Coal Particulate Matter Control Best Practice Pollution Reduction Program prepared by PAE Holmes and submitted to the EPA on 25 January 2012. EPL Notice of Variation 150486 dated 22 March 2013, removed this condition following satisfactory completion.	Compliant COMPLETE
U3	Particulate Matter Control Best Practice Implementation - Trial of Best Practice Measures for Disturbing and Handling Overburden	<ul style="list-style-type: none"> Particulate Matter Control Best Practice Implementation - Wheel Generated Dust & Disturbing and Handling Overburden in Adverse Weather Conditions, Todoroski Air Sciences, 14 Aug 2014 	The document Particulate Matter Control Best Practice Implementation - Wheel Generated Dust & Disturbing and Handling Overburden in Adverse Weather Conditions, was prepared by Todoroski Air Sciences, dated 14 Aug 2014 to satisfy EPL 12932 condition U3. The report was submitted to the EPA as required by condition U3.	Compliant
U4	Upgrades to the Water Management System	<ul style="list-style-type: none"> Moolarben Coal Water Management System Design Review EPL condition U2 	The water upgrade works are complete. The remediation of the rail loop is ongoing.	Compliant Ongoing

Attachment F

Mining Lease 1605 – dated 20 December 2007. Land Area 1098ha. Condition Nos. 2-8 (inclusive) and 17- 23 (inclusive) are identified as conditions relating to environmental management for the purposes of Sections 125(3) and 374A of the Mining Act 1992

Mining Lease 1606 – dated 20 December 2007. Land Area 495.4ha. Condition Nos. 2-8 (inclusive) and 17- 23 (inclusive) are identified as conditions relating to environmental management for the purposes of Sections 125(3) and 374A of the Mining Act 1992

Mining Lease 1628 – dated 24 February 2009. Land Area 260.5ha. Condition Nos. 2-8 (inclusive) and 17- 23 (inclusive) are identified as conditions relating to environmental management for the purposes of Sections 125(3) and 374A of the Mining Act 1992

Mining Lease 1691 – dated 23 September 2013. Land Area 900.6ha. Condition Nos. 2-8 (inclusive) and 12-16 (inclusive) are identified as conditions relating to environmental management for the purposes of Sections 125(3) and 374A of the Mining Act 1992

Mining Lease 1715 – dated 31 August 2015. Land area 3,741ha.

Mining Lease No.	Condition No.	Project Approval Condition	Verification	Comments	Compliance
		Environmental Harm			
ML 1605 ML 1606 ML 1628 ML 1715	2	The proponent 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.	<ul style="list-style-type: none"> Aboriginal Cultural Heritage Management Plan Air Quality Management Plan Blast Management Plan, Blast Fume Management Strategy Environmental Management Strategy Heritage Management Plan Landscape Management Plan 	Management of environmental impacts from the Moolarben Coal Complex project occurs under the approved Environmental Management Strategy and sub-plans prepared in accordance with the requirements of Project Approval 05_0117 Molarben Coal Project and Project Approval 08_0135 Stage 2: <ul style="list-style-type: none"> Aboriginal Cultural Heritage Management Plan Air Quality Management Plan Blast Management Plan, Blast Fume Management Strategy Environmental Management Strategy 	Compliant
ML 1691	2	The lease holder must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of any activities under this lease. For the purposes of this condition: ((i) environment means components of the earth, including: land, air and water, and any layer of the atmosphere, and any organic or inorganic matter and any living organism, and human-made or modified structures and areas, and includes interacting natural ecosystems that include components referred to in paragraphs (A)—(C).	<ul style="list-style-type: none"> Aboriginal Cultural Heritage Management Plan Air Quality Management Plan Blast Management Plan, Blast Fume Management Strategy Environmental Management Strategy Heritage Management Plan Landscape Management Plan 	Management of environmental impacts from the Moolarben Coal Complex project occurs under the approved Environmental Management Strategy and sub-plans prepared in accordance with the requirements of Project Approval 05_0117 Molarben Coal Project and Project Approval 08_0135 Stage 2: <ul style="list-style-type: none"> Aboriginal Cultural Heritage Management Plan Air Quality Management Plan Blast Management Plan, Blast Fume Management Strategy Environmental Management Strategy 	Compliant

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Mining Lease No.	Condition No.	Project Approval Condition	Verification	Comments	Compliance
		(ii) harm to the environment includes any direct or indirect alteration of the environment that has the effect of degrading the environment and, without limiting the generality of the above, includes any act or omission that results in pollution, contributes to the extinction or degradation of any threatened species, populations or ecological communities and their habitats and causes impacts to places, objects and features of significance to Aboriginal people.	<ul style="list-style-type: none"> • Noise Management Plan • Waste Management Plan • Water Management Plan • Biodiversity Offset Management Plan 	<ul style="list-style-type: none"> • Heritage Management Plan • Landscape Management Plan • Noise Management Plan • Waste Management Plan • Water Management Plan • Biodiversity Offset Management Plan 	
		Rehabilitation			
ML1715	2	Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	<ul style="list-style-type: none"> • Rehabilitation Management Plan Version 3 Jul 2015 		Noted
		Mining Operations Plan and Annual Rehabilitation Report			
ML 1605 ML 1606 ML 1628 ML 1691 ML 1715	3	<p>(a) Mining operations must not be carried out otherwise than in accordance with a Mining Operations Plan (MOP) which has been approved by the Director-General of the Department of Primary Industries.</p> <p>(b) The MOP must:</p> <ol style="list-style-type: none"> i. identify areas that will be disturbed by mining operations; ii. detail the staging of specific mining operations; iii. identify how the mine will be managed to allow mine closure; iv. identify how mining operations will be carried out on site in order to prevent and or minimise harm to the environment; v. reflect the conditions of approval under: <ul style="list-style-type: none"> • the Environmental Planning and Assessment Act 1979 • the Protection of the Environment Operations Act 1997 vi. and any other approvals relevant to the development including the conditions of this lease; and <p>(c) The MOP must be prepared in accordance with the <i>ESG3: Mining Operations Plan (MOP) Guidelines September 2013</i> published on the Department's website at www.resources.nsw.gov.au/environment</p> <p>(d) The titleholder may apply to the Director-General to amend an approved MOP at any time.</p> <p>(e) It is not a breach of this condition if:</p> <ol style="list-style-type: none"> (i) the operations constituting the breach were necessary to comply with a lawful order or direction given under the Mining Act 1992, the Environmental Planning and Assessment Act 1979, Protection of the Environment Operations Act 1997 or the Occupational Health and Safety Act 2000; and 	<ul style="list-style-type: none"> • Mining Operations Plan, Sep 2015 to Dec 2016 • Letter from DRE re Approval of MOP, 4 Sep 2015 	<p>a) Moolarben Coal mining operations are carried out in accordance with the approved Mining Operations Plan (MOP).</p> <p>(b) The MOP:</p> <ul style="list-style-type: none"> • Section 2.1 identifies areas that will be disturbed by Moolarben Coal mining operations; • detail the staging of specific mining operations; • sections 4 and 5 identify how the mine will be managed to allow mine closure; • section 3 identifies how mining operations will be carried out on site in order to prevent and or minimise harm to the environment; • section 1.2 reflect the conditions of approval under: • the EP&A Act 1979, POEO Act 1997 • and other approvals relevant to the development including the conditions of this lease; and relevant guidelines adopted by the Director-General. <p>(c) Noted.</p> <p>(d) Noted;</p> <p>(e) The current MOP ceases to have affect in December 2016.</p>	Compliant Ongoing

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Mining Lease No.	Condition No.	Project Approval Condition	Verification	Comments	Compliance
ML1715	3(f)	<p>(ii) the Minister had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out.</p> <p>(f) A MOP ceases to have effect 7 years after date of approval or other such period as identified by the Director-General.</p> <p>(f) The lease holder must prepare a Rehabilitation Report to the satisfaction of the Minister. The report must:</p> <ul style="list-style-type: none"> (i) provide a detailed review of the progress of rehabilitation against the performance measures and criteria established in the approved MOP; (ii) be submitted annually on the grant anniversary date (or at such other times as agreed by the Minister); and (iii) be prepared in accordance with any relevant annual reporting guidelines published on the Department's website at www.resources.nsw.gov.au/environment. <p><i>Note: The Rehabilitation Report replaces the Annual Environmental Management Report.</i></p>	<ul style="list-style-type: none"> • Rehabilitation Management Plan Version 3 Jul 2015 	A Highwall slip in OC2 that occurred in November 2015 was notified to DRE and a precautionary closure of Ulan-Wollar Road occurred.	
ML1715		Compliance Reporting			
ML1715	4	<p>(a) The lease holder must submit a Compliance Report to the satisfaction of the Minister. The report must be prepared in accordance with any relevant guidelines or requirements published by the Minister for compliance reporting.</p> <p>(b) The Compliance Report must include:</p> <ul style="list-style-type: none"> (i) the extent to which the conditions of this mining lease or any provisions of the Act or the regulations applicable to activities under this mining lease, have or have not been complied with; (ii) particulars of any non-compliance with any such conditions or provisions; (iii) the reasons for any such non-compliance; (iv) any action taken, or to be taken, to prevent any recurrence or to mitigate the effects, of that non-compliance. <p>(c) The Compliance Report must be lodged with the Department annually on the grant anniversary date for the life of this mining lease.</p> <p>(d) In addition to annual lodgement under condition 4(c) above, a Compliance Report:</p> <ul style="list-style-type: none"> (i) must accompany any application to renew this mining lease under the Act; (ii) must accompany any application to transfer this mining lease 		Mining Lease granted 30 August 2015.	Not triggered

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Mining Lease No.	Condition No.	Project Approval Condition	Verification	Comments	Compliance
		under the Act; and (iii) must accompany any application to cancel, or to partially cancel, this mining lease under the Act. (e) Despite the submission of any Compliance Report under (c) or (d) above, the titleholder must lodge a Compliance Report with the Department at any date or dates otherwise required by the Minister. (f) A Compliance Report must be submitted one month prior to the expiry of this mining lease, where the licence holder is not seeking to renew or cancel this mining lease.			
		Environment Management Reporting			
ML 1605 ML 1606 ML 1628	4	The lease holder must lodge environmental Management Reports (EMR) with The Director-General annually or at dates otherwise directed by the Director-General.	<ul style="list-style-type: none"> • 2012-2013 AEMR • 2013-2014 AEMR • Mining Lease Annual Reports 	The Annual Environmental Management Reports report against compliance with the MOP, progress in respect of rehabilitation completion criteria, the extent of compliance with regulatory requirements, and relevant guidelines adopted by the Director-General DRE.	Compliant
ML1691	4	The lease holder must lodge Environmental Management Reports (EMR) with The Director-General annually or at dates otherwise directed by the Director-General. The EMR must: (i) report against compliance with the MOP; (ii) report on progress in respect of rehabilitation completion criteria; (iii) report on the extent of compliance with regulatory requirements; and have regard to any relevant guidelines adopted by the Director-General;	<ul style="list-style-type: none"> • 2012-2013 AEMR • 2013-2014 AEMR 	The Annual Environmental Management Reports report against compliance with the MOP, progress in respect of rehabilitation completion criteria, the extent of compliance with regulatory requirements, and relevant guidelines adopted by the Director-General DRE.	Compliant
ML 1605 ML 1606 ML 1628	5	The EMR must: report against compliance with the MOP; report on progress in respect of rehabilitation completion criteria; report on the extent of compliance with regulatory requirements; and have regard to any relevant guidelines adopted by the Director-General;	<ul style="list-style-type: none"> • 2012-2013 AEMR • 2013-2014 AEMR 	The Annual Environmental Management Reports report against compliance with the MOP, progress in respect of rehabilitation completion criteria, the extent of compliance with regulatory requirements, and relevant guidelines adopted by the Director-General;	Compliant
ML 1691	5	(a) The lease holder must report any environmental incidents. The report must: be prepared according to any relevant Departmental guidelines; be submitted within 24 hours of the environmental incident occurring;	<ul style="list-style-type: none"> • Pollution Incident Response Management Plan, 17 Dec 2015 	Ulan-Wollar Road relocated prior to audit period following a Highwall slip in OC2. Reporting requirements met for DRE and EPA/DPE in PIRMP.	Compliant

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Mining Lease No.	Condition No.	Project Approval Condition	Verification	Comments	Compliance
		<p>(b) For the purposes of this condition, environmental incident includes: any incident causing or threatening material harm to the environment any breach of Conditions 1 to 9 and 11 to 24; any breach of environment protection legislation; or, a serious complaint from landholders or the public. (c) For the purposes of this condition, harm to the environment is material if: it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, where loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.</p>	<ul style="list-style-type: none"> Letter to DRE re Highwall Incident, 4 Nov 2015 		
ML1715	5	<p>Environmental Incident Report (a)The lease holder must notify the Department of all: (i) breaches of the conditions of this mining lease or breaches of the Act causing or threatening material harm to the environment; and (ii) breaches of environmental protection legislation causing or threatening material harm to the environment (as defined in the Protection of the Environment Operations Act 1997), arising in connection with significant surface disturbing activities, including mining operations, mining purposes and prospecting operations, under this mining lease. The notification must be given immediately after the lease holder becomes aware of the breach. <i>Note. Refer to www.resources.nsw.dov.au/environment for notification contact details.</i> (b)The lease holder must submit an Environmental Incident Report to the Department within seven (7) days of all breaches referred to in condition 5(a)(i) and (ii). The Environmental Incident Report must include: (i) the details of the mining lease; (ii)contact details for the lease holder; (iii) a map identifying the location of the incident and where material harm to the environment has or is likely to occur; (iv) a description of the nature of the incident or breach, likely causes and consequences; (v) a timetable showing actions taken or planned to address</p>			Noted

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Mining Lease No.	Condition No.	Project Approval Condition	Verification	Comments	Compliance
		<p>the incident and to prevent future incidents or breaches referred to in 5(a).</p> <p>(iv)a summary of all previous incidents or breaches which have occurred in the previous 12 months relating to significant surface disturbing activities, including mining operations, mining purposes and prospecting operations under this mining lease.</p> <p>Note. The lease holder should have regard to any relevant Director General's guidelines in the preparation of an Environmental Incident Report. Refer to www.resources.nsw.qov.au/environment for further details.</p> <p>(c)In addition to the requirements set out in conditions 5(a) and (b), the lease holder must immediately advise the Department of any notification made under section 148 of the Protection of the Environment Operations Act 1997 arising in connection with significant surface disturbing activities including mining operations, mining purposes and prospecting operations, under this mining lease.</p>			
ML 1605 ML 1606 ML 1628	6	<p>Additional environmental reports may be required on specific surface disturbing operations or environmental incidents from time to time as directed in writing by the Director-General and must be lodged as instructed.</p>			Noted
		Extraction Plan			
ML 1715	6	<p>(a) In this condition:</p> <p>(i) approved Extraction Plan means a plan, being:</p> <p style="margin-left: 20px;">A. an extraction plan or subsidence management plan approved in accordance with the conditions of a relevant development consent and provided to the Secretary; or</p> <p style="margin-left: 20px;">B. a subsidence management plan relating to the mining operations subject to this lease:</p> <p style="margin-left: 20px;">submitted to the Secretary on or before 31 December 2014; and approved by the Secretary.</p> <p>(ii) relevant development consent means a development consent or project approval issued under the Environmental Planning & Assessment Act 1979 relating to the mining operations subject to this lease.</p> <p>(b) The lease holder must not undertake any underground mining operations that may cause</p> <p>(c) The lease holder must ensure that the approved Extraction Plan provides for the effective management of risks</p>		<p>No underground mining had commenced at the Moolarben Coal Project at the date of this audit (December 2015)</p>	Not triggered

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Mining Lease No.	Condition No.	Project Approval Condition	Verification	Comments	Compliance
		associated with any subsidence resulting from mining operations carried out under this lease. (d) The lease holder must notify the Secretary within 48 hours of any: (i) incident caused by subsidence which has a potential to expose any person to health and safety risks; (ii) significant deviation from the predicted nature, magnitude, distribution, timing and duration of subsidence effects, and of the potential impacts and consequences of those deviations on built features and the health and safety of any person; or (iii) significant failure or malfunction of a monitoring device or risk control measure set out in the approved Extraction Plan addressing: A. built features; B. public safety; or C. subsidence monitoring.			
		Rehabilitation			
ML 1605 ML 1606 ML 1628	7	Disturbed land must be rehabilitated to a sustainable / agreed end land use to the satisfaction of the Director-General.	<ul style="list-style-type: none"> • Mining Operations Plan, Sep 2015 • Rehabilitation Management Plan. Jul 2015 	Rehabilitation strategies and implementation for the disturbed land at the Moolarben Coal Project is described in the Mining Operations Plan, September 2015 and Rehabilitation Management Plan. July 2015	Noted
ML1691	7	Any disturbance as a result of activities under this lease must be rehabilitated to the satisfaction of the Director-General.	<ul style="list-style-type: none"> • Mining Operations Plan, Sep 2015 • Rehabilitation Management Plan. Jul 2015 	The Mining Operations Plan, September 2015 and Rehabilitation Management Plan. July 2015 have been approved by the Executive Director (Director-General) of DRE.	Noted
ML 1605 ML 1606 ML 1628 ML 1691	8	Subsidence Management		No underground mining had commenced at the Moolarben Coal Project at the date of this audit (December 2015)	Not triggered
		Transmission lines, Communication lines and Pipelines			
ML 1605 ML 1606 ML 1628 ML 1691	19 13	Operations must not interfere with or impair the stability or efficiency of any transmission line, communication line, pipeline or any other utility on the lease area without the prior written approval of the Director-General and subject to any conditions he may stipulate.			Noted

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Mining Lease No.	Condition No.	Project Approval Condition	Verification	Comments	Compliance
		Prevention of Soil Erosion and Pollution			
ML 1605 ML 1606 ML 1628 ML 1691	18 12	Operations must be carried out in a manner that does not cause or aggravate air pollution, water pollution (including sedimentation) or soil contamination or erosion, unless otherwise authorised by a relevant approval, and in accordance with an accepted Mining Operations Plan. For the purpose of this condition, water shall be taken to include any watercourse, waterbody or ground waters. The lease holder must observe and perform any instructions given by the Director-General in this regard.	<ul style="list-style-type: none"> • Air Quality Management Plan, Jul 2015 • Water Management Plan, Jul 2015 • Surface Water Management Plan, Jul 2015 	During the audit inspections the site was observed to be in good condition and operations appeared to be carried out in a manner that did not cause water pollution. No incidents related to water pollution were recorded in recent times and environmental controls were established where required.	Compliant Ongoing
		Roads and Tracks			
ML 1691	14	The lease holder must pay to the relevant roads authority in control of the road or track the reasonable costs incurred by the roads authority in making good any damage to roads or tracks caused by operations carried out under this lease less any amount paid or payable from the Mine Subsidence Compensation Fund. During wet weather the use of any road or track must be restricted so as to prevent damage to the road or track. Existing access tracks should be used for all operations where reasonably practicable. New access tracks must be kept to a minimum and be positioned in order to minimise damage to the land, watercourses or vegetation. Temporary access tracks must be rehabilitated and revegetated to the satisfaction of the Director-General as soon as reasonably practicable after they are no longer required under this lease.	<ul style="list-style-type: none"> • Project Approval 05_0117 Schedule 2 condition 14 • Project Approval 08_0135 schedule 2 condition 14 • Ulan Road Strategy • Deed of Agreement for Funding and Delivery of the Ulan Road Upgrade, July 2014 	Moolarben Coal Operation Pty Ltd has a Voluntary Planning Agreement in Project Approval 05_0117 Schedule 2 condition 14 that provides for payments of road maintenance contributions and community infrastructure contributions to the Council. Moolarben Coal are also party to the Ulan Road Strategy and works with Council and the owners of the Ulan and Wilpinjong mines to make financial contributions towards the implementation of the strategy. The temporary bypass and road repairs undertaken following the OC2 highwall slip were at Moolarben Coal's cost.	Compliant
		Fences, Gates			
ML 1605 ML 1606 ML 1628	20	(a)Activities on the lease must not interfere with or damage fences without the prior written approval of the owner thereof or the Minister and subject to any conditions the Minister may stipulate. (b)Gates within the lease area must be closed or left open in accordance with the requirements of the landholder.		Moolarben Coal Operations own all the lands on which the Moolarben Coal Complex operates.	Not triggered
ML 1605 ML 1606 ML 1628	21	(a)Operations must not affect any road unless in accordance with an accepted Mining Operations Plan or with the prior written approval of the Director-General and subject to any conditions he may stipulate. (b)The lease holder must pay to the designated authority in control of the road (generally the local council or the Roads and Traffic Authority) the cost incurred in fixing any damage to roads caused	<ul style="list-style-type: none"> • Report to DRE re Highwall Slip Incident, 4 Nov 2015 	Ulan-Wollar Road relocated prior to audit period following Highwall slip, with a temporary diversion road constructed. The temporary bypass and road repairs were undertaken at Moolarben Coal's cost.	Compliant

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Mining Lease No.	Condition No.	Project Approval Condition	Verification	Comments	Compliance
		by operations carried out under the lease, less any amount paid or payable from the. Mine Subsidence Compensation Fund.			
ML 1605 ML 1606 ML 1628	22	Access tracks must be kept to a minimum and be positioned so that they do not cause any unnecessary damage to the land. Temporary access tracks must be ripped, topsoiled and revegetated as soon as possible after they are no longer required for mining operations. The design and construction of access tracks must be in accordance with specifications fixed by the Department of Climate Change and Environment.		Moolarben Coal maintain access tracks within the Moolarben Coal Complex lands so that they do not cause any unnecessary damage to the land. Temporary access tracks are ripped, topsoiled and revegetated as soon as possible after they are no longer required for mining operations.	Compliant
		Trees and Timber			
ML 1605 ML 1606 ML 1628	23	a)The lease holder must not fell trees, strip bark or cut timber on the lease without the consent of the landholder who is entitled to the use of the timber, or if such a landholder refuses consent or attaches unreasonable conditions to the consent, without the approval of a warden. The lease holder must not cut, destroy, ringbark or remove any timber or other vegetative cover on the lease area except such as directly obstructs or prevents the carrying on of operations. Any clearing not authorised under the Mining Act 1992 must comply with the provisions of the Native Vegetation Act 2003. The lease holder must obtain all necessary approvals or licences before using timber from any Crown land within the lease area.		Moolarben Coal Operations own all the lands on which the Moolarben Coal Complex operates.	Not triggered
ML 1691	15				
		Prescribed Dam			
ML 1628	29(a)	Notwithstanding any Mining Operations Plan, the lease holder must not mine within any part of the lease areas which is within the notification area of the Moolarben Creek Dam without the prior written approval of the Minister and subject to any conditions he may stipulate.	<ul style="list-style-type: none"> Letter to DSC re Prescribed Moolarben Dam, 17 May 2013 Letter to DRE re Cessation of Conditions for Moolarben Dam, 29 May 2013 	The Moolarben Creek Dam removed from Prescribed Dam register in 2013.	Not triggered

Attachment G

Water Licence 20BL172002 (Mining)

Condition No.	Project Approval Condition	Verification	Comments	Compliance
1	Bores that pass through the alluvial sediments must be constructed with sufficient casing to prevent direct entry of alluvial groundwater into the bore from, the alluvial water source. Note this does apply to bores used solely for monitoring purposes.		Design and installation of bores by Moolarben Coal have been submitted to DPI-Water.	Compliant
2	The licence holder must provide the Department of Primary Industries Water with a map of the licensed site showing areas of alluvial sediments likely to be impacted by the operation of each bore. The licence holder must provide the Department of Primary Industries Water with an updated version of this map when there is a material change to the areas of alluvial sediments likely to be impacted by the operation of each bore.	<ul style="list-style-type: none"> 2014-2015 Moolarben Coal Complex Licence Report Figure 2. 	The map of the licensed site showing areas of alluvial sediments likely to be impacted by the operation of each bore is included in the Moolarben Coal Complex Licence Report Figure 2.	Compliant Ongoing
3	The licence holder must develop and implement a methodology to estimate the annual volume of water that will be intercepted and/or taken away from any alluvial water source as defined in the relevant water sharing plan (called a water budget). The methodology must be incorporated within the Water Management Plan required under the development consent within 6 months of the date of issue of this licence.	<ul style="list-style-type: none"> 2014-2015 Moolarben Coal Complex Licence Report section 5 	<p>MCO engaged WRM to undertake a review of the Water Balance Model to reflect the current operational planning and demands. An interim monthly water balance is currently being developed by MCO to provide information between model updates, which will be used to provide a range of likely outcomes for wet and dry conditions. This will be reviewed to account for changing mine water inflows and water management infrastructure as mining progresses.</p> <p>The interim monthly water balance review should continue to be undertaken until a new water balance is finalised. Upon finalisation of the new water balance reviews should be undertaken in 6 monthly increments.</p>	Compliant
4	A finalised water budget must be submitted to the Department of Primary Industries Water as part of the annual review required to be prepared on an annual basis under the development consent or in accordance with any other similar reporting requirement under the development consent should the annual environmental management report cease to be required under the development consent. Breakdown of water budget should be in 6 monthly periods to coincide with the water year.	<ul style="list-style-type: none"> 2014-2015 Moolarben Coal Complex Licence Report section 6 	A water budget is included as part of the annual review prepared under the Project Approval 08_0135 Schedule 6 condition 4.	Compliant Ongoing

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Condition No.	Project Approval Condition	Verification	Comments	Compliance
5	The licence holder must include in the Annual Review required to be prepared on an annual basis under the development consent:			Noted
5(i)	The total volume of groundwater extracted from the bores during the relevant period of reporting	<ul style="list-style-type: none"> AEMR 2012-2013 AEMR 2013-2014 	No extraction during the 2013-14 reporting period.	Compliant
5(ii)	An estimate of the total volume of groundwater taken from the alluvial water source(s).	<ul style="list-style-type: none"> AEMR 2012-2013 AEMR 2013-2014 	206.6ML was extracted from the southern borefields with no observed impacts on overlying alluvial aquifers during the Annual Review 2013-14 period.	Compliant
6	The license holder must review and if necessary revise the groundwater management plan and the surface and groundwater response plan required under the development consent to consider the works authorised by this licence in consultation with the Department of Primary Industries Water within 6 months of the date of issue of this licence.	<ul style="list-style-type: none"> Water Management Plan, 31 Jul 2015 Groundwater Management Plan, 31 Jul 2015 	Water Management Plan and Groundwater Management Plan approved by Department in July 2015.	Compliant
11	An extraction measurement device must be installed and maintained on each bore used for extraction of water under the licence. Each extraction measurement device must meet a type and standard, and must be maintained in a manner that is consistent with any metering guidelines that have been published or notified by the Department of Primary Industries Water.		Not verified. The auditor has no reason to believe that the extraction measurement device installed by Moolarben Coal on each bore used for extraction of water under the licence would be non-compliant with the requirement.	Noted
12	As part of the annual review required under the development consent, the license holder must:			Noted
12(i)	assess compliance with terms and conditions of the licence	<ul style="list-style-type: none"> 2014-2015 Moolarben Coal Complex Water Licence Report 	Water Licence Report section 2	Compliant
12(ii)	provide a summary of the new bores or pits constructed during that year	<ul style="list-style-type: none"> 2014-2015 Moolarben Coal Complex Water Licence Report 	Water Licence Report section 7.	Compliant
12(iii)	provide key statistics for the monitoring data collated for each bore for the previous year	<ul style="list-style-type: none"> 2014-2015 Moolarben Coal Complex Licence Report 	Water Licence Report section 6	Compliant
12(iv)	Summarise events that impacted on groundwater during the previous water year including actions taken to remedy groundwater impacts in excess of project environmental assessment predictions and relevant extra monitoring results; and	<ul style="list-style-type: none"> 2014-2015 Moolarben Coal Complex Water Licence Report 	Water Licence Report Section 4 and 5.	Compliant
12(v)	include a recommendations or measures to be taken for improvements for the new water year	<ul style="list-style-type: none"> 2014-2015 Moolarben Coal Complex Water Licence Report 	Water Licence Report section 8.	Compliant

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Condition No.	Project Approval Condition	Verification	Comments	Compliance
13	As part of the independent environmental auditing requirements under the development consent the licence holder must ensure that the audit:			Noted
13(i)	seeks input from the department of Primary Industries Water	<ul style="list-style-type: none"> Letter from DPI-Water re Audit Consultation, 4 Dec 2015 	Email sent to NOW on 18 November 20145 requesting comment in relation to audit. Letter from NOW dated 4 December 2015	Compliant
13(ii)	assess compliance with terms and conditions of the licence		Independent Environmental Audit Attachment G.	Compliant
13(iii)	provide recommendations regarding any works that should be performed or additional obligations that should be imposed in order to rectify and impacts on groundwater or any connected water dependent assets in excess of project environmental assessment predictions.		Groundwater audit is detailed in Independent Environmental Audit Report section 5.10.	Noted
14	The volume of groundwater extracted from the works authorised by this license and by license(s) 20BL173923 shall not exceed 2950 ML in any 12month period commencing 1st July.		The Site Water Balance describes water used from borefields and verifies that water extraction was less than allocation over last six years.	Compliant
15	The number of works authorised by this licence is limited to 25.			Noted

Attachment H

Water Licence 20BL173923 (Mining/Industrial)

	Condition	Verification	Comments	Compliance
1	The licence holder must provide the DPI-Water with a map of the licensed site showing areas of alluvial sediments likely to be impacted by the operation of each bore. The licence holder must provide the DPI-Water with an updated version of this map when there is a material change to the areas of alluvial sediments likely to be impacted by the operation of each bore.	<ul style="list-style-type: none"> AEMR 2013-14 2014-2015 Moolarben Coal Complex Water Licence Report Figure 2 	The map of the licensed site showing areas of alluvial sediments likely to be impacted by the operation of each bore is updated/revised on a regular basis and provided to the Department of Primary Industries Water with the annual reporting and is included in the Moolarben Coal Complex Licence Report Figure 2.	Compliant Ongoing
2	The licence holder must develop and implement a methodology to estimate the annual volume of water that will be intercepted and/or taken away from any alluvial water source as defined in the relevant water sharing plan (called a water budget). The methodology must be incorporated within the Water Management Plan required under the development consent within 6 months of the date of issue of this licence.	<ul style="list-style-type: none"> Site Water Balance, Jul 2015 Water Management Plan, Jul 2015 2014-2015 Moolarben Coal Complex Licence Report section 5 		Compliant
3	A finalised water budget must be submitted to the Department of Primary Industries Water as part of the annual review required to be prepared on an annual basis under the development consent or in accordance with any other similar reporting requirement under the development consent should the annual environmental management report cease to be required under the development consent. Breakdown of water budget should be in 6 monthly periods to coincide with the water year.	<ul style="list-style-type: none"> AEMR 2012-2013 AEMR 2013-14. 	A water budget is included as part of the annual review (AEMR) prepared under the Project Approval 08_0135 Schedule 6 condition 4.	Compliant Ongoing
4	The licence holder must include in the Annual Review required to be prepared on an annual basis under the development consent:	<ul style="list-style-type: none"> AEMR 2012-2013 AEMR 2013-14. 		Noted
4(i)	The total volume of groundwater extracted from the bores during the relevant period of reporting	<ul style="list-style-type: none"> AEMR 2012-2013 AEMR 2013-14. 	206.6ML extracted during the 2013-14 reporting period.	Compliant
4(ii)	An estimate of the total volume of groundwater taken from the alluvial water source(s).	<ul style="list-style-type: none"> AEMR 2012-2013 AEMR 2013-14. 	An estimate of the total volume of groundwater taken from the alluvial water source(s)	Compliant
5	The license holder must review and if necessary revise the groundwater management plan and the surface and groundwater response plan required under the development consent to consider the works authorised by this licence in consultation with the DPI-Water within 6 months of the date of issue of this licence.	<ul style="list-style-type: none"> Water Management Plan, 31 Jul 2015 Groundwater Management Plan, 31 Jul 2015 	The Groundwater Management Plan and Surface Water Management Plan were revised, updated and approved by DP&E on 313 July 2015.	Compliant

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	Condition	Verification	Comments	Compliance
6	An extraction measurement device must be installed and maintained on each bore used for extraction of water under the licence. Each extraction measurement device must meet a type and standard, and must be maintained in a manner that is consistent with any metering guidelines that have been published or notified by the Department of Primary Industries Water.		Not verified. The auditor has no reason to believe that the extraction measurement device installed by Moolarben Coal on each bore used for extraction of water under the licence would be non-compliant with the requirement.	Noted
7	As part of the annual review required under the development consent, the license holder must:			Noted
7(i)	assess compliance with terms and conditions of the licence		Water Licence Report	Compliant
7(ii)	provide a summary of the new bores or pits constructed during that year		Water Licence Report section 7.	Compliant
7(iii)	provide key statistics for the monitoring data collated for each bore for the previous water year	<ul style="list-style-type: none"> 2014-2015 Moolarben Coal Complex Water Licence Report 	Water Licence Report section 6	Compliant
7(iv)	Summarise events that impacted on groundwater during the previous water year including actions taken to remedy groundwater impacts in excess of project environmental assessment predictions and extra monitoring results; and		Water Licence Report Section 5.	Compliant
7(v)	include a recommendations or measures to be taken for improvements for the new water year		Water Licence Report section 8.	Compliant
8	As part of the independent environmental auditing requirements under the development consent the licence holder must ensure that the audit:		Email sent to NOW on 18 November 20145 requesting comment in relation to audit. Letter from NOW dated 4 December 2015	Compliant
8(i)	seeks input from the DPI- Water			Compliant
8(ii)	assess compliance with terms and conditions of the licence		Independent Environmental Audit Attachment G.	Compliant
8(iii)	provide recommendations regarding any works that should be performed or additional obligations that should be imposed in order to rectify and impacts on groundwater or any connected water dependent assets in excess of project environmental assessment predictions		Independent Environmental Audit section 5.8 and 5.9 (if required).	Noted
9	The volume of groundwater extracted from the works authorised by this license and by license(s) 20BL172002 shall not exceed 2950 ML in any 12month period commencing 1st July.	Site Water Balance, Jul 2015	Water used from borefields was less than allocation over last six years.	Compliant
10	The number of works authorised by this licence is limited to 25.			Noted