Mt Arthur Coal

Independent Environmental Audit

November 2012

aemc

applied environmental management consultants

Date	Revision	Comment
20 March 2012	0	Independent Environmental Audit Report submitted to DP&I
November 2012	1	Audit report incorporating feedback from the Department of Planning & Infrastructure

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by

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November 2012

Table of Contents

TABLES

FIGURES

APPENDIX 1 Consultation Letters

ATTACHMENTS

Glossary

AEMR	Annual Environmental Management Report
Annual Return	Annual Return required under the EPL
Annual Review	Review required under Project Approval Schedule 5 condition 3
BCA	Building Code of Australia
CCC	Community Consultative Committee
DEC	Department of Environment and Conservation (now Office of Environment and Heritage)
DECC	Department of Environmental and Climate Change (now Office of Environment and Heritage)
DECCW	Department of Environment, Climate Change and Water (now Office of Environment and Heritage)
Department	Department of Planning (as defined in the Project Approval definitions)
DI&I	Department of Industry and Investment
Director-General	Director-General of the Department (i.e. Department of Planning and Infrastructure, or delegate)
DoP	Department of Planning (now Department of Planning and Infrastructure)
DP&I	Department of Planning and Infrastructure
EA	Environmental Assessment – *"Mt Arthur Coal Consolidation Project Environmental Assessment"* (6 volumes) dated November 2009
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPL	Environmental Protection Licence
HRSTS	Hunter River Salinity Trading Scheme
MCoA	Minister's Condition of Approval
Mine water	Water that accumulates within active mining areas and mine drainage
Mining operations	Includes all coal extraction, processing, handling, storage and transportation activities
Minister	Minister for Planning, or delegate
Mitigation	Activities associated with reducing the impacts of the project
MSC	Muswellbrook Shire Council
Mt Arthur Mine Complex	The combined mine operations of the project (including Mt Arthur North mine, Bayswater No.2 mine, Bayswater No.3 mine, and the South Pit Extension Project) and the Mt Arthur Underground Project.
NOW	New South Wales Office of Water
Project	Mt Arthur Coal Mine Open Cut Consolidation Project
POEO Act	*Protection of the Environment Operations Act 1997*
Project Approval	Project Approval 09_0062 Mt Arthur Coal Mine - Open Cut Consolidation Project
Proponent	Hunter Valley Energy Coal Pty Ltd

Executive Summary

The Independent Environmental Audit of the Mt Arthur Coal Mine - Open Cut Consolidation Project operations and activities was conducted by Trevor Brown & Associates during December 2011 and January 2012, to satisfy the requirements of Project Approval 09_0062, Schedule 5 condition 9.

It should be noted that the Mt Arthur Underground development had not commenced at the time of the audit, therefore statements of compliance are related only to the conditions and commitments of Project Approval 09_0062.

The Management Plans required by the Project Approval were prepared by Mt Arthur Coal and submitted to DP&I in accordance with the timing required by the specific conditions and the requirements of Project Approval Schedule 5 condition 2.

Mt Arthur Coal received approval from DP&I for the Air Quality Management Plan, Air Quality Monitoring Program, Noise Management Plan, Noise Monitoring Program, and Road Closure Management Plan on 6 June 2012; Aboriginal Heritage Management Plan, Site Water Balance, Erosion and Sediment Control Plan, Surface Water Monitoring Program, Groundwater Monitoring Program, and Surface Water and Groundwater Response Plan on 20 August 2012; Site Water Management Plan on 23 August 2012, European Heritage Management Plan and Environmental Management Strategy on 18 September 2012.

The Independent Environmental Audit of the Mt Arthur Coal Consolidated Project operations has demonstrated a high degree of compliance with the Project Approval 09_0062 conditions and Statement of Commitments and Environmental Assessment commitments, Environment Protection Licence No. 11457 and the Mining Lease conditions of approval:

Environmental Management Strategy

The Mt Arthur Coal Environmental Management System and Environmental Management Strategy (required under Project Approval Schedule 5 condition 1), provides a sound basis for the management of environmental aspects of the Mt Arthur Coal Consolidated Project.

Air Quality

The independent audit of air quality aspects for the Mt Arthur Coal operations and environmental management related to air quality were progressing as predicted, and review of the monitoring results from September 2010 to January 2012 demonstrated compliance with the Project Approval Schedule 3 condition 21 criteria and the air dispersion modelling reported in the Mt Arthur Coal Mine Open Cut Consolidation Project Environmental Assessment 2009.

Blasting

The implementation of controls proposed in the Blast Management Plan and undertaking a Pre-Blast Environmental Assessment are considered to be consistent with best practice blast management procedures. Blast monitoring demonstrated compliance of the Mt Arthur Coal operations with the overpressure and ground vibration criteria in Project Approval Schedule 3 condition 10 and EPL 11457 condition L6.2 and L6.3, on all but two occasions between 2011 to June 2012.

Noise Management

The independent audit of noise conditions, found that Mt Arthur Coal is generally in compliance with the requirements of Project Approval Schedule 3 conditions 3.1 to 3.9 and associated documents.

Site Water Management

The Water Management Plan for the Mt Arthur Coal operations satisfies the Project Approval Schedule 3 condition 29 and includes supplementary plans for Site Water Balance, Erosion and

Sediment Control, Surface Water Monitoring Program, Groundwater Monitoring Program and a Surface and Ground Water Response Plan. The Water Management Plan outlines water management system to effectively source, divert, store, use, monitor and reticulate water on site.

Erosion and Sediment Control

It is recommended that reference to other relevant management plans/sections be inserted into the Erosion and Sediment Control Plan to demonstrate consistency with the components of *Managing Urban Stormwater: Soils and Construction, Volume2E Mines and Quarries* Appendix C.

Surface Water Monitoring

The surface water monitoring results from each Mt Arthur Coal sampling point, exhibit relatively consistent water quality trends over time for each location. The water quality over time does not indicate adverse impacts from mining on surface water quality around the mine site.

Groundwater

The groundwater monitoring results, although exhibiting variability between piezometer locations have not indicated adverse groundwater quality trends caused by the Mt Arthur Coal mining activities.

Rehabilitation

Overall the Mt Arthur Coal Complex rehabilitation activities are being addressed progressively and a number of suggestions are provided for consideration by Mt Arthur Coal for improvement of outcomes on the finished areas of overburden emplacement where contouring and topsoil application is occurring.

Achievement of the rehabilitation objectives provided in the Rehabilitation Strategy require measureable closure criteria and Mt Arthur Coal has yet to develop measureable criteria and/or undertake an assessment of rehabilitation performance against measureable closure criteria. The Rehabilitation Management Plan that is due to be submitted to DP&I by 31 March 2012 will include the process to meet the objectives of the Rehabilitation Strategy. A number of recommendations are provided for consideration in relation to potentially improving rehabilitation outcomes on the Mt Arthur Coal site.

Heritage

The management of Aboriginal cultural affairs and cultural heritage items by Mt Arthur Coal has occurred in accordance with the Project Approval conditions, Statement of Commitments and Environmental Assessment commitments. The Aboriginal Heritage Management Plan and the Macleans Hill Cultural Heritage Management Plan provide a sound basis for the protection of Aboriginal cultural heritage within the Mt Arthur Coal Consolidation Project boundaries.

Management of European heritage items have been conducted by Mt Arthur Coal in accordance with the Project Approval conditions and commitments. The comprehensive European Heritage Management Plan provides sound management principles for the protection of the European heritage items in the vicinity of Mt Arthur Coal operations.

1.0 Introduction

1.1 Background

The Project Approval 09_0062 for the Mt Arthur Coal Consolidation Project (the Project) was granted on 24 September 2010. The Project Approval requires an Independent Environmental Audit to be conducted by the end of December 2011. To satisfy Project Approval (09_0062) Schedule 5 condition 9, this Independent Environmental Audit was commissioned by BHP Billiton Mt Arthur Coal and conducted by Trevor Brown &Associates during December 2011 and January 2012:

> ***INDEPENDENT ENVIRONMENTAL AUDIT***
> *9. By the end of December 2011, and every 3 years thereafter, unless the Director-General 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 Director-General;*
> *(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 relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals);*
> *(d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and*
> *(e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under the abovementioned approvals.*

The Independent Environmental Audit site inspections and documentation assessment for compliance with the Project Approval and other environmental approvals for the Mt Arthur Coal Mine – Open Cut Consolidation Project, were carried out by a team of suitable qualified and experienced and independent experts endorsed by the Director-General on 21 November 2011.

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. The scope of work for the independent environmental audit of the Mt Arthur Coal Mine Consolidated Project included the following components:

- review of compliance with Project Approval 09_0062 conditions and other approvals for the period 24 September 2010 and 31 December 2011;
- conduct site inspections by the qualified, experienced and independent experts and review on-site documentation and monitoring data for the Project, relevant to the audit;
- discussion of the Project Approval and other conditions for the Project with Mt Arthur Coal staff;
- assessment of environmental performance of Mt Arthur Coal 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 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.

It should be noted that the Mt Arthur Underground Project (Project Approval 06_0091) had not commenced at the time of the audit and was not therefore included in the audit scope of works. Statements of compliance reported in this audit report are only related to the conditions and commitments of Project Approval 09_0062.

1.3 Structure of Report

This Independent Environmental Audit Report has been prepared to provide an assessment of the environmental performance of the project and assess whether the Project is complying with the conditional requirements of the Project Approval, EPL and Mining Leases. Tabulated comments on each condition of approval are included within the Attachments to this Independent Environmental Audit Report.

The Independent Audit Report sections are:

Glossary

Executive Summary

Section 1	Introduction – Background and Scope of Work for the Independent Environmental Audit
Section 2	Mt Arthur Coal Background – Summary of Mt Arthur Coal Complex historical development
Section 3	Project Approvals – Current Project Approval, Environment Protection Licence and Mining Leases
Section 4	Mt Arthur Coal Status – short description of Mt Arthur Coal Mine Complex development as at December 2011
Section 5	Review of Environmental Management – assessment of the environmental performance of the project and status of the requirements of Project Approval, Environment Protection Licence and Mining Leases for the period of September 2010 to December 2011
Section 6	Conclusions and Recommendations

Attachment A	Project Approval 09_0062 Table of Conditions and Compliance
Attachment B1	Statement of Commitments Mt Arthur Coal Mine – Open Cut Consolidation Project Table of Conditions and Compliance
Attachment B2	Environmental Assessment Commitments Mt Arthur Coal Mine Consolidation Project Table of Conditions and Compliance
Attachment C	Environment Protection Licence No.11457 Table of Conditions and Compliance
Attachment D	Mining Leases - Table of Conditions and Compliance

1.4 Compliance Tables

This audit assessed the activities for compliance with the intent of the conditions via site inspections and verification of relevant documentation related to the conditions as provided by Mt Arthur Coal. The status of compliance of the conditions expressed in the Attachment Tables for the Project Approval, Statement of Commitments, Environmental Assessment Commitments, EPL and Mining Leases is described in Table 1.

Table 1: Expression of Compliance with Conditions of Approval

	Status	Description
C	Compliant	Adequacy and appropriateness of operational performance and/or implementation against the current Project Approval and other licence conditions, or conformance/compliance with commitments.
NC	Non-compliant	An inadequacy in the design/operations and/or implementation against the current Project Approval, licence condition or management commitments.
Noted	Noted	Conditions that are statements of requirement but not auditable.
NA	Not applicable	Not applicable to the current operations
Not activated	Not activated	The requirement(s) of the condition are not or have not been required to be actioned at the date of the audit
Ongoing	Ongoing	The requirement(s) of the condition have been implemented and/ or complied with and the requirements are still active for the ongoing operation of the project.

2. Mt Arthur Coal Mine - Background

Mt Arthur Coal is located southwest of Muswellbrook in the Upper Hunter Valley NSW, within the proclaimed Muswellbrook Mine Subsidence District and the Muswellbrook Local Government Area. Most of the land disturbed for the Mt Arthur Coal Complex operations was pastoral grassland that had been cleared of trees by previous landowners.

Coal Operations Australia Limited (COAL) was granted Development Consent for Mt Arthur North (DA 144-05-2000) on 1 May 2001 to develop the Mt Arthur North coal mine. COAL and the Mt Arthur North coal mine, are now owned by BHP Billiton. Hunter Valley Energy Coal Pty Ltd, (a wholly-owned subsidiary of BHP Billiton), operates Mt Arthur Coal under the Mt Arthur Coal Mine Open Cut Consolidation Project Approval.

Table 2: Summary of Mt Arthur Coal Complex Development

Date/Year	Application / Approval	Status
November 1993	**Bayswater No.3 Mine DA 210/93-** Environmental Impact Statement November 1993, as amended by submissions to the Commission of Inquiry.	Operational
12 September 1994	**Bayswater No. 3 DA 210/93** - Approval to extract coal granted to Caltex Oil (Australia) P/L, AMP Bayswater Coal P/L & Nippon Oil (Australia) P/L	Operational
April 1997	**Bayswater Coal Preparation Plant DA24/97 -** Environmental Impact Statement April 1997, Umwelt (Australia) Pty Ltd	Surrendered
September 1999	**Bayswater No.3 Mine DA 210/93 -** Modification to Consent with Statement of Environmental Effects, September 1999.	Operational
March 2000	**Bayswater Rail Loading Facility and Rail Loop DA 105-04-00 -** Environmental Impact Statement , Umwelt (Australia) Pty Ltd.	Surrendered
2 November 2000	**Bayswater Rail Loading Facility and Rail Loop DA144-005-2000** - Approval for construction and operation of the rail loop and rail spur line that connects to the main northern railway line, and provided for export coal to be transported directly to the Port of Newcastle granted to Coal Operations Australia Limited.	Surrendered
April 2000	**Mt Arthur North Mine DA144-05-2000 -** Environmental Impact Statement titled *The Mt Arthur North Coal Project*, April 2000 amended by the submissions to the Commission of Inquiry.	Surrendered
1 March 2001	**Bayswater No.3 Mine DA 210/93 -** Modification to Consent application and accompanying Statement of Environmental Effects, 1 March 2001.	Operational
1 May 2001	**Mt Arthur North Mine** open cut operation was approved to permit the annual extraction of up to 15 million tonnes of Run-of-Mine (ROM) coal and the construction and use of associated infrastructure and facilities. (Coal Operations Australia Limited).	Surrendered
26 November 2002	**Mt Arthur North Mine -** modification titled *Mount Arthur North Industrial Area Facilities – General Arrangement*, 26 November 2002.	Surrendered
20 September 2006	**Exploration Adit DA06_0040 -** Approval granted for construction and operation of an exploration adit and associated surface infrastructure for the purpose of extracting a bulk sample comprising 450,000 tonnes of run-of-mine coal over 2 years.	Expired
July 2007	**South Pit Extension PA 06_0108-** Environmental Assessment titled *Proposed South Pit Extension Project*, July 2007	Surrendered
9 January 2008	**Mt Arthur North Coal Mine South Pit Extension** - **PA06_0108 -** for the extension granted to Hunter Valley Energy Coal Pty Ltd	Surrendered
2 December 2008	**Mt Arthur Underground Project DA06_0091** - Approval for infrastructure upgrades granted to Hunter Valley Energy Coal P/L. (Not yet commenced).	Not commenced
24 September 2010	**Mt Arthur Consolidation Project PA09_062 –** approval from the DoP for the Mt Arthur Coal Consolidation Project.	Operational

To streamline the regulatory framework and ensure a consistent approach to environmental management across all the approved mine areas, Mt Arthur Coal was granted Project Approval 09_0062 on 24 September 2010 under section 75J of the *Environmental Planning and Assessment Act 1979* for the consolidation of all the open cut and surface facilities into a single approval for the Mt Arthur Mine Complex (*that includes the former Mt Arthur North Mine, Bayswater No.2 Mine, Bayswater No.3 Mine and the South Pit Extension Project*)[1]. Mt Arthur Coal Complex operational areas are shown in Figure 1.

Figure 1: Mt Arthur Coal Complex Operational Areas

[1] Project Approval Application No. 09_0062 - Definitions

3. Project Approvals

The current planning and environmental approvals, licenses and leases that apply to the Project include Project Approval 09_0062, Environment Protection Licence No. 11457 and Mining Leases granted in relation to the project described in the Environmental Assessment 'Mt Arthur Coal Consolidation Project Environmental Assessment' dated November 2009.

3.1 Project Approval

The Mt Arthur Coal – Open Cut Consolidation Project was granted Project Approval 09_0062 from the Minister for Planning on the 24 September 2010. The Project Approval consolidated the previous development consents/approvals and required surrender of the previous consents/approvals under Project Approval Schedule 2 condition 8. This consolidation of consents/approvals streamlined the regulatory framework and provides a consistent approach to environmental management for the Mt Arthur Coal project.

The Project Approval permits the extraction of up to 36 million tonnes of ROM coal per annum from the combined complex that includes the following approved operational areas:

- Mt Arthur North mining area
- Bayswater No. 2 and Bayswater No. 3 mining areas
- Bayswater Rail Loop and Loading Facility
- Mt Arthur North South Pit Extension
- Exploration Adit (the exploration adit was completed in 2009 and no subsequent underground mining occurred during 2010 and 2011).
- Mt Arthur Underground Project

The postponement of surrender of the Bayswater No. 3 consent has been granted by the DP&I until a final determination on the Mt Arthur Consolidation Project has been made by the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities under the *Environmental Protection and Biodiversity Conservation Act 1996.*

The Mt Arthur Coal Consolidation Project enabled the continuation of all aspects of the various Mt Arthur Coal activities as approved under previous development consents and provides for:

- consolidation of the Mt Arthur Coal open cut and rail loading facility planning approvals into one project approval;
- extension of the mine footprint to uncover additional coal reserves within the current mining leases;
- approved production levels for the complex of up to 36 million tonnes of run-of-mine (ROM) coal;
- upgrading the existing Mt Arthur Coal CHPP to process up to 36 million tonnes of ROM coal per annum and allow the inclusion of an ultra-fines plant to re-process fines that will facilitate increased resource recovery and reduce water demand;
- approved annual rail haulage capacity for product coal of 27 million tonnes with the construction of a second rail loading facility and associated conveyor system;
- modifying existing infrastructure (such as workshops and bathhouse), constructing additional ROM coal hoppers and extending coal stockpiles

3.2 Environment Protection Licence

Environment Protection Licence (EPL) No. 11457 was issued for the Mt Arthur Coal project on 9 October 2001 under section 55 of the *Protection of the Environment Operations Act 1997*. This audit reviewed the most recent Variation of the EPL dated 8 August 2011.

3.3 Mining Leases

The Mining Leases, Coal Lease and Consolidated Coal Leases have specific conditions related to environmental management for the purposes of Section 374A(1) of the Mining Act 1992. The Mining Leases current for the Mt Arthur Coal Consolidation Project are shown in Table 3 and Figure 2.

(Authorisations 171 and 437 were also granted to Mt Arthur Coal Pty Ltd for exploration activities).

Table 3: Current Mining Leases for Mt Arthur Coal

Mining	Issue/Renewal Date	Expiry Date	Area	Environmental Management conditions
Coal Lease (CL 396)	28 March 2003	3 February 2024	29.5ha	2 to 8 and 17 to 30
Consolidated Coal Lease (CCL 744)	23 January 2008	21 January 2028	553.7ha	2 to 8, and 17 to 23
Mining Purposes Lease 263	17 October 2011	17 October 2032	122.3 ha	2 to 8 and 12 to 16
Mining Lease 1358	21 September 1994	21 September 2015	33.97km^2	14 to 35, and 43
Mining Lease 1487	13 June 2001	13 June 2022	3454ha	2, 3, 17 to 30 and 43
Mining Lease 1548	31 May 2004	31 May 2025	290.7ha	2, 3, 11, 13, 16, 21
Mining Lease 1593	30 April 2007	30 April 2028	393.8ha	2 to 4, & 11,13, 16 & 21
Mining Lease 1655	3 March 2011	3 March 2032	149ha	2 to 7 and 12 to 15

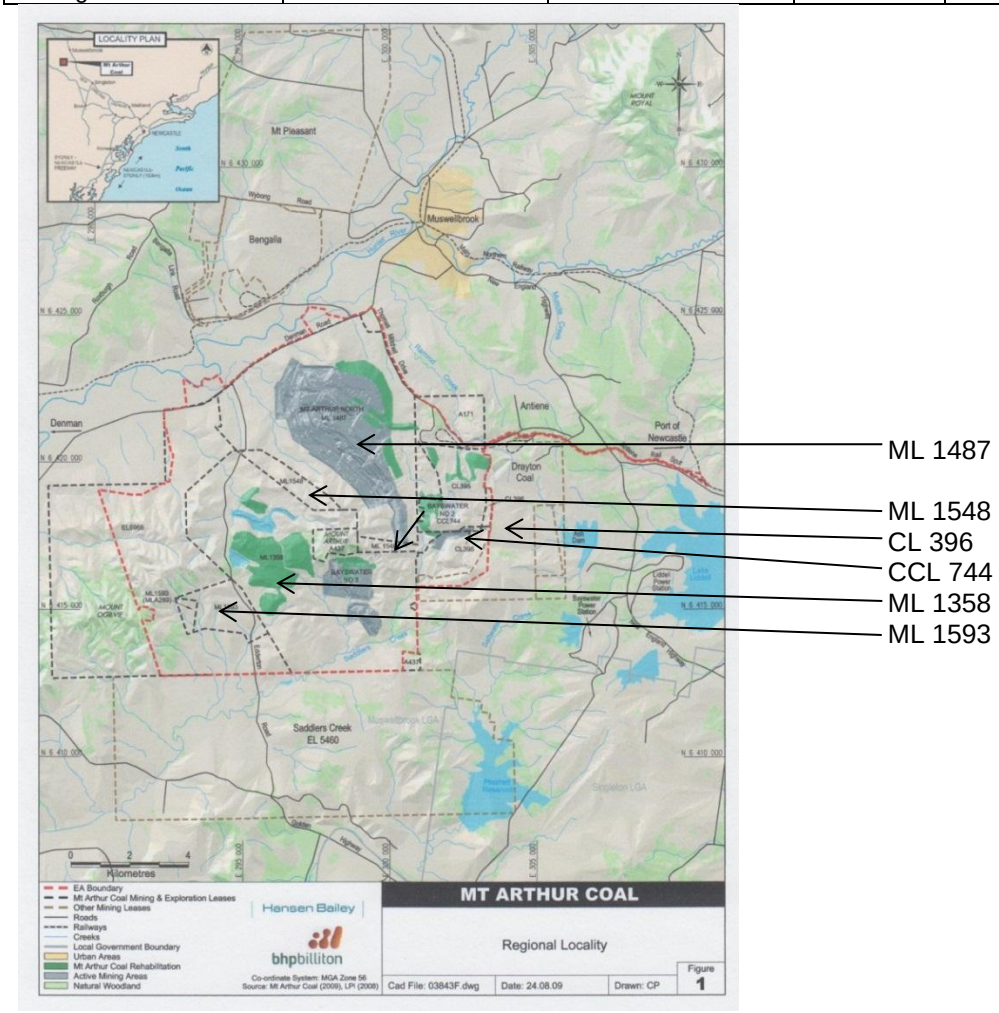


Figure 2: Mt Arthur Coal Complex Mining Leases

4. Mt Arthur Coal Status – December 2011

Open cut coal mining from the Mt Arthur Coal complex uses electric rope shovel and hydraulic excavators, supported by a fleet of haul trucks transporting the ROM coal to the coal handling and preparation plant (CHPP) for processing.

Initial disturbance of mining areas has involved pre-stripping of topsoil that is recovered and either placed directly onto reshaped areas or stockpiled. Topsoil stockpiles are recorded in the mine planning database for future re-use in rehabilitation.

The overburden exposed after topsoil stripping is blasted to fracture the rock to enable efficient removal of the overburden material. Excavators and shovels remove blasted overburden into haul trucks that transport to the emplacement areas.

After removal of the overburden, run-of-mine (ROM) coal (from the combined open cut operations of the Mt Arthur Coal Consolidated Project) is extracted from the Wittingham coal measure seams. The ROM coal is extracted from the Mt Arthur, Piercefield, Vaux, Broonie, Bayswater, Wynn, Bengalla, Warkworth, Edderton, Clanricard, Edinglassie transition, Ramrod Creek and Unnamed C seams at Mt Arthur North, and from the Glen Munro and Woodlands Hill seam at Bayswater No. 3. ROM coal is transported by truck along internal haul roads to the coal handling and preparation plant (CHPP). The ROM coal from the combined open cut operations in 2010 and 2011 was 15.098 Mtpa and 20.290 Mtpa respectively. The main Mt Arthur Coal open cut pit is shown in Plate 1.

He status of the mining operations in December 2011 are generally consistent with the conceptual Mine Plan for 2011 shown in the Environmental Assessment – Consolidation Project 2009.

Plate 1: Mt Arthur Coal Open Cut Pit

At the CHPP the ROM coal is crushed to size, washed and the processed coal stockpiled prior to transport from site by either conveyor to Bayswater Power Station or loaded onto trains for transport to the Port of Newcastle for export. The Mt Arthur Coal CHPP area is shown in Plate 2.

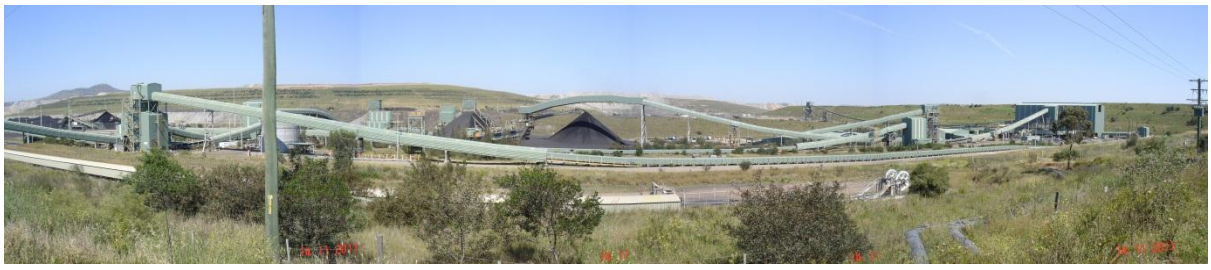


Plate 2: Mt Arthur Coal – Coal Handling and Preparation Plant Area

As overburden emplacement areas reach final design, the surface is reshaped / contoured, topsoiled, ripped and sown with a mix of grasses and native trees.

5. Review of Environmental Management

5.1 Environmental Management System

5.1.1 Environmental Management System

Mt Arthur Coal has an Environmental Management System (EMS) certified to ISO14001 that provides a framework to manage compliance with relevant legislation, statutory approvals, organisational objectives and community expectations.

The EMS provides a suite of procedures for key activities associated with the Mt Arthur Mine Complex that have the potential to result in environmental and/or social impacts. These procedures are continually reviewed, communicated to employees and audited for compliance.

To maintain certification to international standards, Mt Arthur Coal is subject to annual surveillance audits and three yearly re-certification audits.

Following the successful recertification audit in 2009, annual surveillance audits have been undertaken by Det Norske Veritas (DNV) to determine the degree of conformity and effectiveness of the system against the declared certification criteria. Overall the DNV audits have shown that implementation of the EMS is in compliance with the criteria, and certification has been retained. Mt Arthur Coal has implemented actions to address all non-conformances identified during the surveillance audits.

5.2 Environmental Management Strategy

5.2.1 Environmental Management Strategy

[Refer Project Approval Schedule 5 condition 1]

The Environmental Management Strategy prepared for the Mt Arthur Coal Consolidation Project addresses the requirements of Project Approval Schedule 5 condition 1 was approved by DP&I on 18 September 2012. The Environmental Management Strategy is strengthened by the certified EMS that has been implemented for the project. The Mt Arthur Coal operations are conducted in accordance with the certified EMS and approved Environmental Management Strategy and address the elements of ISO 14001 with:

- an overall framework for environmental management of the Mt Arthur Coal project activities;
- identification of key environmental aspects addressed in the EMS and supporting plans and procedures;
- framework for review of the EMS and plans for continual improvement; and
- process for reviewing the implementing of the EMS and corrective action If required.

5.2.2 Conclusion

The Environmental Management Strategy (and the certified ISO14001 Environmental Management System) provides a sound basis for the management of environmental aspects of the Mt Arthur project activities and operation.

5.3 Environmental Monitoring Programs

5.3.1 Monitoring Programs

Monitoring Programs have been prepared for the Mt Arthur Coal project as part of the environmental management plans:

- Noise Monitoring Program [Project Approval Schedule 3 condition 9(c)
- Blast Monitoring Program [Project Approval Schedule 3 condition 17(d)
- Air Quality Monitoring Program [Project Approval Schedule 3 condition 24(c)
- Surface Water Monitoring Program [Project Approval Schedule 3 condition 32
- Groundwater Monitoring Program [Project Approval Schedule 3 condition 33

These documents are supplementary to the Management Plans that provide the management strategies and overview of each monitoring program requirement.

5.3.2 Conclusion

The Monitoring Programs are supplementary documents to the Management Plans and provide clear processes and procedures for the various environmental aspects to be monitored to assess performance against the management strategies/plans and commitments for the project.

5.4 Air Quality[2]

[Refer to Project Approval Schedule 3 conditions 18 to 25, Schedule 4 and Schedule 5 condition 2]

5.4.1 Air Quality Management Plan

The Air Quality Management MAC-ENC-MTP-040 was prepared to satisfy Project Approval Schedule 3 condition 24(b) and submitted to the DP&I in March 2011. Mt Arthur Coal had not been advised that this Plan required changes or had been approved by D&PI at the date of this audit.

This Air Quality Management Plan incorporates all of the required elements of the Project Approval condition (except for detailed baseline data that was detailed in the EA) and a program to investigate and implement ways to improve environmental performance over time.

The plan addresses each requirement in the Project Approval. Each key aspect necessary for effective air quality and greenhouse gas management is addressed and the potential for emissions to arise is minimised by:

- planning and designing the mining activities to limit the potential to generate and/or release dust;
- proactive measures to improve operational decision making based on forecast and prevailing weather conditions; and,
- application of controls such as chemical agents, use of water carts to dampen road surfaces, revegetation of disturbed areas, and if necessary cessation of activities during extreme wind conditions.

Actions are assigned within the Air Quality Management Plan to mitigate the impacts of excessive dust events or exceedence of dust criteria. Effectiveness of any management measures is monitored and assessed against compliance criteria and reported in the Annual Review / AEMR and EPL Annual Return.

The Air Quality Management Plan includes procedures and mechanisms to ensure it is relevant and up to date though regular review and updates of the Plan as necessary, and training of Mt Arthur Coal staff.

The Air Quality Management Plan is also linked to complaints and reporting procedures to ensure transparent public reporting of the measured levels of dust and the extent of compliance with the applicable dust criteria.

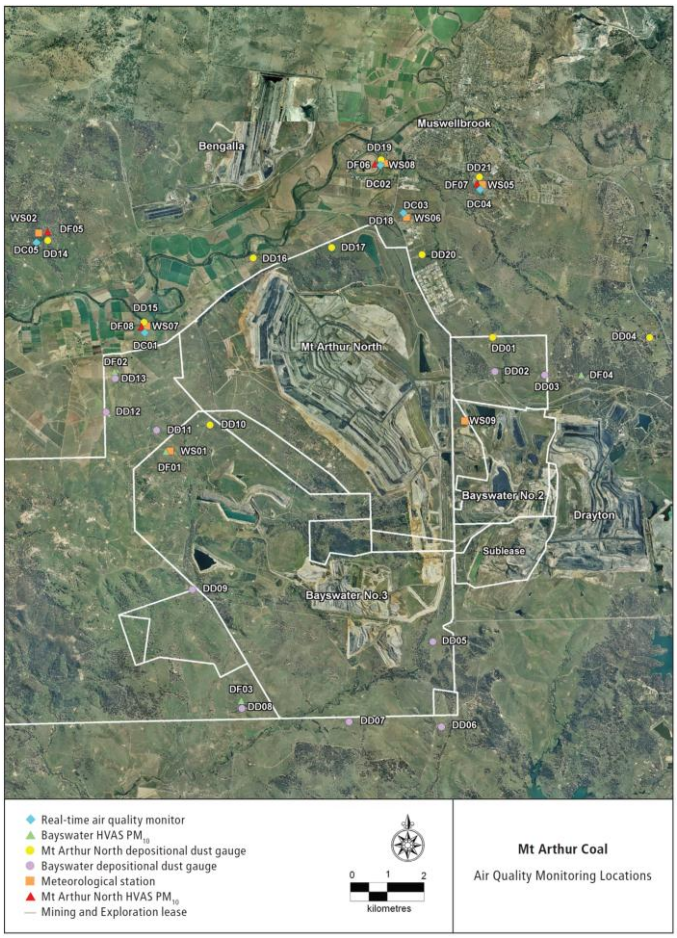
[2] Alex Todoroski – Todoroski Air Services

The Air Quality Management Plan should be revised to incorporate a program for investigating and implementing ways to improve performance over time (to address Project Approval Schedule 5 condition 2(f)).

5.4.2 Air Quality Monitoring Program

[Refer to Project Approval Schedule 3 condition 24(c)]

An Air Quality Monitoring Program MAC-ENC-PRO-057 was prepared as a supplement to the Air Quality Management Plan MAC-ENC-MTP-040 to satisfy Project Approval Schedule 3 condition 24(c) and was submitted to the DP&I in March 2011. The Air Quality Management Plan is linked to the Air Quality Monitoring Program.



The Mt Arthur Coal Complex air quality monitoring network consists of:

- Twenty-one dust deposition gauges (DD01 –DD21);
- Eight High Volume Air Samplers (HVAS) PM_{10} (DF01-DF08)
- Six Tapered Element Oscillating Mass balance (TEOM) monitors (DC01-DC06)
- One AS2923-1987 compliant weather station (Industrial Area); and,
- Four meteorological stations representative of conditions in surrounding privately owned areas with continuous monitoring of temperature, wind speed and direction, and daily rainfall (WS01,WS02 and WS05-WS09)

Figure 3: Air Quality Monitoring Locations

5.4.3 Greenhouse Gas and Energy Efficiency Management Plan

[Refer to Project Approval Schedule 3 condition 24]

A draft Greenhouse Gas and Energy Efficiency Management Plan for the Mt Arthur Coal Consolidated Project had also been developed and energy efficiency opportunities are pursued with reporting annually to the Commonwealth Government under the *Energy Efficiency Opportunity Assessment Act 2006* and the *National Greenhouse and Energy Reporting Act 2007.*

Key focus areas for greenhouse gas management on site include:

- establishing an NGER Method 3 assessment of fugitive seam gas emissions;

- improving blasting practices to minimise diesel use and emissions;
- generating and maintaining best practice management for synthetic and refrigeration gasses;
- exploring the increase of the percentage of biodiesel used across site.

Mt Arthur Coal's efforts to reduce greenhouse gas emissions are complemented by energy efficiency measures in compliance with the Energy Efficiency Opportunities program. Energy efficiency initiatives and opportunities are evaluated in the context of:

- their compatibility with the mine's production output needs;
- energy and carbon costing;
- capital cost; and,
- overall operating cost effectiveness including maintenance costs.

The greenhouse gas component of the Mt Arthur Coal Air Quality Management Plan sets out regular monthly reporting against performance targets. Whilst not specifically mentioned in the Air Quality Management Plan, the Greenhouse Gas and Energy Efficiency Management Plan references reporting on the quantity of greenhouse gas emissions per tonne of product coal.

It is suggested that the Air Quality Management Plan should refer to the Mt Arthur Coal Greenhouse Gas and Energy Efficiency Management Plan.

5.4.4 Air Quality Monitoring Results

5.4.4.1 Particulate matter < 10 µm (PM_{10})

The Mt Arthur Coal ambient PM_{10} monitoring network consists of eight High Volume Air Sampler (HVAS) units fitted with size selective inlets, and six real-time Tapered Element Oscillating Mass balance (TEOM) monitors. The monitors have been positioned around the mine lease to adequately monitor the dust levels from the operations at receptors in the surrounding areas.

Each recorded event with potential for exceeding the Project Approval criteria in Schedule 3 conditions 19 and 20, were examined with reference to the position of the monitor and the prevailing meteorological conditions on the day.

Examination of the monitoring data found that TEOM DC05 monitor recoded levels four times lower on average over the last 12 months when compared with the HVAS PM_{10} DF05 monitor alongside. As the DC05 data is low and there is nothing particularly unusual about the DF05 data, this suggests a fault or out of calibration operation with the instrument at DC05. The results reported for Roxburgh Road (DC05) were investigated by Mt Arthur Coal and it was discovered that the TEOM PM_{10} results being recorded in the Mt Arthur Coal EnviroSys database for the Roxburgh Road (DC05) monitor were $PM_{2.5}$ not PM_{10}. Subsequently the Roxburgh Road TEOM PM_{10} results were reported incorrectly to the Community Consultative Committee (CCC) from May 2011 to December 2011. The correct results for this period were provided to the CCC at the June 2012 meeting. No PM10 results during the May to December 2011 period were recorded above the statutory limit of 50 $\mu g/m^3$. The communication system between DC05 and the EnviroSys database has now been modified to record the correct PM_{10} result correcting this reporting issue.

During the 2010 to December 2011 period the PM_{10} results exhibited values below the short term 24-hour impact assessment criteria of 50$\mu g/m^3$ and also below the long-term annual impact assessment criteria of 30$\mu g/m^3$.

As part of the Mt Arthur Coal Mine Open Cut Consolidation Project Environmental Assessment 2009, air dispersion modelling was conducted for representative periods, including the 2011 calendar year for open cut operations at Mt Arthur Coal. The annual average HVAS and TEOM PM_{10} results compared with actual monitored data for 2011 indicate the results were all below the predicted cumulative annual average PM_{10} concentrations at all sites.

5.4.4.2 Total Suspended Particulate Matter - TSP

The Mt Arthur Coal ambient monitoring network does not include TSP monitors. Compliance with this condition is assessed using PM_{10} data, adjusted to reflect the likely TSP level. Based on extensive monitoring since the 1980's it has been established that typically PM_{10} dust levels are conservatively estimated to be 35-40% of the TSP dust levels. Therefore, TSP results can be inferred from the annual average PM_{10} results, multiplied by 2.4.

This approach is reasonable as the criterion for annual average PM_{10} (30 µg/m^3) is invariably more stringent than that for TSP (90 µg/m^3), provided that the annual average ratio of PM_{10} to TSP remains below 30%. As the ratio of PM_{10} to TSP in the ambient dust level is conservatively estimated to be 35-40% on an annual average basis, the PM_{10} monitoring results would exceed the PM_{10} criterion at a lower ambient dust level than required for TSP monitoring results to exceed the TSP criterion.

The Mt Arthur Coal Mine Open Cut Consolidation Project Environmental Assessment 2009 predicted that no private residences would be impacted by dust levels exceeding the TSP assessment criterion of 90µg/m^3. As no annual result above the criteria for PM_{10} was recorded, it follows that no annual result above the criterion of 90µg/m^3 for TSP would have occurred.

It is suggested that the following be considered regarding TSP compliance assessment:

- Conduct some limited monitoring for TSP to confirm the ratio used for the estimation of TSP; or
- Apply for a Modification to the Project Approval to remove the TSP criterion.

5.4.4.3 Deposited Dust

The annual average dust monitoring data demonstrates compliance with the annual average criterion level of 4 g/m^2/month at all locations monitored except DD16 (DD16 is located immediately north-northwest of the active mine area on Mt Arthur Coal owned land and is used for dust management control purposes by the mine. It is not a residential sensitive receptor location for compliance assessment).

The trend in the recorded deposited dust results over each month shows that the dust in the area is influenced by Mt Arthur Coal operations and that the influence is within the acceptable criteria. This is demonstrated by the shift in dust levels according to the prevailing wind.

Some anomalies are also apparent and these can be attributed to other dust sources local to the gauge:

- Dust monitoring data in the vicinity of DD01, DD02 and DD03 appear to show relatively more elevated readings than would be expected when wind blows towards the mine. These gauges are likely to be influenced by other upwind dust sources.
- Dust levels at DD11, DD12 and DD13 individually show results higher than gauges closer to the mine and in the surrounding areas on one or more months over the year. This indicates a local source of dust (not Mt Arthur Coal mine), occasionally affecting the results at each of these gauges.

As part of the Mt Arthur Coal Mine Open Cut Consolidation Project Environmental Assessment (2009) predicted for 2011 no exceedances of the maximum total deposited dust level or maximum increase in deposited dust levels would occur. Monitoring results for the 2010 to June 2012 period support the predicted results in the Environmental Assessment.

5.4.5 Summary and Conclusion

The Air Quality Management Plan and Air Quality Monitoring Program address each requirement in the Project Approval and are considered adequate for the management of dust on the Mt Arthur Coal mine site.

The Mt Arthur Coal management of air quality is consistent with the Project Approval Appendix 3 Statement of Commitments and other commitment made in the Environmental Assessment 2009.

The audit found that Mt Arthur Coal operations and environmental management related to air quality were progressing as required, and review of the monitoring results from September 2010 to December 2011 demonstrated compliance with the Project Approval Schedule 3 condition 21 criteria and the air dispersion modelling reported in the Mt Arthur Coal Mine Open Cut Consolidation Project Environmental Assessment 2009.

Table 4: Summary of Air Quality Compliance for Sep 2010 to Dec 2011

Parameter	Mt Artur Coal level (highest measured)	Criteria	Compliant
TSP	50.4 µg/m^3 (DF08) [A]	90 µg/m^3 annual	Yes
PM_{10}	21 µg/m^3 (DF08)	30 µg/m^3 annual	Yes
PM_{10}	105 µg/m^3 24-hr, 100th%ile	150 µg/m^3 24-hr, 99th%ile	Yes
PM_{10}	51.2 µg/m^3 24-hr, 98.6th%ile (DC02) [B]	50 µg/m^3 24-hr, 98.6th%ile	Yes
Deposited Dust	3.6 g/m^2/month annual (DD02)	4 g/m^2/month annual	Yes

[A] Inferred from PM_{10} result.

[B] The reported value is the total cumulative level, not the mine only increment to which the criterion applies. The mine only increment in PM10 will be < 50 µg/m^3.

Unequivocally demonstrating the level of compliance achieved in regard to incremental dust criteria (i.e. mine alone) can be inferred, based on the available information and the auditor is satisfied that there is no reasonable prospect of non-compliance in this regard.

Although the Air Quality Management Plan and Air Quality Monitoring Program address each requirement in the Project Approval the following administrative matters (that have no direct bearing on environmental impact) are provided as suggestions for Mt Arthur Coal consideration only. Acting on these suggestions is not critical, but may improve Mt Arthur Coal Air Quality Management Plan:

- The reporting period for annual average air quality results should be standardised to the calendar year where possible.
- It is recommended that any one, or a combination of the following be done regarding TSP compliance assessment:
  - Formalise the approach using inferred TSP results based on measured PM10 data with the Department of Planning and Industry (DP&I), in consultation with the Office of Environment and Heritage (OEH);
  - Conduct some limited monitoring for TSP; or
  - Vary the MCoA to remove the TSP criterion.
- The Mt Arthur Coal assessment approach for analysing 24-hour PM10 impacts could be improved by considering the temporal and spatial elements of the path that dust leaving the site may be subject to. This need only be done for extreme cases, which may warrant specialist assessment.
- It would appear reasonable to investigate a better bird spike, an alternative perch for the birds or re-location of the DD05 gauge to a nearby site.

- Either the Air Quality Management Plan or the Mt Arthur Coal greenhouse gas and energy efficiency plan should make specific provision for reporting total site greenhouse gas emissions per tonne of product coal.

- The Air Quality Management Plan should:
  - Refer to the Mt Arthur Coal greenhouse gas and energy efficiency plan.
  - Include a reference to, or insert, the detailed baseline data into the Air Quality Management Plan
  - Provide further detail on a specific procedure, or set of relevant performance metrics against which to assess the effectiveness of management actions
  - Incorporate a program for investigating and implementing ways to improve performance over time

No correspondence from authorities related to air quality was sighted during the audit.

5.5 Blasting

[Refer to Project Approval Schedule 3 conditions 10 to 17]

5.5.1 Blast Management Plan

[Refer to Project Approval Schedule 3 condition 17]

Blast Management Plan MAC-ENC-MTP-015 was prepared to satisfy Project Approval Schedule 3 condition 17. The Blast Management Plan was submitted to the DP&I in March 2011. Mt Arthur Coal had not been advised that this Plan required changes or had been approved by D&PI at the date of this audit. The Blast Management Plan addresses all of the requirements of Schedule 3 condition 13, best practice requirements, and *Mine Safety Management Plan* MAC-STE-MTP-008 and the *Developing Shot-firing Safe Work Procedures* MAC-PRD-PRO-001:

The Blast Management Plan:

- provides adequate direction for the operations in relation to achieving compliance with overpressure and vibration criteria;
- addresses the requirements of the current guidelines and codes of practice related to blasting operations (Blast Management Plan section 2.1 - Best Practice Control Measures);
- provides reference to the procedures for blasting and investigation of non-compliant blast/overpressure/vibration results (Blast Management Plan section 4.1 - Operational Response Process); and
- blast management at the Mt Arthur Coal mine site has complied with the regulatory criteria for overpressure and vibration and is therefore adequate for the Mt Arthur operations.

Blast management procedures implemented at Mt Arthur Coal to minimise air blast overpressure, ground vibration levels, fly-rock and control of fume and odour from blasting activities is achieved by:

- conducting a Pre-blast Environmental Assessment including wind speed, direction and shear and strength of temperature inversions prior to each blast. Meteorological conditions are compared with blasting guidelines before an approval to blast is issued. Blasts are only fired in suitable weather conditions that minimise the potential for blast generated dust and/or blast fume to be blown towards neighbouring residential areas;
- use of initiation systems that minimise overpressure pulses from surface detonating cord and detonators;
- adherence to blast loading and initiation designs where practicable;
- use of monitoring data to establish and refine predictive tools to estimate likely overpressure and vibration levels during the design process of subsequent blasts;
- minimising the potential for delayed firing of shots which have been loaded into wet holes within the constraints of prevailing weather conditions; and

- consultation with surrounding mines regarding scheduled blast times to avoid multiple blasts being fired at the same time.

5.5.2 Blast Monitoring Program

[Project Approval Schedule 3 condition 17(e)]

A Blast Monitoring Program MAC-ENC-PRO-055 was prepared in consultation with the DECCW to satisfy Schedule 3 condition 17(e) in March 2011 and submitted to DP&I in March 2011.

The Mt Arthur Coal blast monitoring system has five fixed blast monitors installed at sites representative of sensitive receivers (residents) and one blast monitor (BP08) installed on Mt Arthur Coal property at the Edinglassie Homestead heritage site to measure blast impacts. The blast monitors are calibrated and maintained in accordance with AS2187.2 - 2006. The locations of these monitors were determined in consultation with DECCW/OEH (see Table 5).

Table 5: Location of Blast Monitors for Overpressure and Ground Vibration

Site No	Location	Purpose
BP04	Highbrook Park, South Muswellbrook	To measure blast impacts north east of the operation
BP05	Antiene	To measure blast impacts east of the operation
BP06	'Yammanie', Corner Denman Road & Thomas Mitchell Drive	To measure blast impacts north-north east of the operation
BP07	Muswellbrook Racecourse, Sheppard Ave	To measure blast impacts north of the operation
BP08	Edinglassie	To measure blast impacts at the heritage site
BP09	Denman Road, West	To measure blast impacts west of the operation

Prior to each blast, a pre-blast environmental assessment (that includes a review of wind speed and direction, the strength of temperature inversions (if present) and the location and size of the blast) is conducted to consider the potential for impacts on the surrounding community or the environment.

The management of fume generation applied at Mt Arthur Coal blasts is robust, simple and easy to utilise. It represents reasonable and feasible measures to minimise the potential risk of impacts from blast fume, and reduces potential risk of blast fume impacts.

A minor potential risk of environmental impact relates to permissibility of blasts under calm conditions. Although this risk is low, the existing blast overpressure system should ensure that blasting is unlikely to occur under such conditions. The management of blast timing and design should ensure that blasting is unlikely to occur under unfavourable meteorological conditions to reduce the potential risk of blast fume impact. Predictive blast fume management systems that may assist mine operators to better schedule blast times to minimise potential impacts exist and a system is available that could be integrated with the blast overpressure system used by Mt Arthur Coal.

5.5.3 Blast Monitoring Results

A total of 127 blasts were fired at Mt Arthur Coal during 2011. The average overpressure recorded at monitoring sites for blasts in 2011 was 94 dB(L).The highest overpressure results recorded was a single result of 120 dB(L) on 7 July 2011 at location BP07.

The average ground vibration recorded at monitoring sites for blasts during 2011 was 0.32 millimetres per second.

Table 6: Mt Arthur Coal Blast Monitoring Results January to December 2011

Blast Monitoring Location	BP04	BP05	BP06	BP07	BP09
Overpressure dB(L) Average	92.5	90.4	94.9	97.7	94.6
Overpressure dB(L) Range	0-114.8	73.4 – 111.9	69 – 121.5	71.2 - 120	0 - 114.0
Ground Vibration mm/s Average	0.14	0.08	0.14	0.22	1.02
Ground Vibration mm/s Range	0.00 - 0.54	0.0 – 0.74	0.00 - 0.59	0.01 - 0.89	0.00 – 14.58
Blast Management Criteria					
5% Limit - Ground Vibration mm/s	5	5	5	5	5
Max Ground Vibration mm/s	10	10	10	10	10
5%Limit - Peak Overpressure dBL	115	115	115	115	115
Max Peak Overpressure dBL	120	120	120	120	120

5.5.4 Summary / Conclusion

The Blast Management Plan and Blast Monitoring Program address all the requirements of Project Approval Schedule 3 conditions 10 to 17 and are adequate for management of blasting at the Mt Arthur Coal mine. The implementation of controls proposed in the Blast Management Plan and undertaking a Pre-Blast Environmental Assessment are considered to be consistent with best practice blast management procedures.

All blast monitoring results for 2010 and 2011 demonstrated compliance of the Mt Arthur operations with the overpressure and ground vibration criteria in Project Approval Schedule 3 condition 10, and EPL 11457 condition L6.2 and L6.3.

As blasting may be permissible under low wind speed conditions this carries risks for the operation in relation to potential for fume management. This practice may be further complicated as the reliability of wind direction data is diminished under low wind speed conditions. Predictive blast fume management systems that may assist the mine operators to better schedule blast times to minimise potential impacts exist and it is recommended that an available system be integrated with the blast overpressure management procedures used by Mt Arthur Coal.

No correspondence from authorities related to blasting, overpressure or vibration control was sighted during the audit.

5.6 Erosion and Sediment Control[3]

[Refer to Project Approval Schedule 3 condition 31]

5.6.1 Erosion and Sediment Control Plan

[Refer to Project Approval Schedule 3 condition 31]

The Erosion and Sediment Control Plan MAC-ENC-MTP-033 was prepared to satisfy Project Approval Schedule 3 condition 31 and submitted to DP&I on 31 March 2011. Mt Arthur Coal had not received a response from DP&I in relation to approval of the Erosion and Sediment Control Plan at the date of the audit.

Project Approval Schedule 3, condition 31 requires:

> *The Erosion and Sediment Control Plan must:*
> *(a) be consistent with the requirements of Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004 (Landcom);…….*

The practical application *of Managing Urban Stormwater: Soils and Construction, Volume 1, 4th edition, (Landcom, 2004)* pertaining to the preparation of Erosion and Sediment Control Plans

[3] Michael Frankcombe – Landloch Pty Ltd

(ESCP's) is limited for mining operations. Section 2.2(d) of Landcom (2004) refers to Volume 2 of the guidelines for specific industries. The requirements of *Volume 2E - Mines and Quarries*, Appendix C describes the recommended content for an ESCP (refer to Table 7).

The current Mt Arthur Coal Erosion and Sediment Control Plan has not been prepared as a stand-alone document in relation to all the requirements of the *Managing Urban Stormwater: Soils and Construction, Volume 2E - Mines and Quarries Appendix C.* As part of the suite of environmental management documents in the Environmental Management Strategy, the Erosion and Sediment Control Plan developed for the Mt Arthur Coal Consolidation Project is implemented in conjunction with the following Mt Arthur environmental management documents, to demonstrate consistency with *Volume 2E - Mines and Quarries Appendix C:*

- Environmental Assessment – Mt Arthur Coal Consolidation Project November 2009
- Mining Operations Plan
- Rehabilitation Strategy

Comment on the consistency of Erosion and Sediment Control Plan MAC-ENC-MTP-033 with the recommended document content in *Managing Urban Table Stormwater: Soils and Construction, Volume 2E - Mines and Quarries Appendix C* is presented in Table 7.

Table 7: Consistency of the Mt Arthur Coal Erosion and Sediment Control Plan with *Volume 2E - Mines and Quarries Appendix C*

Reference	Volume 2E Requirement	Mt Arthur ESCP Evidence/Comments
	Map(s) at a scale of 1:5000 to 1:4000 illustrating:	
	The locality of the mine	Provided in Figure 1 of the ESCP
	Existing site contours including catchment area boundaries.	Provided in Figures 2 to 6 of the ESCP
	Location of existing vegetation	Not provided in the ESCP. Vegetation communities are described in sections 3 and 4 of Appendix J Ecological Assessment of the Mt Arthur Coal Consolidation Project Environmental Assessment, November 2009.
	Identify location of critical natural areas requiring special planning or management.	Not discussed in the ESCP. Habitat management areas are described in sections 3 and 4 of Appendix J Ecological Assessment of the Mt Arthur Coal Consolidation Project Environmental Assessment, November 2009
	Stages of mining	Not discussed in the ESCP. The stages of mining are described in the Mt Arthur Coal Consolidation Project Environmental Assessment November 2009 and the Mining Operations Plan FY2012 to 2013.
	Nature and extent of earthworks, including cut and fill.	Not discussed in the ESCP. The earthworks and surface disturbance is detailed in the Mining Operations Plan.
	Location of all soil stockpiles.	Shown in the Mining Operations Plan.
	Location of proposed roads	Major haul roads shown in the ESCP.
	Existing and proposed drainage patterns.	Proposed drainage patterns provided. Also the Rehabilitation Strategy Figure 4 includes a proposed final drainage and landform plan.
	Location and types of proposed erosion control measures.	Detail of all erosion and control not shown in the ESCP. Sediment control structures are established as required. A register of new structures should be maintained as new structures are established.
	Location and type of proposed sediment control measures.	Very limited detail in the ESCP. See above.
	Site rehabilitation proposals including final contours.	Not shown in the ESCP. The Rehabilitation Strategy Figure 4 includes a proposed

Reference	Volume 2E Requirement	Mt Arthur ESCP Evidence/Comments
		final drainage and landform plan.
	Supporting information for the ESCP should include a brief description of:	
	Site characteristics (slopes, topography etc.)	Not described in the ESCP. The MOP 2012 to 2013 section 2.7 Topography and the Final Void Management Plan includes a section 10.2 Void Slope Stability.
	Major soil types present, including description and depth of each layer.	Not described in the ESCP. Extremely important given the presence of dispersive soils observed on site. Soils and land capability are described in the Land Management Plan section 3.2, and MOP section 2.5.
	Existing vegetation species.	Not described in the ESCP. Vegetation communities are described in Section 3.1 and Figure 3.1 of the Flora and Fauna Management Plan.
	Any vulnerable lands present.	Vulnerable lands are outlined in the Mining Operations Plan.
	Catchment areas above and within the site including drainage patterns.	The Site Water Management Plan section 3.1.2 and Figures 1 and 3 address catchment areas and drainage patterns.
	Integration of vegetation management with the proposed extraction plan.	Not discussed in the ESCP. The Flora and Fauna management Plan section 3.1 describes the existing Vegetation Communities and section 4 addresses Habitat Management Areas.
	Any areas within the site with serious erosion or sedimentation potential, together with details of special planning or management requirements proposed for their protection.	Not discussed in the ESCP. The ESCP should refer to steeply grading areas and areas with dispersive/ magnesic subsoil and topsoil.
	The construction sequence over the life of the development in the form of a chart or table outlining the sequence of works including erosion and sediment measures.	The construction sequence over the life of the development is described in the in the Mt Arthur Coal Consolidation Project Environmental Assessment and presented in each revision of the Mining Operations Plan.
	The erosion control strategy including the criteria used to select, locate and schedule control measures.	Strategy provided but criteria used to select, locate and schedule control measures not provided. Design standards for erosion control measures are inconsistent with *Managing Urban Stormwater: Soils and Construction, Volume 2E - Mines and Quarries* Table 6.1 and therefore the structures have the potential to be under designed.
	Measures to be used to control sediment on site including the criteria used to select, locate and schedule such measures.	The major sediment control measures are listed but criteria used to select, locate and schedule measures not provided in the ESCP. There is no discussion on the type of basins used/ proposed (Type C, D or F). See above.
	The extraction program	The Extraction Program is provided in the Environmental Assessment and Mining Operation Plans.
	Progressive rehabilitation	Progressive rehabilitation is addressed in the Rehabilitation Strategy section 4.
	The revegetation program including revegetation species.	The Rehabilitation Strategy includes description of revegetation and species in section 4.6 and 4.7.
	The maintenance strategy for all control measures including the nomination of responsibility for follow-up maintenance of any permanent control measures.	The Environmental Officer will be responsible for implementation of the Erosion and Sediment Control Plan including monitoring and reporting of water quality, performance of site drainage and sediment control structures, and coordinating any corrective action. There is no information provided on the chemical treatment of sediment basins/dams.

5.6.2 Summary/Conclusion

The adequacy of the Erosion and Sediment Control Plan in relation to best practice (i.e. Volume 2E Mines and Quarries Appendix C Managing Urban Stormwater) is commented on in Table 7. A number of points in Table 7 indicate that the Erosion and Sediment Control Plan could be improved with the inclusion of additional information or reference to the relevant documents where information not specifically provided in the Erosion and Sediment Control Plan can be sourced.

In general the site inspection conducted during the audit process considered that sediment control across the Mt Arthur Coal site was satisfactory. Erosion management particularly related to reactive soils needs to be continually monitored on the spoil emplacement areas, with remedial works conducted when erosion is identified. The Erosion and Sediment Control Plan provides adequate direction for sediment control on the disturbed areas of the mine site. Erosion on the overburden emplacement areas and areas disturbed for mining is an ongoing issue that needs to be managed in accordance with general procedures outlined in the Erosion and Sediment Control Plan.

It is recommended that reference to other relevant management plans/sections be inserted into the Erosion and Sediment Control Plan to demonstrate consistency with the components of *Managing Urban Stormwater: Soils and Construction, Volume2E Mines and Quarries* Appendix C.

5.7 Noise[4]

[Project Approval Schedule 3 condition 2 to 9, Schedule 4 condition 7 and 8, Schedule 5 condition 2]

5.7.1 Noise Management Plan

[Project Approval Schedule 3 condition 9]

The Noise Management Plan MAC-ENC-MTP-032 has been prepared and satisfies the requirements of Project Approval Schedule 3 condition 9. The Noise Management Plan was submitted to the DP&I in March 2011. Mt Arthur Coal had not been advised that this Plan required changes or had been approved by D&PI at the date of this audit.

5.7.2 Noise Monitoring Program

[Project Approval Schedule 3 condition 9(c)]

A Noise Monitoring Program MAC-ENC-PRO-056 prepared to satisfy the requirements of Project Approval Schedule 3 condition 9(c), is a supplement to the Noise Management Plan MAC-ENC-MTP-032. The Noise Monitoring Program describes operational noise monitoring and analysis, required to ensure compliance with procedures in the Noise Management Plan. This Noise Monitoring Program details the monitoring methodology, monitoring locations, monitoring frequency, data analysis and reporting.

5.7.3 Noise Monitoring Results

The Quarterly Attended Noise Monitoring Reports (prepared by Global Acoustics) concluded that the noise emissions from Mt Arthur Coal complied with the $LAeq_{(15\ minute)}$ and $LA1_{(1\ minute)}$ Project Approval night-time criteria at all monitoring locations during the Quarters 1, 2 and 4 2011 survey. Results during the Quarter 3 2011 survey indicated one exceedance of noise criteria in September 2011.

[4] Neil Pennington – Spectrum Acoustics

Table 8: Summary of Noise Exceedences

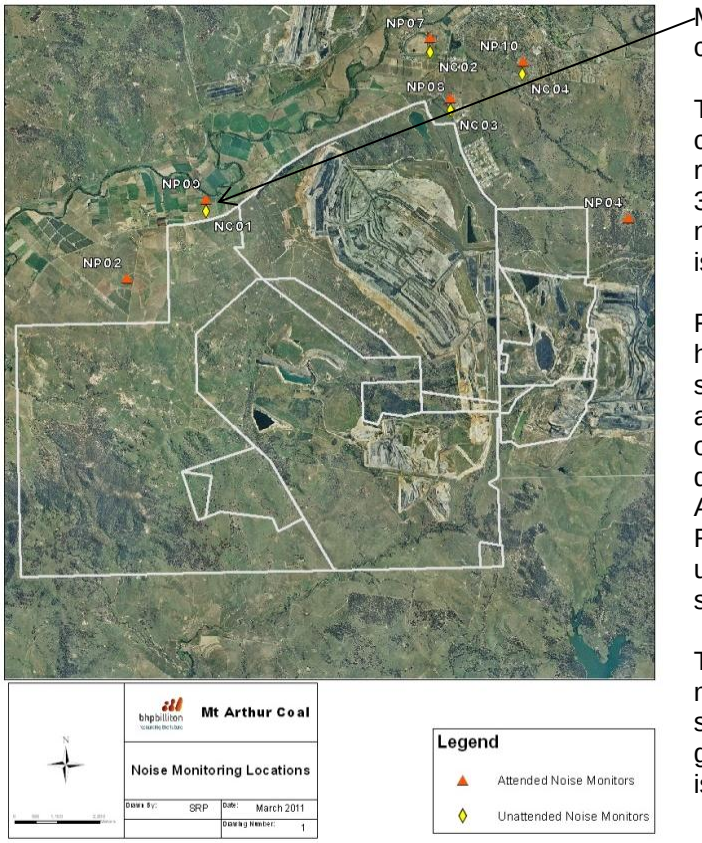
Location	Noise Measurement	Noise Criteria	Comment
September 2011			
NP9	36dBLAeq$_{(15\ minute)}$ *	Night time noise impact assessment criteria – 35dBLAeq$_{(15\ minute)}$	Dozer tracks, shovel tracks, transmission whine, alarms and shovel bucket noise were also audible throughout the measurement period. The Mt Arthur Coal continuum was primarily responsible for all measured levels.
NP9	46 dB LA1$_{(1\ minute)}$	Night time noise impact assessment criteria – 41 dB LA1$_{(1\ minute)}$	An engine/fan noise surge was responsible for the Mt Arthur Coal LA1$_{(1\ minute)}$ of 46 dB.
NP9	41 dB LAeq$_{(15\ minute)}$*	Land acquisition criteria – 40 dB LA1$_{(1\ minute)}$	Dozer tracks, shovel tracks, transmission whine, alarms and shovel bucket noise were audible throughout the measurement.

***(**The exceedances are not considered significant as Chapter 11 of the NSW 'Industrial Noise Policy' deems a development to be non-compliant only when "*the monitored noise level is more than 2 dB above the statutory noise limit specified in the consent or license condition*.")

The attended monitoring procedure/equipment described in the Quarterly Noise Monitoring Reports enables frequency analysis of the overall 15-minute measurements. The procedure adequately identifies the contribution from birds, insects and other high-frequency environmental sources.

The noise impact assessment conducted for the Mt Arthur Coal Mine Open Cut Consolidation Project Environmental Assessment (2009) predicted maximum noise levels under prevailing night conditions for potential receivers. The EA predictions for 2011 remain representative and support the predicted results in the Environmental Assessment.

Figure 4: NP9 Noise Monitoring Location



Monitoring location NP9 where noise criteria were exceeded during Q3 2011.

The current protocol to determine compliance with the noise criteria, as required under Project Approval Schedule 3 condition 3.9 (c), is acceptable but does not quantify noise emissions as reliably as is readily achievable by other methods.

Frequency analysis is not sufficient, however, to enable accurate separation of sources such as mine noise, traffic, wind and other low-mid frequency emitters with overlapping frequency spectra. The description in Section 5.1 of the Global Acoustics Quarterly Noise Monitoring Reports comments on the difficulty of using only spectral data to distinguish sources with common emission spectra.

Temporal analysis is the recommended method to achieve the best possible separation of these sources and some guidance on temporal analysis techniques is provided below.

(As a common example, passing vehicles will usually be intermittent in nature and can easily be identified by matching field notes (with times noted) with a time-trace of the measurement at, nominally, 1-second intervals. The individual passages (duration, noise levels) of all vehicles during the measurement period provide the necessary information to calculate the LAeq(15minute) noise contribution from traffic during the monitoring period. This temporal analysis procedure can be used to quantify noise contributions from other identifiable non-continuous noise sources (including individual dozer tracks, engine revs, etc associated with the mine as well as many other sources). After the non-continuous noise sources have been separated temporally and their contributions to the overall measured LAeq level calculated, there will usually be residual constant or diffuse noise sources such as wind in trees and mine hum that cannot be separated by frequency or temporal analysis. It is then acceptable to make a justified subjective assessment).

5.7.4 Summary / Conclusion

This independent environmental audit concluded the Noise Management Plan and Noise Monitoring Program are adequate for the management of noise from the mine operations to meet the noise predictions and criteria in the Environmental Assessment and Project Approval conditions.

The quarterly noise monitoring results have demonstrated that Mt Arthur Coal is generally in compliance with Schedule 3 conditions 2 to 9 of Project Approval 09_0062.

The noise impact assessment conducted for the Mt Arthur Coal Mine Open Cut Consolidation Project Environmental Assessment (2009) predicted maximum noise levels under prevailing night conditions for potential receivers. The predictions for 2011 to December 2011 remain representative and support the predicted results in the Environmental Assessment.

It is recommended that the assessment procedure and/or apparatus for attended noise measurements be revised / updated to incorporate temporal analysis so that noise contributions from individual sources (including all intermittent and continuous mine-related sources, regardless of frequency) may be more specifically quantified / identified.

5.8 Water Management

[Project Approval Schedule 3 condition 26 to 34]

5.8.1 Site Water Management Plan

[Project Approval Schedule 3 condition 29]

The Site Water Management Plan MAC-ENC-MTP-034 has been prepared to satisfy the Project Approval Schedule 3 condition 29 and was submitted to the DP&I in March 2011. (DP&I approved the Site Water Management Plan on 23 August 2012).

The Water Management Plan includes:

- Site Water Balance;
- Erosion and Sediment Control Plan;
- Surface Water Monitoring Program;
- Groundwater Monitoring Program; and
- Surface and Ground Water Response Plan.

The Site Water Management Plan outlines a system to effectively source, divert, store, use, monitor and reticulate water on the Mt Arthur Coal mine site. The key objectives of the Site Water Management Plan include:

- to divert clean runoff from undisturbed areas around areas disturbed by mining activities and allow to drain from the site;
- provide water storages of sufficient capacity for mine site usage and storage for dry and wet periods;
- recycling of on-site water;
- preferentially use site water collected either in-pit or in water storages prior to higher quality water (i.e. fresh water from the Hunter River);
- collect runoff from all active mining areas, overburden emplacement areas in catch drains and direct to sediment traps and settling dams to remove suspended particulate, prior to drainage from site or use within the mine water management system;
- provision of suitable flood protection and dewatering capability for mining operations and the open cut pit; and
- development of an integrated reticulation network to manage water transfers between water sources.

The Site Water Management Plan and associated Plans and Programs are considered adequate for assessment of the Mt Arthur Coal surface and groundwater quality.

5.8.2 Site Water Balance

[Refer Project Approval Schedule 3 condition 30]

The Site Water Balance MAC-ENC-PRO-059 prepared to satisfy Project Approval Schedule 3 condition 30, was developed as part of Site Water Management Plan MAC-ENC-MTP-034.

Water balance is regularly monitored at Mt Arthur Coal. A series of flow meters are monitored and volumes surveyed monthly to monitor the use and transfer of water between key water storages. The quantitative water model is used to predict the mine water balance in advance of the mining operations. Model predictions are then used to assist in operational planning and future water quantity requirements. (An upgrade of the probabilistic site water model was completed in 2011 to factor in proposed future changes to the site water management system).

An overview of key inputs and outputs of the water balance, tracked on a monthly basis, show that Mt Arthur Coal is generally a net generator of water. Total water usage sourced from the Hunter River has decreased since 2010 predominantly due to increased rainfall and localised catchment runoff in active pits and out of pit water storages.

Recycled water from the Muswellbrook Shire Council treated effluent reuse scheme is received and used by Mt Arthur Coal, with 709ML in 2010 and 884.9ML of recycled water received during 2011.

Saddlers Creek headwaters are in the south of the project area and flow generally to the southwest, joining the Hunter River downstream of the town of Denman.

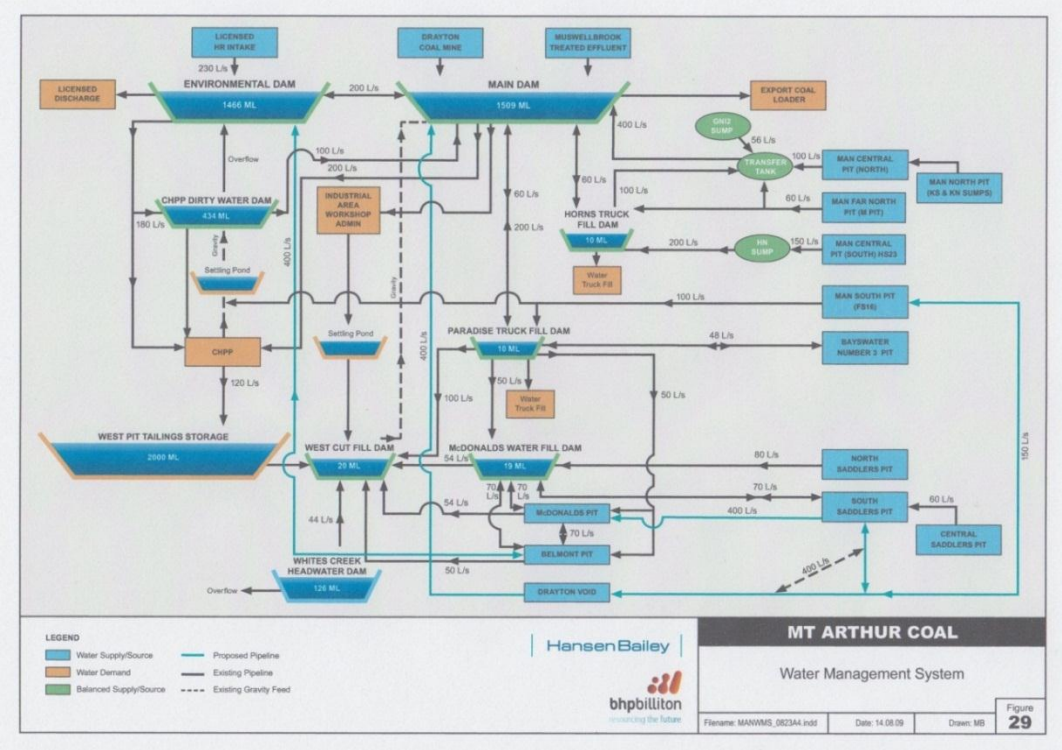


Figure 5: Mt Arthur Coal - Water Management System Schematic

5.8.3 Surface Water Monitoring Program

[Refer Project Approval Schedule 3 condition 32]

A Surface Water Monitoring Program MAC-ENC-PRO-061 was developed to satisfy Project Approval Schedule 3 condition 32 as part of Site Water Management Plan MAC-ENC-MTP-034 and submitted to DP&I in March 2011.

The Mt Arthur Consolidation Project area is located in the Hunter River catchment. Surface drainage generally comprises ephemeral creeks flowing northwards to the Hunter River. Northward flowing local watercourses include Quarry Creek, Fairford Creek, Whites Creek, and Ramrod Creek. All of these creeks drain directly into the Hunter River. The Whites Creek Diversion constructed through the Mt Arthur Coal infrastructure areas directs runoff from undisturbed and rehabilitated mine areas around the eastern and northern sides of the mine. This collected water is discharges to a small tributary downstream of Denman Road and then the Hunter River.
The Mt Arthur Coal surface water monitoring network consists of the monitoring surface water sampling sites in Table 9 and locations presented in Figure 6.

Table 9: Mt Arthur Coal Surface Water Monitoring Locations

Site No.	Location	Site Type	Frequency	Parameters
Statutory Monitoring Sites				
SW01	Saddlers Creek	Local Creek	Monthly or following rainfall >25mm – Water Quality	Flow Rate, Water Temperature, pH, EC, Total Dissolved Solids (TDS), Total Suspended Solids (TSS), Turbidity, Sulphate, Filtered Iron, Nitrate, Oil and Grease
SW02	Saddlers Creek	Local Creek		Flow Rate, Water Temperature, pH, EC, TDS, TSS, Turbidity, Sulphate, Filtered Iron, Nitrate, Oil and Grease Photographs for monitoring vegetation and erosion/deposition
SW03	Saddlers Creek	Local Creek		
SW04	Quarry Creek	Local Creek		
SW12	Ramrod Creek	Local Creek		
SW13	Fairford Creek	Local Creek		
SW15	Whites Creek	Local Creek		

Site No.	Location	Site Type	Frequency	Parameters
	Diversion			
SW18	Whites Creek Dam	Local Creek		Flow Rate, Water Temperature, pH, EC, TSS, TSS, Turbidity, Sulphate, Filtered Iron, Nitrate, Oil and Grease
SW28	HRSTS	Mine Water Storage	When Discharging	Flow Rate and EC
Internal use monitoring site. Monitoring to manage use of water source on mine site.				
SW05	Industrial Area Dirty Water Pond	Mine Water Storage	Monthly	Flow Rate, Water Temperature, pH, EC, TDS, TSS, Turbidity, Sulphate, Filtered Iron, Nitrate, Oil and Grease
SW07	Main Dam	Mine Water Storage	Monthly	Flow Rate, Water Temperature, pH, EC, TDS, TSS, Turbidity, Sulphate, Filtered Iron, Nitrate, Oil and Grease, Alkalinity, Hardness, BOD, Total Phosphorus, *E coli, Pseudomonas aeruginosa*
SW09	Ramrod Creek	Local Creek	Monthly	Flow Rate, Water Temperature, pH, EC, TDS, TSS, Turbidity, Sulphate, Filtered Iron, Nitrate, Oil and Grease
SW10	Ramrod Creek	Local Creek	Monthly	
SW14	Whites Creek Sediment Dam	Mine Water Storage	Monthly	
SW16	Environmental Dam	Mine Water Storage	Monthly	Flow Rate, Water Temperature, pH, EC, TDS, TSS, Turbidity, Sulphate, Filtered Iron, Nitrate, Oil and Grease, Alkalinity, Hardness, BOD, Total Phosphorus
SW17	CHPP Dirty Water Dam	Mine Water Storage	Monthly	Flow Rate, Water Temperature, pH, EC, TDS, TSS, Turbidity, Sulphate, Filtered Iron, Nitrate, Oil and Grease
SW23.	Export Dirty Water Dam	Mine Water Storage	Monthly	
SW24	McDonalds Fill Point Dam	Mine Water Storage	Monthly	pH, EC, TDS, TSS, Turbidity, Sulphate, Filtered Iron, Nitrate, Oil and Grease
SW30 - SW33	Sediment Dam	Sediment Dams	Quarterly	TSS

All sampling is conducted in accordance with Australian Standards with analysis undertaken by NATA accredited laboratories.

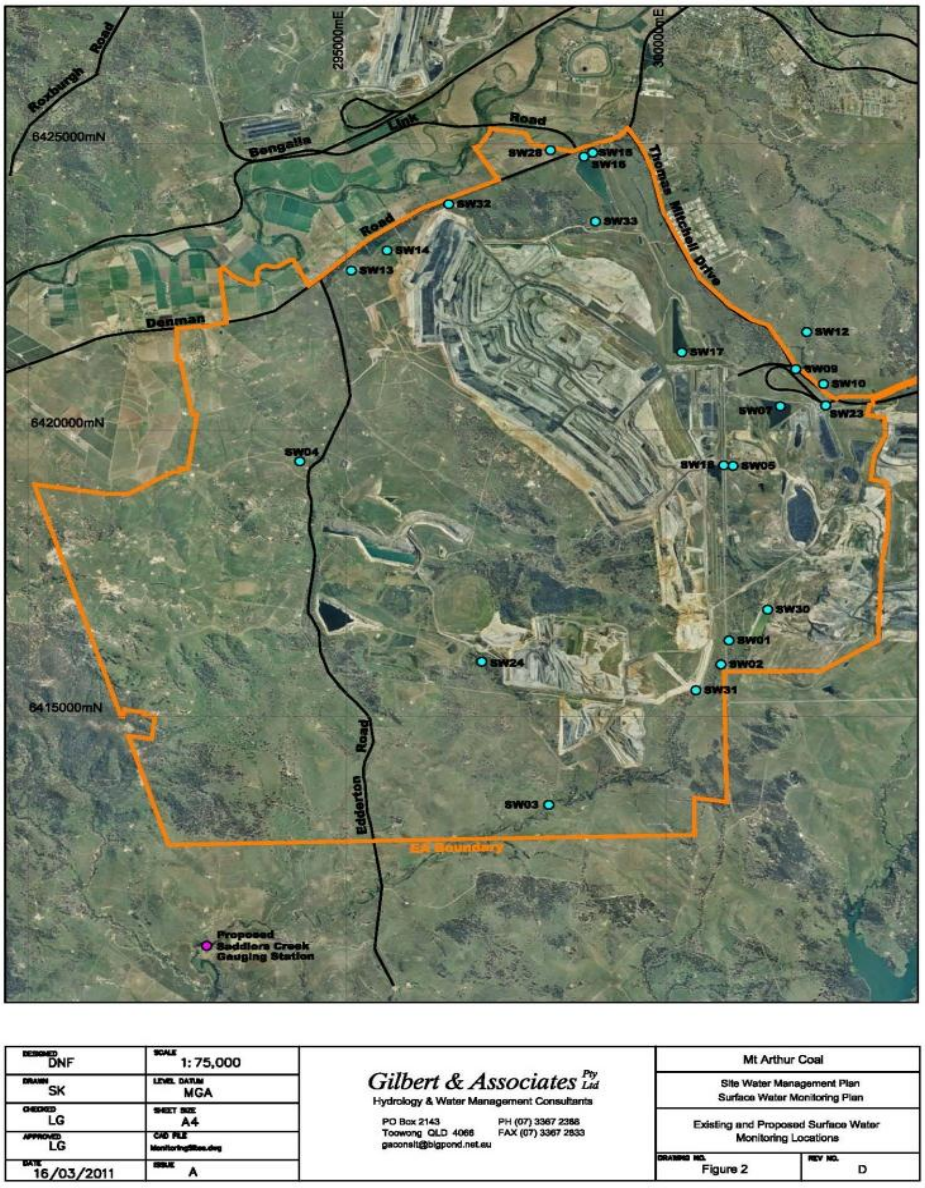
5.8.6 Surface Water Monitoring Results

Water quality in natural watercourses surrounding the mine including Saddlers Creek (SW01, SW02 and SW03), Quarry Creek (SW04), Ramrod Creek (SW12), Fairford Creek (SW13) and Whites Creek (SW15) are subject to variations in the levels of water quality parameters in response local geology, weather conditions, and the ephemeral nature of the creeks.

The pH measured at individual sites is relatively constant, ranging between 6.9 and 9.7. The higher pH values (i.e. greater than pH 9) are attributed to alkaline soils present in the Mt Arthur overburden and inter-burden materials.

Surface water electrical conductivity (EC) in the on-site water bodies ranges between 218µS/cm and 10,400µS/cm. The EC varies with rainfall and flow regimes. Analyses of the water in the main dam (SW07) and environmental dam (SW16) reflect the mixed non-mine and mine water sources that enter these storages, with both these dams exhibiting higher EC results.
Total suspended solid (TDS) results are generally consistent with trigger levels in the ANZECC *Guidelines for fresh and marine water quality*. All sampling is conducted in accordance with Australian Standards with analysis undertaken by NATA accredited laboratories.

Water quality in the creeks in the area exhibit variation in water quality in response to rainfall events and flow regime as determined by the ephemeral nature of the creeks.



DESIGNED DNF	SCALE 1: 75,000	Gilbert & Associates Pty Ltd Hydrology & Water Management Consultants PO Box 2143 Toowong QLD 4066 gaconsit@bigpond.net.au PH (07) 3367 2388 FAX (07) 3367 2833	Mt Arthur Coal Site Water Management Plan Surface Water Monitoring Plan Existing and Proposed Surface Water Monitoring Locations
DRAWN SK	LEVEL DATUM MGA		
CHECKED LG	SHEET SIZE A4		
APPROVED LG	CAD FILE MonitoringSites.dwg		
DATE 16/03/2011	ISSUE A		DRAWING NO. Figure 2 REV NO. D

Figure 6: Surface Water Monitoring Locations

5.8.8 Groundwater Monitoring Program

[Refer to Project Approval Schedule 3 condition 33]

Groundwater Monitoring Program MAC-ENC-PRO-062 was prepared to satisfy Project Approval Schedule 3 condition 33 and submitted to the DP&I in March 2011. Groundwater data collected from this monitoring program is used to determine the impact of Mt Arthur Coal Consolidation Project operations on the surrounding groundwater aquifers, and compliance of the mining operations with relevant statutory requirements outlined in the Site Water Management Plan MAC-ENC-MTP-034.

Two major aquifers dominate the area in proximity to the Mt Arthur Coal Complex:

- hard rock coal measures - permeability is associated with rock fractures that result in restricted groundwater flow. The sandstones and siltstones that host the coal measures can confine groundwater flow causing local artesian conditions however pressures are minimal;
- shallow alluvial deposits associated with the Hunter River – these alluvial deposits are highly conducive to groundwater flow due to the presence of silt, sand and gravel.

A network of groundwater monitoring bores, comprising both vertically paired and stand-alone bores, are used for environmental monitoring of water levels and groundwater quality. The Mt Arthur Coal groundwater monitoring network consists of 46 piezometers. The groundwater monitoring locations are shown in Figure 6.

Monitoring of water levels and water quality parameters is undertaken bi-monthly in the bores/piezometers for Water Depth, Water Temperature, pH, Electrical Conductivity, Total Dissolved Solids, Total Suspended Solids, and Iron in accordance with the Groundwater Monitoring Program. Chemical speciation is also undertaken in all bores twice yearly for Filtered Iron, Chloride, Calcium, Magnesium, Potassium, Sodium, Total Phosphorus, Aluminium, Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Molybdenum and Zinc.

The monitoring program provides data on groundwater levels and quality to be assessed for impacts on regional aquifers, the Hunter River and Saddlers Creek alluvial aquifers, and private users.

Groundwater monitoring results have generally indicated that both the pH and EC have not exceeded the trigger levels of pH <6 or >9.0, or EC >10,600µS/cm, on two successive occasions. The maximum recorded EC level was at site BCGW22 that has historically exhibited consistently high EC levels above 10,000µS/cm.

Groundwater results exhibiting exception to the trigger values have occurred in GW26 (an onsite piezometer located at the west cut tailings dam) showing a low pH of 4.9 and higher pH values exhibited by OD1079 (located within a rehabilitation area near Belmont South), OD1049 (located off-site on the western side of Edderton Road) and OD1046 (located south of Bayswater No. 3). These three sites have consistently recorded high pH levels historically.

Overall, the groundwater monitoring results although exhibiting significant variability between groundwater bores, have not indicated adverse groundwater quality trends that can be attributed to the Mt Arthur mining activities.

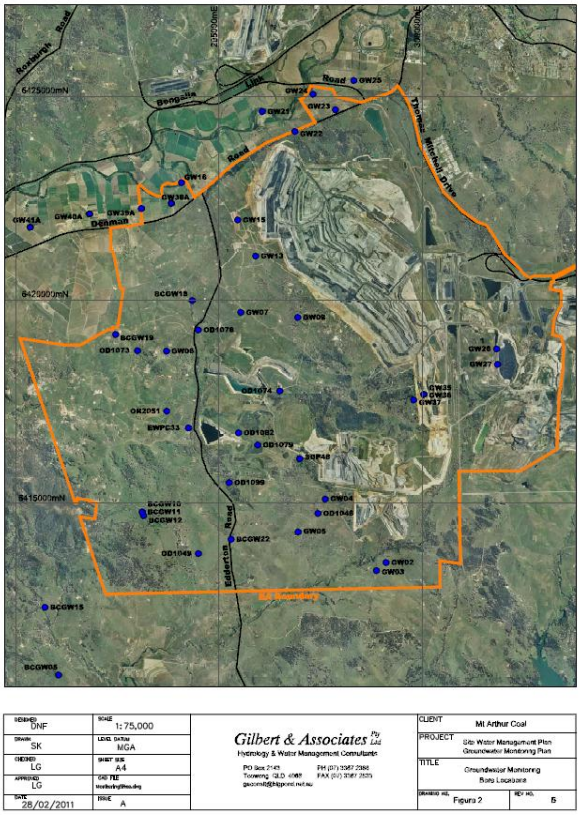


Figure 7: Groundwater Monitoring Locations

5.8.7 Surface and Groundwater Response Plan

[Project Approval Schedule 3 condition 35]

The Surface and Ground Water Response Plan MAC-ENC-PRO-063 was prepared to satisfy Project Approval Schedule 3 condition 35 and submitted to the DP&I in March 2011. The Surface and Ground Water Response Plan was prepared in consultation with the DP&I, NSW Office of Water (NOW) and the OEH requirements.

The Surface and Ground Water Response Plan outlines the relevant water quality impact assessment criteria, trigger values and exceedence protocol, and associated response procedures to be implemented for managing of both surface water and groundwater. Assessment criteria and trigger levels if exceeded, lead to a response in terms of more intensive monitoring, investigation and ultimately, if required, remedial action. The Surface and Ground Water Response Plan MAC-ENC-PRO-063 sections 3 to 8 contain protocols for response relating to each impact assessment criterion. Table 10 provides the impact assessment criteria for groundwater response.

Table 10: Groundwater Impact Assessment Trigger Criteria

Focus Area	Parameter	Trigger Value
Groundwater Level	Drawdown	The larger of: a) 10% greater than model prediction; or b) 1m drawdown greater than model prediction. If: (i) Three or more alluvial bores exceed the above in one round of monitoring; or (ii) Any alluvial bore exceeds the above for three consecutive readings; or (iii) Average drawdowns for the fractured rock bore network exceed the above for two consecutive readings
Groundwater Quality in Alluvium	pH EC	If a recorded value is greater than the 80th percentile of baseline data for 2 consecutive readings or, for pH, less than the 20th percentile of baseline data for 2 consecutive readings

Groundwater level impact assessment criteria ensure that measured depressurisation due to mining of the coal measures and associated impacts on the alluvial aquifer systems do not significantly vary from modelled predictions detailed in the Environmental Assessment. The groundwater monitoring has confirmed that the EA impact criteria had not been triggered by Mt Arthur Coal mine activities prior to the date of this audit (December 2011).

5.8.8 Summary / Conclusion

This independent environmental audit concluded the Site Water Management Plan and associated documents are adequate for the assessment of surface and groundwater quality and generally meet the predictions and criteria in the Environmental Assessment and Project Approval conditions and the statement of commitments in the Environmental Assessment and Project Approval.

The surface water monitoring program provides a set of comprehensive data on the various water bodies across the Mt Arthur Coal area of disturbance and monitoring results from each sampling point, exhibit relatively consistent water quality trends over time for each monitoring location. The surface water quality over time does not indicate adverse impacts from mining on surface water quality around the mine site.

The groundwater monitoring program addresses each of the commitments in the Environmental Assessment and provides a comprehensive data set for assessment of potential groundwater effects

resulting from the Mt Arthur Coal mining activities. Overall, the groundwater monitoring results although exhibiting significant variability between groundwater bores, have not indicated adverse groundwater quality trends that can be attributed to the Mt Arthur mining activities. The groundwater monitoring has confirmed that the Environmental Assessment impact criteria had not been triggered by Mt Arthur Coal mine activities prior to the date of this audit.

5.9 Rehabilitation[5]

[Refer to Project Approval Schedule 3 conditions 42 to 44]

5.9.1 Rehabilitation Strategy

[Project Approval Schedule 3 condition 42]

A Rehabilitation Strategy was prepared by the endorsed Rehabilitation Strategy Team (Neil Nelson – Agvice, Mark Burns – GSS, Nicholas Bugosh - GeoFluv, Rod Eckels – Landforma and Dee Murdoch - AECOM), to satisfy Project Approval Schedule 3 condition 42 and the Strategy was submitted to the DP&I on 30 March 2011 and approved on 21 September 2011.

The Rehabilitation Strategy discusses post mine land-use but does not investigate options for future use of disturbed areas. The key statements in the Rehabilitation Strategy pertaining to post mining land use are:

- Section 3.2, p 12, paragraph 2 - *'As proposed in the Environmental Assessment (Section 8.15.3) the final land uses of the rehabilitated site will include pastoral, recreation and/or wildlife habitat opportunities with due consideration to visual amenity aligned to the surrounding landscapes'*.
- Section 3.3, p12, paragraph 1 - *'Post mining the final voids will be utilised for water storage, with their locations and respective catchment boundaries within the conceptual final landform shown in Figure 3. Alternate uses for the voids may be considered as part of the Final Void Management Plan'*.
- Section 3.4 p 12, paragraph 1 - '*All surface infrastructures at the Mt Arthur Coal Complex where a post mining use cannot be identified will be removed from site (Section 8 of the EA). Consequently, resulting disturbed areas will generally be revegetated using the techniques discussed in Section 4.5.*'
- Section 3.5 p13, paragraph 5 - '*In terms of future use, these areas will be protected from incompatible land use activities such as overgrazing which may damage their integrity.'*

Rehabilitation is broadly described in the Rehabilitation Strategy section 3. The justification for the adopted strategy is based on previous land-use and regulatory requirements for increased biodiversity land-uses, and does not consider site constraints - primarily the limitations to agricultural production and erosion risk posed by magnesic and dispersive sodic topsoil and subsoil identified in the GSSE assessment of soils and land capability the Mt Arthur Coal Complex site. It is understood that constraints will be examined in detail in the Rehabilitation Management Plan, currently under development, and due to be submitted to DP&I in March 2012.

Rehabilitation objectives and completion criteria defined in the Rehabilitation Strategy Table 1 provide measurement or assessment criteria for the proposed post mining land use:

- *'Stable and permanent, drainage and benching, batter slopes developed using a mix of existing methodologies and industry practice'*
- *'Closure criteria and proposed final land use are developed through stakeholder consultation'*
- *'Slope angles and lengths are compatible with regulatory requirements'*
- *'Consistency of final land use with surrounding land uses'*
- *'Ongoing management requirements'*

[5] Michael Frankcombe – Landloch Pty Ltd

Achievement of the rehabilitation objectives provided in the Rehabilitation Strategy require measureable closure criteria and Mt Arthur Coal has yet to develop measureable criteria and/or undertake an assessment of rehabilitation performance against measureable closure criteria. The Rehabilitation Management Plan that is being developed by Mt Arthur Coal in consultation with DI&I, OEH, NOW and MSC to satisfy Project Approval Schedule 3 condition 44 will address the objectives and completion criteria outlined in the Rehabilitation Strategy.

5.9.2 Mt Arthur Coal Consolidation Project Land Management and Rehabilitation Progress

Pre-clearance surveys have been undertaken for prior to clearing of vegetation for mining operations and for areas to be disturbed for exploratory drilling. Vegetation with hollows that have potential habitat value have been salvaged.

Topsoil stripping practices have achieved optimal recovery of topsoil averaging between 20 and 40 centimetres. Topsoil stockpiles storage heights have been limited to less than 3 metres, consistent with the Mining Operations Plan.

Areas of rehabilitation in the Saddlers North and CD1 areas and remediation and improvement repairs were carried out on selected areas of the CD1 dump, VD1 and the visual bund to minimise potential erosion and sediment loss during 2010 and 2011, consistent with the amended Mining Operations Plan submitted to DI&I in December 2010.

Disturbed areas rehabilitated were seeded with a specific targeted tree seed mix to meet the commitment to re-establishing significant vegetation communities required by the Project Approval. At Saddlers North the mix was formulated to achieve a Central Hunter Ironbark/Spotted Gum/Grey Box Forest community and at CD1 to achieve a Hunter White Box/Yellow Box/Blakely's Red Gum woodland community. The seed mix also included a light pasture mix to assist initial soil stabilisation and ground cover.

Aerial seeding trials occurred during 2009 with a successful trial on 4 hectares of overburden emplacement to evaluate the potential for vegetation establishment on spoil. Selected seed varieties and fertilisers were spread using a fixed wing aircraft along temporarily inactive dump faces at CD2 and CD3. The results exhibited good germination across the area without any need for cultivation or irrigation. The trials continued in 2010 with 85 hectares seeded in March and a further 100 hectares seeded in August 2010. Seed was applied directly on to overburden areas to establish temporary vegetation, for control of dust and to improve visual amenity.

During January and June 2012 Mt Arthur Coal completed 0.7 hectares of rehabilitation on VD1 and approximately 31 hectares of overburden was reshaped on the VD1, Belmont East and Brown's Lane areas. These shaped areas and 25 hectares at SD2, are planned for rehabilitation during the Q3 and Q4 2012. The aerial seeding program continued during the January to June 2012 period with approximately 96 hectares of exposed overburden seeded with a pasture mix.

Small scale rehabilitation trials on VD1 were commenced by Mt Arthur Coal during the January to June 2012 period to improve the ratio of tree to pasture cover. Approximately 2.5 hectares was scalped, disced with a tractor, sprayed to control weeds and aerial seeded with tree seed.

5.9.3 Audit Site Inspection Observations

An inspection of the Mt Arthur Coal was undertaken as part of this audit and generally the site was observed to be well managed from an erosion, sediment control and rehabilitation perspective.

Haul Roads

Mt Arthur Coal uses polymer dust suppressants to reduce dust emissions and sediment loss from haul roads. The continued use of polymer dust suppressants is recommended to control dust generation on the main haul roads.

Waste dumps CD3 and VD1

Plate 3: Aerial seeding trial area on Waste Dumps

Mt Arthur Coal has successfully undertaken aerial seeding with grass species on waste dumps to improve visual amenity, reduce dust emissions and reduce soil erosion.

This has been successful and aerial seeding should continue with expansion of the program to other areas of exposed spoil for the control of dust generation and erosion of the dump faces.

Windmill topsoil stockpile

The topsoil stockpiles in the Windmill area appeared to be dispersive and weed infested.

Topsoil could be tested prior to stripping and ameliorated during the stripping phase.

Topsoil stockpiles should be vegetated with cover crops as soon as possible following stripping to assist in maintaining biological viability of the soil and minimising weed establishment.

In some instances it may be more cost effective to bury dispersive, weed infested topsoil in the spoil and ameliorate the mine spoil with gypsum and compost.

Plate 4: Windmill topsoil stockpiles showing dispersive soils and weed infestation.

VD1 spoil dump progressive rehabilitation area

Progressive rehabilitation works were observed on the VD1 spoil dumps. Mt Arthur Coal is still using conventional contour banks to reduce slope length and concentration of flow.

The use of contour banks is not appropriate on dispersive spoils as ponding of water on dispersive spoils can result in tunnel and gully erosion. The photo shows a 'v' channel profile instead of a trapezoidal profile further increasing the erosion risk.

Plate 5: Spoil emplacement VD1 contoured and top-soiled for revegetation.

VD1 spoil dump rehabilitation area

Plate 6: Dense grass cover established on VD1 slope

The VD1 spoil dump is visible from the New England highway and Muswellbrook. It is a uniform re-profiled landform with contour banks and introduced pasture species. Mt Arthur Coal indicated that they have attempted to establish trees on this spoil dump to improve the visual amenity, with limited success.

The primary factor behind the poor establishment of trees on the VD1 soil dump is likely to be competition from pasture species and weeds.

McDonald's Pit Rehabilitation

An inspection was undertaken of the 'McDonald's rehabilitation area which included both pasture and native vegetation areas. There was no evidence of erosion in these areas and vegetation appeared to be growing well.

Plate 7: Rehabilitated area with trees and grass McDonalds Pit

Plate 8: Rehabilitated grass area McDonalds Pit

Whites Creek Diversion

Plate 9: Whites Creek diversion, where the access track crosses the creek diversion line.

The entire length of Whites Creek diversion was inspected. The diversion was generally stable and well vegetated.

An unsealed track crosses the diversion at one location. Erosion of the track has occurred resulting in sediment deposition in the diversion and visibly increased turbidity.

It is recommended that a culvert be installed across the Whites Creek diversion and the access track be sealed to reduce erosion and the generation of turbid runoff.

Maclean's topsoil stockpile area

Plate 10: Topsoil stockpiles Maclean's area.

Topsoil was being stockpiled at the 'Macleans' stockpile area.

The Soil Stripping Plan - section 3 states that an objective is to maintain topsoil viability during stripping, spreading and stockpiling through best practice techniques and effective stockpile design and treatment.

Section 6.3, paragraph 3 of the Soil Stripping Plan states: *'Stockpiles will be formed in low mounds of minimum height (3m maximum) and maximum surface area, consistent with the storage area available. If the stockpile is to be retained for a period of more than 6 months, the stockpile will be deep ripped and sown with local grass seed stock and legumes, such as those listed in Table 6.1, in order to keep the soil viable and to maintain biological activity. Stockpiles to be retained for a period of less than six months will be sown with a cover crop only. Topdressing material stockpiles will be clearly sign posted for easy identification and to avoid any inadvertent losses.'* While some areas of the topsoil dump were still active, dumping appeared to be complete for the bulk of the stockpile site.

There did not appear to be any shaping, ripping or revegetation (temporary or permanent) of the stockpiles. Weeds were beginning to colonise the topsoil stockpiles.

Current industry best practice for the management and stockpiling of topsoil includes:

- Testing and amelioration of the topsoil during the stripping phase.
- Stockpile heights no greater than the rooting depths of the grass used to stabilise the stockpiles to facilitate aerobic conditions in the stockpiles.
- Rapid stabilisation with vegetation to protect the surface from raindrop splash erosion, minimise weed establishment and maintain biological process within the soil.

Steep cut batter behind office

Plate 11: Steep cut batter behind office

A steep cut batter (approximately 1(v):1(h)) had been cut to facilitate the construction or expansion of an infrastructure area behind the main office facility. The batter had been topsoiled and hydro-mulched however slumping of the topsoil was observed and rill and gully erosion was evident on the batter.

The batter is too steep for topsoil application without additional controls such as turf reinforcement matting.

The exposed subsoils appear to be dispersive.

5.9.4 Suggestions for Rehabilitation Activities

General improvements to topsoil stockpile management could be achieved by implementing the following actions:

- Test the topsoil to determine the chemical and biological amelioration requirements of the topsoil.
- Monitor for weed establishment and spray any weeds that have established on the stockpiles.
- Shape the stockpiles with a maximum batter grade of 1(v):3(h).
- Apply ameliorants (gypsum, compost etc) and rip into the topsoil at the time of stockpiling.
- Protect any long term stockpiles by Hydro-seeding with non-invasive grass species and protect the surface stability with hydro-mulching.

To improve rehabilitation outcomes on the VD1 spoil dump, it is suggested that the following actions be considered:

- Direct seeding or tube stock planting with the current density of pasture grasses and weeds would result in competition for light, water and nutrients between the weeds and aggressive pasture species and the tree seedlings tube stock. It would not be cost effective to spray the weeds given the likely seed bank stored in the topsoil.
- The most practical way to establish native tree and shrub species on the spoil dumps is direct seeding with a compost blanket.
- Weed infested topsoil should be either stripped and buried or covered with 0.5m to 1m on non-dispersive mine spoil. The soil would then need to be ameliorated and contour ripped, then direct seeded with non-invasive cover crop species and native tree, shrub and grass species and with a 15mm to 50mm thick compost blanket. Compost needs to be of a high quality. Normally wetting agents, guar glues and microbial inoculants are applied at the same time to provide optimum growing conditions. (This approach has been used successfully on other coal mines in the Hunter Valley and construction sites in NSW and Queensland).
- It was noted that construction of the dump had not been completed. This remaining area would be the ideal location to trial this approach

General actions suggested to improve rehabilitation areas across the Mt Arthur Coal Complex site (particularly to apply to the steep cut batter behind the Mt Arthur Administrative Office) are:

- Test the soil for physical, chemical and biological parameters and determine amelioration requirements prior to reuse for rehabilitation.
- Install a lined drain (if necessary) at the top of the slope well away from the edge of the batter to prevent overland flow discharging over the batter.
- Remove the topsoil from the batter and roughen the subsoil using the teeth on an excavator bucket.
- Apply the soil ameliorants and seed with an Eco-blanket (high quality compost blanket applied with a bark blower truck).
- Irrigate until the cover crop establishes.

Recommended suggestions to improve rehabilitation outcomes are:

- Mt Arthur Coal develop detailed completion criteria for all rehabilitation types using a modified LFA process that considers agricultural production, stability, drainage and other aspects not addressed by LFA.
- Rehabilitating areas should be compared with analogue areas with similar vegetation types, slope, soil type and land use etc. This process will be important for demonstrating rehabilitation success and identifying areas requiring maintenance or improvement
- Consider undertaking spoil erosion modelling and develop a waste dump landform design that avoids the concentration of flow and the need for diversion banks and drop structures.
- Consider removing contour banks from already vegetated areas to minimise potential for future tunnel erosion/ gully erosion.
- If Mt Arthur Coal propose to continue using diversion banks (channel banks), ensure that they are designed in accordance with Table 6.1 of Volume 2E of the Blue Book. Ensure that they are correctly laid out using survey equipment and then checked prior to and following the application of topsoil.
- Design and construction details should be recorded using an inspection and test plan (ITP).

5.9.5 Summary / Conclusion

This independent environmental audit concluded the rehabilitation activities generally meet the criteria in the Environmental Assessment and Project Approval conditions and the statement of commitments in the Environmental Assessment and Project Approval. Overall the rehabilitation activities undertaken for the Mt Arthur Coal Complex are occurring progressively. A number of suggestions are provided for consideration by Mt Arthur Coal for improvement of outcomes on the finished areas of overburden emplacement where contouring and topsoil application is occurring.

5.10 Heritage Management

[Refer to Project Approval Schedule 3 condition 45]

The Mt Arthur Coal *Heritage Management Plan* requirements have been developed within an *Aboriginal Heritage Management Plan* MAC-ENC-MTP-042 and *European Heritage Management Plan* MAC-ENC-MTP-018.

5.10.1 Aboriginal Heritage

5.10.1.1 Aboriginal Heritage Management Plan

[Project Approval Schedule 3 condition 45 (a) and (b)]

An Aboriginal Heritage Management Plan MAC-ENC-MTP-042 was developed by Mt Arthur Coal as part of Heritage Management Plan and prepared to satisfy the requirements of Project Approval Schedule 3 condition 45 (a) and (b) and was submitted to DP&I on 30 March 2011.

The Aboriginal Heritage Management Plan was prepared in consultation with OEH and Aboriginal community representatives in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents, 2010.*

5.10.1.2 Aboriginal Cultural Heritage Activities

In June 2011, a meeting was held between Mt Arthur Coal and Aboriginal stakeholders to discuss the Mt Arthur Coal operation's cultural heritage and land management activities. Mt Arthur Coal received input from the stakeholders to better understand community expectations regarding a Keeping Place, training and employment, and community involvement mechanisms.

Aboriginal heritage item salvage works were undertaken at the Mcaleans Hill area in 2011 by twenty-two stakeholders representing a broad range of the Aboriginal community with 306 artefacts collected. These works were undertaken in accordance with the Macleans Hill Cultural Heritage Management Plan (approved by DP&I in February 2011)

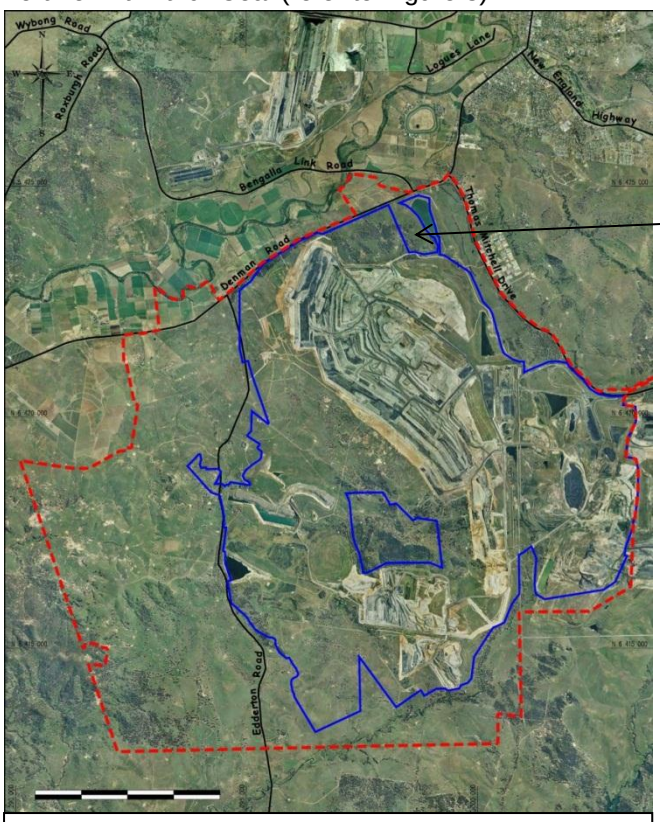
Additional ground surveys were undertaken by registered archaeologists to verify historical salvage across a number of pre-strip areas, including Saddlers Pit and ahead of Huon and Windmill pits, and in areas proposed for exploration drilling works.

5.10.1.3 Macleans Hill Cultural Heritage Management

[Project Approval Schedule 3 condition 45]

The Macleans Hill Cultural Heritage Management Plan was prepared to facilitate the management of Aboriginal Cultural Heritage and Aboriginal Archaeology and salvage of Aboriginal sites and ongoing protection of European heritage structures in the Macleans Hill area in advance of mining. Mining in the Macleans Hill area (Mine Extension 1) (Figure 1) will impact on the Macleans Hill Heritage Management Zones (HMZ) established under the Mt Arthur North Development Consent (DA 144-05-2000, approved 1 May 2001). An alternative Offset Area has been developed as part of the Project to mitigate the impacts to the HMZs. DoP approved the Macleans Hill Cultural Heritage Management Plan on 10 February 2011.

The Mt Arthur Coal mine plan ensures that a sufficient section of the eastern flank of Macleans Hill remains undisturbed to assist in reducing impacts from mining operations to receivers to the east and north of Mt Arthur Coal (refer to Figure 8).



Eastern flank of Macleans Hill will remain undisturbed to assist in reducing impacts from mining operations to receivers to the east and north of Mt Arthur Coal.

Figure 8: Consolidation Project Open Cut disturbance area (blue boundary).

5.10.1.4 Macleans Hill Activities

The Macleans Hill Cultural Heritage Management Plan approved by DP&I in February 2011 for salvage works in the area to be disturbed by mining was implemented for the salvage works undertaken in 2011 at the site by 22 stakeholders representing a broad range of the Aboriginal community with 306 artefacts collected.

In June 2011, a meeting was held between Mt Arthur Coal and Aboriginal stakeholders to discuss the Mt Arthur Coal operation's cultural heritage and land management activities. Mt Arthur Coal received input from the stakeholders to better understand community expectations regarding a Keeping Place, training and employment, and community involvement mechanisms.

5.10.1.5 Conclusion

The management of Aboriginal cultural affairs and cultural heritage items by Mt Arthur Coal has occurred in accordance with the Project Approval conditions, Statement of Commitments and Environmental Assessment commitments. The Aboriginal Heritage Management Plan and the Macleans Hill Cultural Heritage Management Plan provide a sound basis for the protection of Aboriginal cultural heritage within the Mt Arthur Coal Consolidation Project boundaries.

5.10.3 European Heritage Management

[Project Approval Schedule 3 condition 45(a) and (c)]

5.10.3.1 European Heritage Management Plan

[Project Approval Schedule 3 condition 45(c)]

A European Heritage Management Plan MAC-ENC-MTP-018 Plan was prepared in consultation with the Heritage Branch of NSW Department of Planning, local historical organizations, relevant landowners, and Muswellbrook Shire Council MSC) as part of Mt Arthur Coal Heritage Management Plan to satisfy the requirements of Project Approval Schedule 3 condition 45(a) and (c). The Plan was submitted to DP&I on 30 March 2011 and approved on 18 September 2012.

Draft Conservation Management Plans for Edinglassie Homestead and Rous Lench were reviewed in accordance with Project Approval Schedule 3 condition 45 (c) and the NSW Heritage Office guidelines on Conservation Management Plans, in 2011. The draft Conservation Management Plan was amended and will be lodged with DP&I for approval in 2012. The current draft Conservation Management Plans for the Belmont Homestead Complex (including the slab hut), and Edderton Homestead Complex will be finalised prior to mining impacts on these sites.

All European heritage structures are planned to be preserved in situ where possible in order to maintain their historic context, but If modelling indicates that mining operations will have a significant impact on the structures they will be relocated. Prior to the relocation of a heritage structure, a relocation plan will be submitted to DP&I.

The Beer Homestead was approved for relocation under the Mt Arthur Coal Mine Open Cut Consolidation Project Approval, and a detailed plan for the relocation will be developed in 2012.

5.10.3.2 European Heritage Management Activities

Mt Arthur Coal plan to preserve European heritage structures in situ where possible to maintain their historic context. If modelling indicates that mining operations will have a significant impact on the structures they will be relocated. (Prior to the relocation of a heritage structure, a relocation plan will be submitted to DP&I).

The ongoing management of the European heritage items includes photographic and archival recording, protection and monitoring, managing blasting, and additional archaeological excavation as required.

An inspection of all the Mt Arthur Coal historic homesteads and related buildings located on freehold land was also conducted. Maintenance measures included painting, fencing repairs, pest control, waste water management, lawn and garden maintenance, drainage improvement and minor structural repairs.

European heritage items that have the potential to be affected by the Mt Arthur Coal mine operations are recorded by a heritage consultant in accordance with the Heritage Information Series - How to Prepare Archival Records Of Heritage Items NSW Heritage Office (1998) and Heritage Information Series - Photographic Recording of Heritage Items Using Film or Digital Capture NSW Heritage Office (2006). Conservation management plans for Edinglassie and Rous Lench homesteads were lodged with DP&I for approval during the January to June 2012 period.

Ground vibration and overpressure from blasting on European heritage items identified in the EA (i.e. Edinglassie Homestead and Rous Lench – owned by Mt Arthur Coal; and Balmoral Homestead – not owned by Mt Arthur Coal), is managed in accordance with Blast Management Plan MAC-ENC-MTP-015 Appendix 3, and Blast Monitoring Program MAC-ENC-PRO-055. All blasts at Mt Arthur Coal are designed to maintain ground vibration levels <10 mm/s and overpressure levels <133dBL at Edinglassie homestead (details in MAC-ENC-MTP-015 Blast Management Plan section 3). The blast procedures include:

• operation of blast monitoring equipment at Edinglassie Homestead;
• conduct pre-blasting structural inspections;
• carry out all necessary structural repairs, consistent with the requirements of the NSW Heritage Council, to maintain the structural integrity of both buildings, as recommended in the building inspection reports; and
• report all monitoring results and actions carried out in the Annual Review.

Blast monitoring results have demonstrated compliance with the <133dBL overpressure and <10mm/s ground vibration criteria.

5.10.3.3 Conclusion

Management of European heritage items have been conducted by Mt Arthur Coal in accordance with the Project Approval conditions and commitments. The comprehensive European Heritage Management Plan provides sound management principles for the protection of the European heritage items in the vicinity of Mt Arthur Coal operations.

6. Conclusions and Recommendations

6.1 Conclusion

In general the independent auditors verified that the status of the operations of the Mt Arthur Coal complex in relation to the intent of the Project Approval conditions to be of a satisfactory standard. The Independent Environmental Audit demonstrated a high level of compliance with the requirements of the Project Approval prior to December 2011.

The Management Plans required by the Project Approval have been prepared by Mt Arthur Coal and were submitted to DP&I in accordance with the timing required by the specific conditions and the requirements of Project Approval Schedule 5 condition 2.

Mt Arthur Coal received approval from DP&I for the Air Quality Management Plan, Air Quality Monitoring Program, Noise Management Plan, Noise Monitoring Program, and Road Closure Management Plan on 6 June 2012; Aboriginal Heritage Management Plan, Site Water Balance, Erosion and Sediment Control Plan, Surface Water Monitoring Program, Groundwater Monitoring Program, and Surface Water and Groundwater Response Plan on 20 August 2012; Site Water Management Plan on 23 August 2012; Environmental Management Strategy and European Heritage Management Plan on 18 September 2012.

The management plans the Mt Arthur Consolidation Project were implemented by Mt Arthur Coal for environmental management of the operations even though DP&I had not formally approved the documents at the date of the audit, as the Plans address the requirements for environmental management of the Mt Arthur Consolidation Project.

The audit findings were generally satisfactory in relation to the management plans and their implementation. Suggestions and recommendations have been provided for consideration by Mt Arthur Coal.

6.2 Summary of Recommendations

Recommendations resulting from the findings of the independent environmental audit in relation to environmental management documentation are:

Erosion and Sediment Control

It is recommended that the Erosion and Sediment Control Plan be revised and the inclusion of reference to other relevant management plans/sections be inserted to demonstrate consistency with the components of *Managing Urban Stormwater: Soils and Construction, Volume2E Mines and Quarries* Appendix C.

Noise

It is recommended that the noise monitoring assessment procedure and/or apparatus for attended noise measurements be revised / updated to incorporate temporal analysis so that noise contributions from individual sources (including all intermittent and continuous mine-related sources, regardless of frequency) may be more specifically quantified / identified.

Rehabilitation

Recommended suggestions to improve rehabilitation outcomes are:

- Mt Arthur Coal develop detailed completion criteria for all rehabilitation types using a modified LFA process that considers agricultural production, stability, drainage and other aspects not addressed by LFA.

- Rehabilitating areas should be compared with analogue areas with similar vegetation types, slope, soil type and land use etc. This process will be important for demonstrating rehabilitation success and identifying areas requiring maintenance or improvement
- Consider undertaking spoil erosion modelling and develop a waste dump landform design that avoids the concentration of flow and the need for diversion banks and drop structures.
- Consider removing contour banks from already vegetated areas to minimise potential for future tunnel erosion/ gully erosion.
- If Mt Arthur Coal propose to continue using diversion banks (channel banks), ensure that they are designed in accordance with Table 6.1 of Volume 2E of the Blue Book. Ensure that they are correctly laid out using survey equipment and then checked prior to and following the application of topsoil.
- Design and construction details should be recorded using an inspection and test plan form (ITP).

6.3 Summary of Suggestions

Suggestions arising from the independent environmental audit for improvement of the environmental management documentation and/or activities are provided for consideration of Mt Arthur Coal:

Air Quality

Although the Air Quality Management Plan and Air Quality Monitoring Program address each requirement in the Project Approval the following administrative matters (that have no direct bearing on environmental impact) are provided as suggestions for Mt Arthur Coal consideration only. Acting on these suggestions is not critical, but may improve Mt Arthur Coal Air Quality Management Plan:

- The reporting period for annual average air quality results should be standardised to the calendar year where possible.

- It is recommended that any one, or a combination of the following occur in relation to TSP compliance assessment:

  - Formalise the approach using inferred TSP results based on measured PM10 data with the Department of Planning and Industry (DP&I), in consultation with the Office of Environment and Heritage (OEH);
  - Conduct some limited monitoring for TSP; or
  - Vary the MCoA to remove the TSP criterion.

- The Mt Arthur Coal assessment approach for analysing 24-hour PM10 impacts could be improved by considering the temporal and spatial elements of the path that dust leaving the site may be subject to. This need only be done for extreme cases, which may warrant specialist assessment.

- It would appear reasonable to investigate a better bird spike, an alternative perch for the birds or re-location of the DD05 gauge to a nearby site.

- Either the Air Quality Management Plan or the Mt Arthur Coal greenhouse gas and energy efficiency plan should make specific provision for reporting total site greenhouse gas emissions per tonne of product coal.

- The Air Quality Management Plan should:
  - Refer to the Mt Arthur Coal greenhouse gas and energy efficiency plan.
  - Include a reference to, or insert, the detailed baseline data into the Air Quality Management Plan
  - Provide further detail on a specific procedure, or set of relevant performance metrics against which to assess the effectiveness of management actions

- Incorporate a program for investigating and implementing ways to improve performance over time

Rehabilitation Activities

General improvements to topsoil stockpile management could be achieved by implementing the following actions:

- Test the topsoil to determine the chemical and biological amelioration requirements of the topsoil.
- Monitor for weed establishment and spray any weeds that have established on the stockpiles.
- Shape the stockpiles with a maximum batter grade of 1(v):3(h).
- Apply ameliorants (gypsum, compost etc) and rip into the topsoil at the time of stockpiling.
- Protect any long term stockpiles by Hydro-seeding with non-invasive grass species and protect the surface stability with hydro-mulching.

To improve rehabilitation outcomes on the VD1 spoil dump, it is suggested that the following actions be considered:

- Direct seeding or tube stock planting with the current density of pasture grasses and weeds would result in competition for light, water and nutrients between the weeds and aggressive pasture species and the tree seedlings tube stock. It would not be cost effective to spray the weeds given the likely seed bank stored in the topsoil.
- The most practical way to establish native tree and shrub species on the spoil dumps is direct seeding with a compost blanket.
- Weed infested topsoil should be either stripped and buried or covered with 0.5m to 1m on non-dispersive mine spoil. The soil would then need to be ameliorated and contour ripped, then direct seeded with non-invasive cover crop species and native tree, shrub and grass species and with a 15mm to 50mm thick compost blanket. Compost needs to be of a high quality. Normally wetting agents, guar glues and microbial inoculants are applied at the same time to provide optimum growing conditions. (This approach has been used successfully on other coal mines in the Hunter Valley and construction sites in NSW and Queensland).
- It was noted that construction of the dump had not been completed. This remaining area would be the ideal location to trial this approach

General actions suggested to improve rehabilitation areas across the Mt Arthur Coal Complex site (particularly to apply to the steep cut batter behind the Mt Arthur Administrative Office) are:

- Test the soil for physical, chemical and biological parameters and determine amelioration requirements prior to reuse for rehabilitation.
- Install a lined drain (if necessary) at the top of the slope well away from the edge of the batter to prevent overland flow discharging over the batter.
- Remove the topsoil from the batter and roughen the subsoil using the teeth on an excavator bucket.
- Apply the soil ameliorants and seed with an Eco-blanket (high quality compost blanket applied with a bark blower truck).
- Irrigate until the cover crop establishes.

Appendix 1 Consultation Letters

Project Approval Schedule 5 condition 7(b)

Mt Arthur Coal

bhpbilliton
resourcing the future

Hunter Valley Energy Coal Pty Ltd
Mt Arthur Coal
Thomas Mitchell Drive
Muswellbrook NSW 2333 Australia
Private Mail Bag No. 8
Muswellbrook NSW 2333 Australia
Tel +61 2 6542 4600 Fax +61 2 6542 4601
bhpbilliton.com

23 November 2011

Mr Steve Clair
Regional Operations Officer
PO Box 488G
Newcastle NSW 2300

Dear Steve

Mt Arthur Coal – December 2011 Independent Environmental Audit

In accordance with Hunter Valley Energy Coal's (HVEC) Development Approval DA 09_0062 for the Mt Arthur Coal Mine, an Independent Environmental Audit will be undertaken in early December 2011. The audit team has been now been endorsed by Department of Planning and Infrastructure (DoPI) and will include experts in surface water, groundwater, rehabilitation, air (dust), and noise and blasting.

The Independent Environmental Audit will assess the environmental performance of Mt Arthur Coal, and its compliance with the requirements of DA 09_0062, Environmental Protection Licence 11457, Mining Leases and management plans. The audit will also involve a review of the adequacy of strategies, plans and programs required under the abovementioned approvals and, where necessary, recommend appropriate measures or actions to improve the environmental performance of the project.

The audit will be comprehensive however, if there are any particular aspects within the items listed above that you would like the audit team to take into consideration, please contact either Julie McNaughton (02 6542 4840) or the undersigned (02 6542 4984), prior to Tuesday 6 December 2011.

Yours sincerely

SARAH BAILEY
Manager Approvals

Registered Office:
Hunter Valley Energy Coal Pty Ltd
Rialto Towers
Level 28, 525 Collins Street
Melbourne VIC 3000 Australia
ABN 39 002 894 464
Registered in Australia

NSW EPA
ENVIRONMENT PROTECTION AUTHORITY

Our reference: DOC11/54525;
LIC07/2093-08
Contact: Bill George 4908 6821

BHP Billiton
Hunter Valley Energy Coal Pty Ltd
Private Mail Bag No. 8
MUSWELLBROOK NSW 2333

Attn Sarah Bailey

15 DEC 2011

Dear Ms Bailey

INDEPENDENT ENVIRONMENT AUDIT - MT ARTHUR COAL

I refer to your letter received on 28 November 2011 to the Environment Protection Authority (EPA) (formally the Office of Environment and Heritage) inviting comments from the EPA regarding an independent environmental audit to be undertaken of Mt Arthur Coal mine in accordance with Development Approval 09_0062.

The EPA thanks you for the opportunity but has no specific comments to provide regarding the audit at this time.

Please contact me on 49086821 if you wish to discuss this matter.

Yours sincerely

15.12.11

BILL GEORGE
A/Head Regional Operations Unit – Hunter
Environment Protection Authority

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bhpbilliton.com

Mt Arthur Coal

23 November 2011

NSW Office of Water
Fergus Hancock
PO Box 2213 Dangar NSW 2309

Dear Fergus

Mt Arthur Coal – December 2011 Independent Environmental Audit

In accordance with Hunter Valley Energy Coal's (HVEC) Development Approval DA 09_0062 for the Mt Arthur Coal Mine, an Independent Environmental Audit will be undertaken in early December 2011. The audit team has been now been endorsed by Department of Planning and Infrastructure (DoPI) and will include experts in surface water, groundwater, rehabilitation, air (dust), and noise and blasting.

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Yours sincerely

SARAH BAILEY
Manager Approvals

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23 November 2011

Mr Michael Lloyd
Division Mineral Resources
Dept Trade & Investment, Regional Infrastructure & Services
PO Box 344
Hunter Region Mail Centre NSW 2310

Dear Michael

Mt Arthur Coal – December 2011 Independent Environmental Audit

In accordance with Hunter Valley Energy Coal's (HVEC) Development Approval DA 09_0062 for the Mt Arthur Coal Mine, an Independent Environmental Audit will be undertaken in early December 2011. The audit team has been now been endorsed by Department of Planning and Infrastructure (DoPI) and will include experts in surface water, groundwater, rehabilitation, air (dust), and noise and blasting.

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Yours sincerely

SARAH BAILEY
Manager Approvals

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23 November 2011

Mr Craig Flemming
Manager Environment & Natural Resources
Muswellbrook Shire Council
PO Box 122
Muswellbrook NSW 2333

Dear Craig

Mt Arthur Coal – December 2011 Independent Environmental Audit

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Yours sincerely

SARAH BAILEY
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Attachments

Attachment A	Project Approval 09_0062 Table of Conditions
Attachment B1	Statement of Commitments Mt Arthur Coal Consolidated Project EA - Appendix 3
Attachment B2	Environmental Assessment Commitments
Attachment C	Environment Protection Licence
Attachment D	Mine Leases Table of Environmental Conditions

Attachment A

Project Approval Application No. 09_0062

Mt Arthur Consolidation Project – 24 September 2010

Sched/ No.	Condition	Verification	Compliance	Comments
SCHEDULE 2 ADMINISTRATIVE CONDITIONS				
OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT				
2/1	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.	• Environmental Management Strategy MAC-ENC-MTP-041	Noted	The project is managed generally in accordance with control strategies outlined in environmental management strategy and plans.
TERMS OF APPROVAL				
2/2	The Proponent shall carry out the project generally in accordance with the: (a) EA; (b) statement of commitments; and (c) conditions of this approval. *Notes:* • *The general layout of the project is shown in Appendix 2.* • *The statement of commitments is reproduced in Appendix 3 (excluding the commitments which are directly reflected in or inconsistent with, the conditions of this approval).*	• Environmental Assessment – Mt Arthur Coal Consolidation Project, Nov 2009	C Ongoing	The Mt Arthur Coal project is being developed generally in accordance with the Mt Arthur Coal Consolidation Project Environmental Assessment, dated November 2009, and the conditions of the Project Approval.
2/3	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.	• Mt Arthur Coal Mine – Open Cut Consolidation Project Approval 09_0062, Sep 2010. • Environmental Assessment – Mt Arthur Coal Consolidation Project, Nov 2009.	Noted	The conditions of the Mt Arthur Coal Mine – Open Cut Consolidation Project Approval 09_0062, Sep 2010 prevail to the extent of any consistency, and are being implemented accordingly.
2/4	The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of: (a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted by the Proponent in accordance with this approval; and (b) the implementation of any actions or measures contained in these documents.	• Letter to DP&I re Comments on Environmental Management Plans, 30 Jun 2011	C (Ongoing as required)	The Department provided comments on the Environmental Management Strategy and Management Plans submitted in March 2011 and Mt Arthur Coal replied to the comments to DP&I on 30 Jun 2011. The response outlined the revisions that would be made to each document.

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>LIMITS ON APPROVAL</td><td></td><td></td><td></td></tr>
<tr><td>2/5</td><td>Mining operations for the project may take place until 30 June 2022.
Note: Under this approval, the Proponent is required to rehabilitate the site and perform additional undertakings to the satisfaction of the Director-General and I&I NSW. Consequently this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been properly rehabilitated.</td><td></td><td>Noted</td><td></td></tr>
<tr><td>2/6</td><td>The Proponent shall not extract more than:
(a) 32 million tonnes of ROM coal from the open cut mining operations in a calendar year; and
(b) 36 million tonnes of ROM coal from the combined Mt Arthur mine complex in a calendar year.</td><td>• ROM Coal Production Jan 2011 to Oct 2011</td><td>C</td><td>ROM Coal extracted from the Mt Arthur Mine Complex during 2010 and 2011 was:
<table><tr><td>Jan to Dec 2010</td><td>15,098,447 tonnes</td></tr><tr><td>Jan to Dec 2011</td><td>20,290,000 tonnes</td></tr></table>The ROM coal extracted is less than the extraction rates in the Project Approval and EPL condition A1.1.</td></tr>
<tr><td>2/7</td><td>The Proponent shall:
(a) not transport coal from the site by road (except in an emergency situation and with the prior approval of the Director-General in consultation with Council); and
(b) restrict coal transport on the Antiene rail spur to a maximum of:
• 27 million tonnes of product coal in a calendar year; and
• 24 train movements a day,
for the combined Mt Arthur mine complex, except under an agreement with the Drayton Mine to use some of its approved capacity, and where a copy of this agreement has been provided to the Director-General.</td><td>• Train Movement Data – Destination Port of Newcastle (all movements), 2010
• Train Movement Data – Destination Port of Newcastle (all movements), Jan to Oct 2011</td><td></td><td>Mt Arthur Coal complied with the coal transport requirements of condition 7 during 2010 and 2011:
(a) All coal is transported from the Mt Arthur site by rail, or by conveyor to nearby Power Stations (165,354 tonnes);
(b) Rail transport of coal during 2010 and 2011 were:
(c)<table><tr><th>Year</th><th>Tonnes</th><th>Max. No. of trains per day</th></tr><tr><td>2011</td><td>14,280,447</td><td>20 maximum train movements/day</td></tr><tr><td>2010</td><td>10,937,952</td><td>18 maximum train movements /day (occurred on 30 Jul and 4 Oct 2010)</td></tr></table></td></tr>
<tr><td colspan="5">SURRENDER OF CONSENTS</td></tr>
<tr><td>2/8</td><td>By the end of September 2011, or as otherwise agreed by the Director-General, the Proponent shall surrender all existing development consents/approvals for the project in accordance with sections 75YA and 104A of the EP&A Act, and to the satisfaction of the Director-General.</td><td>Letter from DP&I re Extension of Time to Surrender Bayswater No.3 Consent, 15 Sep 2011
Letter to Minister for Planning and Infrastructure re Surrender of Development Consents, 30 Sep 2011</td><td>C
Ongoing</td><td>Hunter Valley Energy Coal Pty Ltd submitted a notice of surrender of the development consents granted under Part 4 of the EP&A Act to the Minister for Planning on 30 September 2011. The Notice listed all Part 4 development consents to be surrendered under DA 09_0062 with the exception of the Bayswater No 3 development consent (DA 210/93). HVEC had obtained approval from the Director-General to surrender the Bayswater No 3 development consent at a later date.</td></tr>
</table>

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td>2/8</td><td>By the end of September 2011, or as otherwise agreed by the Director-General, the Proponent shall surrender all existing development consents/approvals for the project in accordance with sections 75YA and 104A of the EP&A Act, and to the satisfaction of the Director-General.
Notes:
• This approval will apply to all components of the Mt Arthur mine complex's open cut operations from the date of approval. The existing management and monitoring plans/strategies/programs/protocols/committees for the project will continue to apply until the approval of the comparable plan/strategy/program/protocol/committee under this approval;
• The existing approvals are identified in Appendix 4.</td><td>Letter from DP&I re Extension of Time to Surrender Bayswater No.3 Consent, 15 Sep 2011
Letter to Minister for Planning and Infrastructure re Surrender of Development Consents, 30 Sep 2011</td><td></td><td>
<table>
<tr><th>Planning Approval / No.</th><th>Approval Title</th><th>Date Granted</th><th>Consent Authority</th></tr>
<tr><td>Part 4
105-04-00</td><td>Construction of Rail Loop and Loading facility</td><td>2/11/00</td><td rowspan="3">Minister for Planning</td></tr>
<tr><td>Part 4
144-05-2000</td><td>Mt Arthur North Mine</td><td>1/05/01</td></tr>
<tr><td>Part 4
24/97</td><td>Bayswater Coal Preparation Plant</td><td>1997</td></tr>
</table>
The postponement of surrender of the Bayswater No. 3 consent has been granted by the DP&I until a final determination on the Mt Arthur Consolidation Project has been made by the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities under the Environmental Protection and Biodiversity Conservation Act 1996</td></tr>
<tr><td colspan="5">STRUCTURAL ADEQUACY</td></tr>
<tr><td>2/9</td><td>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 and MSB.
Notes:
• Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works;
• Part 8 of the EP&A Regulation sets out the requirements for the certification of the project;
• The project is located in the Muswellbrook Mine Subsidence District. Under Section 15 of the Mine Subsidence Compensation Act 1961, the Proponent is required to obtain the MSB's approval before constructing any improvements on the site.</td><td>Letter from the Mine Subsidence Board re Erection of New Buildings for Mt Arthur Mine,
Letter from Acrocert re Construction Works for Bathhouse, 31 Aug 2010</td><td>C</td><td>The required Certificates ad Approvals were obtained of the construction of a new bathhouse at the Mt Arthur Mine site from the Mine Subsidence Board and Acrocert prior to and following construction including:
• Notice of Determination – Construction Certificate
• Notice of Inspections
• Approved Construction Certificate Plans
• Site Notice.</td></tr>
<tr><td colspan="5">DEMOLITION</td></tr>
<tr><td>2/10</td><td>The Proponent shall ensure that all demolition work is carried out in accordance with AS 2601-2001:The Demolition of Structures, or its latest version.</td><td></td><td>Not activated</td><td>No demolition work had been conducted for the Mt Arthur Mining Complex during 2010 and 2011.</td></tr>
</table>

Sched/ No.	Condition	Verification	Compliance	Comments
PROTECTION OF PUBLIC INFRASTRUCTURE				
2/11	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, except where such works have been compensated through the *Mining Act 1992* or the planning agreement referred to in condition 14 below.		Not activated	
OPERATION OF PLANT AND EQUIPMENT				
2/12	The Proponent shall ensure that all plant and equipment used at the site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	• Mechanical Engineering Management Plan, MAC-STE-MTP-011 • Electrical Engineering Management Plan, MAC-STE-MTP-010	C	The plant and equipment used on the Mt Arthur Mining Complex site is maintained in the on-site workshops in accordance with the Mechanical Engineering Management Plan.
STAGED SUBMISSION OF STRATEGIES, PLANS AND PROGRAMS				
2/13	With the approval of the Director-General, the Proponent may: (a) submit any strategy, plan or program required by this approval on a progressive basis; and (b) combine any strategy, plan or program required by this approval with any similar strategy, plan or program for the Mt Arthur Underground Project. *Note: For the avoidance of doubt, existing approved management plans, strategies or monitoring programs for the open cut operations of the Mt Arthur mine complex will continue to apply until the approval of a similar plan, strategy or program under this approval, or until the surrender of existing approvals (see condition 8 above).*	• Letter from Planning re Macleans Hill Interim Aboriginal Heritage Management Plan Approval, 10 Feb 2011	C	To facilitate the salvage of Aboriginal sites within the Macleans Hill mining area, NSW Planning granted approval in November 2010 for the early submission of the Macleans Hill Aboriginal Heritage Management Plan (ahead of the submission of the full Heritage Management Plan required in March 2011).
PLANNING AGREEMENT				
2/14	By the end of March 2011, unless otherwise agreed by the Director-General, the Proponent shall use its best endeavours to enter into a planning agreement with Council in accordance with Division 6 of Part 4 of the EP&A Act, that provides for a contribution to Council for: • general community enhancement to address environmental, social amenity and community • infrastructure requirements arising from the project; and	• Voluntary Planning Agreement, 24 Jun 2011	C	The Voluntary Planning Agreement between the Hunter Valley Energy Coal Pty Ltd and Muswellbrook Shire Council was prepared by the end of March and signed by the Muswellbrook Shire Council on 24 June 2011 for contributions: • Mt Arthur Coal Community Fund $500,000 per annum plus PI paid monthly • Thomas Mitchell Drive Upgrade - $3,000,000 paid in annual instalments based on execution of works as

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>• upgrade and maintenance of Council's road infrastructure affected by the project.
The contributions shall be generally consistent with the terms of the offer made in the statement of commitments, and summarised in Appendix 9.
If there is any dispute between the Proponent and Council during the formal drafting of the planning agreement, then either of the parties may refer the matter to the D-G for resolution.</td><td></td><td></td><td>set out in the Upgrade Plan
• Thomas Mitchell Drive Maintenance - $12,000 per annum plus CPI
• Council Environmental Assessment - $20,000 per annum plus CPI</td></tr>
<tr><td colspan="5">SCHEDULE 3 ENVIRONMENTAL PERFORMANCE CONDITIONS</td></tr>
<tr><td colspan="5">ACQUISITION UPON REQUEST</td></tr>
<tr><td>3/1</td><td>Upon receiving a written request for acquisition from an owner of the land listed in Table 1, the Proponent shall acquire the land in accordance with the procedures in conditions 7-8 of schedule 4.
Table 1: Land subject to acquisition upon request
<table>
<tr><th>Receiver No.</th><th>Receiver</th><th>Acquisition Basis</th></tr>
<tr><td>1, 8</td><td>Drake</td><td>Air quality</td></tr>
<tr><td>6</td><td>Scriven</td><td>Air quality</td></tr>
<tr><td>7</td><td>Webber</td><td>Air quality</td></tr>
<tr><td>9</td><td>Englebrecht</td><td>Air quality</td></tr>
<tr><td>28</td><td>McGoldrick</td><td>Air quality</td></tr>
<tr><td>29</td><td>Barnett</td><td>Air quality</td></tr>
<tr><td>101</td><td>Horder</td><td>Noise</td></tr>
<tr><td>102</td><td>Robertson</td><td>Noise</td></tr>
<tr><td>203, 204</td><td>Latham</td><td>Air quality</td></tr>
<tr><td>206</td><td>Wild</td><td>Air quality</td></tr>
<tr><td>207, 208</td><td>Zahra</td><td>Air quality</td></tr>
<tr><td>209, 210, 211</td><td>Rankin</td><td>Air quality</td></tr>
<tr><td>212</td><td>Chudyk</td><td>Air quality, Noise</td></tr>
<tr><td>226</td><td>Wynne & Roots</td><td>Air quality</td></tr>
<tr><td>241</td><td>Lane</td><td>Air quality</td></tr>
<tr><td>264</td><td>Moore</td><td>Air quality</td></tr>
</table>
Notes:
1 To interpret the locations referred to in Table 1, see the applicable figure in Appendix 5.
2 The Proponent is only required to acquire this property if</td><td>• Noise Management Plan, MAC-ENC-MTP-032
• Noise Monitoring Program, MAC-ENC-PRO-056.
• Mt Arthur Coal Consultation Correspondence Database</td><td>Not activated</td><td>No written requests have been received by Mt Arthur Coal from landowners in relation to acquisition, between September 2010 and December 2011.

Verbal agreements to purchase three properties listed in Table 1 has occurred with negotiated settlements finalised between Mt Arthur Coal and the land owners (Webber, Englebrecht and Zahra).

(Note Chudyk Property Mo. 212 has been purchased by a neighbouring mine.)</td></tr>
</table>

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>acquisition is no longer reasonably achievable under the approval for the Drayton mine.
3 The Proponent is only required to acquire this property if acquisition is no longer reasonably achievable under the approval for the Bengalla mine.</td><td></td><td></td><td></td></tr>
<tr><td colspan="5">NOISE</td></tr>
<tr><td colspan="5">Impact Assessment Criteria</td></tr>
<tr><td>3/2</td><td>The Proponent shall ensure that the noise generated by the Mt Arthur mine complex does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land or on more than 25 per cent of any privately-owned land, except where such exceedance is predicted in the EA.
For these properties, the Proponent shall comply with the noise level predictions in the EA.
However, these noise limits do not apply if the Proponent has an agreement with the relevant owner/s of these residences/ land to generate higher noise levels, and the Proponent has advised the Department in writing of the terms of this agreement.
Table 2: Noise Impact Assessment Criteria dB(A)
<table>
<tr><th>Location</th><th>Day</th><th>Evening</th><th colspan="2">Night</th></tr>
<tr><td></td><td colspan="3">LAeq (15min)</td><td>LA1 (1 in)</td></tr>
<tr><td>A – Antiene Estate</td><td>37</td><td>40</td><td>38</td><td>45</td></tr>
<tr><td>B – Skelletar Stock Route, Thomas Mitchell Drive, Denman Rd East</td><td>39</td><td>38</td><td>37</td><td>45</td></tr>
<tr><td>C – Racecourse Rd</td><td>41</td><td>40</td><td>39</td><td>45</td></tr>
<tr><td>D – Denman Rd NW, Roxburgh</td><td>37</td><td>36</td><td>35</td><td>45</td></tr>
<tr><td>Vineyard (NE), Roxburgh Rd</td><td></td><td></td><td></td><td></td></tr>
<tr><td>E–Sth Muswelbrook</td><td>39</td><td>39</td><td>39</td><td>45</td></tr>
<tr><td>F – Denman Road West, Roxburgh Vineyard (west)</td><td>37</td><td>36</td><td>35</td><td>45</td></tr>
<tr><td>G – East Antiene</td><td>41</td><td>40</td><td>39</td><td>45</td></tr>
</table></td><td>• Noise Management Plan, MAC-ENC-MTP-032
• Noise Monitoring Program, MAC-ENC-PRO-056
• 2010 AEMR section 3.8 Noise
• Quarterly Environmental Noise Monitoring Survey Q4 2011, Global Acoustics
• Quarterly Environmental Noise Monitoring Survey Q3 2011, Global Acoustics
• Quarterly Environmental Noise Monitoring Survey Q2 2011, Global Acoustics
• Quarterly Environmental Noise Monitoring Survey Q1 2011, Global Acoustics</td><td>C</td><td>Implementation of the Noise Management Plan and monitoring conducted in accordance with the Noise Monitoring Program, have indicated that noise emissions from the Mt Arthur Project operations have complied with the noise impact assessment criteria.
The results reported in the Quarterly Noise Monitoring Reports prepared by Global Acoustics concluded that the noise levels from Mt Arthur Coal complied with the $LAeq_{(15\ minute)}$ and $LA1_{(1\ minute)}$ development consent night-time criteria at all monitoring locations during the Quarterly surveys in 2011.
(Note Chudyk Property Mo. 212 has been purchased by a neighbouring mine.)</td></tr>
</table>

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>Notes:
To interpret the locations referred to Table 2, see the applicable figures in Appendix 5.
Noise generated by the project is to be measured in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy.</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Land Acquisition Criteria</td><td></td><td></td><td></td></tr>
<tr><td>3/3</td><td>If the noise generated by the Mt Arthur mine complex exceeds the criteria in Table 3 at any residence on privately-owned land or on more than 25 per cent of any privately-owned land, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 7-8 of schedule 4.
Table 3: Land acquisition criteria dB(A) LAeq (15min)
<table>
<tr><th>Location</th><th>Day</th><th>Evening</th><th>Night</th></tr>
<tr><td>A – Antiene Estate</td><td>42</td><td>45</td><td>43</td></tr>
<tr><td>B – Skelletar Stock Route, Thomas Mitchell Drive, Denman Road East</td><td>44</td><td>43</td><td>42</td></tr>
<tr><td>C – Racecourse Road</td><td>46</td><td>45</td><td>44</td></tr>
<tr><td>D – Denman Road North-west, Roxburgh Vineyard (north-east), Roxburgh Road</td><td>42</td><td>41</td><td>40</td></tr>
<tr><td>E – South Muswellbrook</td><td>44</td><td>44</td><td>44</td></tr>
<tr><td>F – Denman Road West, Roxburgh Vineyard (west)</td><td>42</td><td>41</td><td>40</td></tr>
<tr><td>G – East Antiene 46 45 44</td><td>46</td><td>45</td><td>44</td></tr>
</table>
Notes:
To interpret the locations referred to Table 3, see the applicable figures in Appendix 5.
Noise generated by the project is to be measured in accordance with the relevant requirements, and
exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy.
For this condition to apply, the exceedance of the criteria must be systemic.</td><td>Noise Management Plan, MAC-ENC-MTP-032
Noise Monitoring Program, MAC-ENC-PRO-056
2010 AEMR section 3.8 Noise
Quarterly Environmental Noise Monitoring Survey Q4 2011, Global Acoustics
Quarterly Environmental Noise Monitoring Survey Q3 2011, Global Acoustics
Quarterly Environmental Noise Monitoring Survey Q2 2011, Global Acoustics
Quarterly Environmental Noise Monitoring Survey Q1 2011, Global Acoustics</td><td>Ongoing</td><td>The quarterly noise monitoring conducted in accordance with the Noise Monitoring Program indicated that Mt Arthur Coal did not exceed the (LAeq (15 minute) dB(A) acquisition criteria during 2010-2011.

No written requests have been received by Mt Arthur Coal from landowners in relation to acquisition, between September 2010 and December 2011.

Verbal agreements to purchase three properties listed in Table 1 has occurred with negotiated settlements finalised between Mt Arthur Coal and the land owners.

A written request was received by Mt Arthur Coal from a landowner a property that is outside the acquisition zone defined in Schedule 3 condition 1, in relation to acquisition. This recent request was being investigated by Mt Arthur at the date of this audit.</td></tr>
</table>

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td>Cumulative Noise Criteria</td><td></td><td></td><td></td></tr>
<tr><td>3/4</td><td>Except for the noise-affected land in Table 1, the Proponent shall implement all reasonable and feasible measures to ensure that the noise generated by the Mt Arthur mine complex combined with the noise generated by other mines and industries does not exceed the criteria in Table 4 at any residence on privately-owned land or on more than 25 per cent of any privately-owned land.
Table 4: Cumulative noise impact assessment criteria dB(A) LAeq (period)
<table>
<tr><th>Location</th><th>Day</th><th>Evening</th><th>Night</th></tr>
<tr><td>All privately-owned land</td><td>50</td><td>45</td><td>40</td></tr>
</table>
Note: Cumulative noise is to be measured in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy.</td><td>• Noise Management Plan, MAC-ENC-MTP-032
• Noise Monitoring Program, MAC-ENC-PRO-056</td><td>C</td><td>Quarterly noise monitoring has not indicated exceedence of the cumulative noise criteria during 2010 and 2011.</td></tr>
<tr><td>3/5</td><td>If the cumulative noise generated by the Mt Arthur mine complex combined with the noise generated by other mines exceeds the criteria in Table 5 at any residence on privately-owned land or on more than 25 per cent of any privately-owned land, then upon receiving a written request from the land owner, the Proponent shall acquire the land on as equitable basis as possible with the relevant mines, in accordance with the procedures in conditions 7-8 of schedule 4.
Table 5: Cumulative noise land acquisition criteria dB(A) LAeq (period)
<table>
<tr><th>Location</th><th>Day</th><th>Evening</th><th>Night</th></tr>
<tr><td>All privately-owned land</td><td>55</td><td>50</td><td>45</td></tr>
</table>
Note: The cumulative noise generated by the Mt Arthur mine complex combined with the noise generated by other mines is to be measured in accordance with the relevant requirements, and exemptions (including certain meteorological conditions), of the NSW Industrial Noise Policy.</td><td>• Noise Management Plan, MAC-ENC-MTP-032
• Noise Monitoring Program, MAC-ENC-PRO-056
• Mt Arthur Coal Consultation Correspondence Database</td><td>C
Ongoing</td><td>Quarterly noise monitoring has not indicated exceedence of the cumulative noise criteria during 2010 and 2011.</td></tr>
<tr><td colspan="5">Traffic Noise Impact Assessment Criteria</td></tr>
<tr><td>3/6</td><td>The Proponent shall take all reasonable and feasible measures to ensure that the traffic noise generated by the</td><td>• Noise Management Plan, MAC-ENC-MTP-032</td><td>In progress</td><td>A proposal for the traffic noise impact study has been developed by Vipac and was submitted to Mt Arthur Coal on 2</td></tr>
</table>

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>Mt Arthur mine complex does not exceed the traffic noise impact assessment criteria in Table 6, except where such an exceedance is predicted in the EA. For these properties, the Proponent shall comply with the noise levels predicted in the EA.
Table 6: Traffic noise impact assessment criteria dB(A)
<table>
<tr><th>Road</th><th>Day/Evening LAeq (1 hr)</th><th>Night LAeq (1 hr)</th></tr>
<tr><td>Thomas Mitchell Drive, Denman Road (east of Thomas Mitchell Drive</td><td>60</td><td>55</td></tr>
<tr><td>Denman Road (west of Thomas Mitchell Drive)</td><td>55</td><td>50</td></tr>
</table>
Note: Traffic noise generated by the Mt Arthur mine complex is to be measured in accordance with the relevant procedures in the DECCW's Environmental Criteria for Road Traffic Noise.</td><td>• Noise Monitoring Program, MAC-ENC-PRO-056
• Proposal for Traffic Noise Study, Vipac Engineers and Scientists Limited, 2 Dec 2011</td><td></td><td>December 2011. The study is planned to commence in Q1 2012.</td></tr>
<tr><td colspan="5">Additional Noise Mitigation Measures</td></tr>
<tr><td>3/7</td><td>Upon receiving a written request from the owner of any residence:
(a) on the noise affected land listed in Table 1;
(b) on the land listed in Table 7;
(c) on any other privately-owned land where subsequent operational noise monitoring shows the noise generated by the Mt Arthur mine complex exceeds the noise limits in Table 2 by more than 2 decibels; and
(d) on Thomas Mitchell Drive or Denman Road where subsequent noise monitoring shows traffic noise levels generated by the Mt Arthur mine complex exceed the traffic noise criteria in Table 6, the Proponent shall implement reasonable and feasible noise mitigation measures (such as double glazing, insulation, and/or air conditioning) at any residence in consultation with the owner.
If within 3 months of receiving this request from the landowner, 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 Director-General for resolution.
Table 7: Land subject to additional noise mitigation upon</td><td>• Noise Management Plan, MAC-ENC-MTP-032
• Noise Monitoring Program, MAC-ENC-PRO-056
• Mt Arthur Coal Consultation Correspondence Database</td><td>C
Ongoing</td><td>No incidents of disagreement between the Proponent and the landowner requiring reference of the matter to the Director-General have occurred.</td></tr>
</table>

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>request
<table><tr><th>Receiver No.</th><th>Receiver</th></tr><tr><td>11</td><td>Drake</td></tr><tr><td>12</td><td>Tubb</td></tr><tr><td>13</td><td>Turner & Upper Hunter Developers P/L</td></tr><tr><td>39, 40</td><td>Buckley</td></tr><tr><td>41</td><td>Ray</td></tr><tr><td>42</td><td>Hallett & Campbell</td></tr><tr><td>49</td><td>Webber</td></tr><tr><td>94</td><td>Skinner</td></tr><tr><td>97</td><td>Clifton</td></tr><tr><td>98</td><td>Jones</td></tr><tr><td>99</td><td>Hunter (2 residences)</td></tr><tr><td>100</td><td>Sharman</td></tr></table>Note: To interpret the locations referred to in Table 7, see the applicable figure in Appendix 5.</td><td></td><td></td><td></td></tr>
<tr><td colspan="5">Operating Conditions</td></tr>
<tr><td>3/8</td><td>The Proponent shall:
(a) implement best noise management practice, which includes implementing all reasonable and feasible noise mitigation measures;
(b) ensure that the real-time noise monitoring and meteorological forecasting data are assessed regularly, and that mining operations are relocated, modified and/or suspended to ensure compliance with the relevant conditions of this approval; and
(c) regularly investigate ways to reduce the operational, low frequency, rail and road traffic noise generated by the project, and report on these investigations in the annual review (see condition 3 of schedule 5),
to the satisfaction of the Director-General.</td><td>• Noise Management Plan, MAC-ENC-MTP-032
• Noise Monitoring Program, MAC-ENC-PRO-056</td><td>C</td><td>The Noise Management Plan MAC-ENC-MTP-032 includes section for management of noise during operations:
(a) Section 4.1 Controlling Noise at the Source
(b) Section 5 Monitoring Program, and Noise Monitoring Program MAC-ENC-PRO-056
(c) Section 4.2 Controlling Noise Transmission</td></tr>
<tr><td colspan="5">Noise Management Plan</td></tr>
<tr><td>3/9</td><td>The Proponent shall prepare and implement a Noise Management Plan for the Mt Arthur mine complex to the satisfaction of the Director-General. This plan must:
(a) be prepared in consultation with DECCW, and be</td><td>• Noise Management Plan MAC-ENC-MTP-032
• Noise Monitoring Program MAC-ENC-PRO-056</td><td>C</td><td>The Noise Management Plan was prepared to satisfy the requirements of the Project Approval Schedule 3 condition 9 for the Mt Arthur Complex and was submitted to the DP&I on 30 March 2011. DP&I approved the Noise Management Plan on 20</td></tr>
</table>

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>submitted to the Director-General for approval by the end of March 2011;
(b) describe the noise mitigation measures that would be implemented to ensure compliance with the relevant conditions of this approval, including a real-time noise management system; and
(c) include a noise monitoring program, that uses a combination of real-time and supplementary attended monitoring measures to evaluate the performance of the Mt Arthur mine complex, and includes a protocol for determining exceedances of the relevant conditions in this approval</td><td></td><td></td><td>August 2012:
(a) Section 1.3 Consultation Process
(b) Section 4.1 Controlling Noise at the Source
(c) Section 5 Monitoring program includes real time monitoring and attended noise monitoring:
• Four (4) real-time directional monitors installed.
• 1kHz low-pass frequency filtered to eliminate insects.
• SMS triggers when levels approach criteria.
• Calibration schedule described.</td></tr>
<tr><td colspan="5">BLASTING</td></tr>
<tr><td colspan="5">Blast Impact Assessment Criteria</td></tr>
<tr><td>3/10</td><td>The Proponent shall ensure that blasts on site do not cause exceedances of the criteria in Table 8.
Table 8: Blasting impact assessment criteria
<table>
<tr><th>Location</th><th>Air-blast over-pressure (dB (Lin Peak))</th><th>Ground vibration (mm/s)</th><th>Allowable exceedance</th></tr>
<tr><td rowspan="2">Residence on privately owned land</td><td>115</td><td>5</td><td>5% of the blasts over a 12mth period</td></tr>
<tr><td>120</td><td>10</td><td>0%</td></tr>
<tr><td>Heritage incl. Edinglassie & Rous Lench</td><td>133</td><td>10</td><td>0%</td></tr>
</table></td><td>• Blast Management Plan (draft) MAC-ENC MTP-015
• 2010 AEMR section 3.1 Blasting
• Environmental Monitoring Data, section 1, Jan-Feb 2011
• Environmental Monitoring Data, section 1, Mar-Apr 2011
• Environmental Monitoring Data, section 1, May-Jun 2011
• Environmental Monitoring Data, section 1, Jul-Aug 2011
• Environmental Monitoring Data, section 1, Sep-Oct 2011</td><td>C</td><td>No blast overpressure or peak particle velocity (ppv) ground vibration monitoring results exceeded the criteria in Schedule 3 condition 10 during 2010 and 2011.

All results were below the maximum Project Approval criteria of 120dbL maximum for overpressure or ppv of 10mm/s at the monitored locations (BP04, BP05, BP06, BP07 and BP09).</td></tr>
<tr><td></td><td>Blasting Hours</td><td></td><td></td><td></td></tr>
<tr><td>3/11</td><td>The Proponent shall only carry out blasting on 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 Director-General.</td><td>• Environmental Monitoring Data – Blasting Jan to Dec 2011</td><td>C</td><td>Blasting on site only occurs between 0900hrs and 1700 hours Monday to Saturday. No blasting has occurred on Sundays or public holidays between September 2010 and December 2011.</td></tr>
<tr><td></td><td>Blasting Frequency</td><td></td><td></td><td></td></tr>
<tr><td>3/12</td><td>The Proponent may carry out a maximum of:
(a) 2 blasts a day;
(b) 12 blasts a week; and</td><td>• Environmental Monitoring Data – Blasting Jan to Dec 2011</td><td>C</td><td><table><tr><th colspan="3">Blast Events Jan 2011 to Oct 2011</th></tr><tr><th>Dates</th><th>Occasions of more than 1 Blast/day</th><th>Total No. of Blasts</th></tr></table></td></tr>
</table>

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>(c) 4 blasts a week with a maximum instantaneous charge of greater than 1,500 kilograms, averaged over a 12 month period, for all open cut operations at the Mt Arthur 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.</td><td>• Environmental Monitoring Data, section 1, Jan-Feb 2011
• Environmental Monitoring Data, section 1, Mar-Apr 2011
• Environmental Monitoring Data, section 1, May-Jun 2011
• Environmental Monitoring Data, section 1, Jul-Aug 2011
• Environmental Monitoring Data, section 1, Sep-Oct 2011</td><td></td><td>
<table>
<tr><td>Jan-Feb 2011</td><td>2 Blasts on 14/1/11
2 blasts on 23/2/11</td><td>25</td></tr>
<tr><td>Mar-Apr 2011</td><td>2 blasts on 30/3/11
2 blasts on 19/4/11</td><td>18</td></tr>
<tr><td>May-Jun 2011</td><td>2 blasts on 2,3,4,11 and16/5/11
2 blasts on 28/6/11</td><td>24</td></tr>
<tr><td>Jul-Aug 2011</td><td>2 blasts on 18/7/11
2 blasts on 02/8/11</td><td>28</td></tr>
<tr><td>Sep- Oct 2011</td><td>2 Blasts on 15/9/11
2 blasts on 18/10/11</td><td>19</td></tr>
</table>
There were no more than two (2) blasts per day and less than 12 blasts per week recorded between January and December 2011.</td></tr>
<tr><td colspan="5">Property Inspections</td></tr>
<tr><td>3/13</td><td>By the end of November 2010, the Proponent shall advise the owners of privately-owned land within 3 kilometres of any approved blasting operations that they are entitled to a structural property inspection to establish the baseline condition of buildings and other structures on the property.</td><td>• Letter to Property Owners re Structural Property Inspections, dated 29 Nov 2010</td><td>C</td><td>Letters to property owners within 3 km of blasting operations were provided on 29 November 2010 advising they were entitled to a structural property inspection to establish the baseline condition of buildings and other structures on the property.</td></tr>
<tr><td>3/14</td><td>If the Proponent receives a written request for a property inspection from any such landowner, the Proponent shall:
(a) within 2 months of receiving this request commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to:
• establish the baseline condition of any buildings and other structures on the land; and
• identify measures that should be implemented to minimise the potential blasting impacts of the project on these buildings or structures; and
(b) give the landowner a copy of the property inspection report.</td><td>• Letter from Planning re Independent Property Inspector, 11 Mar 2011</td><td>C</td><td>(a) The Director-General approved Bill Jordan & Associates as suitably qualified and experienced to undertake relevant property inspections.
(b) A copy of any property inspection report is forwarded to the landowner:
(c) A copy of property inspection reports were provided to the landowner in relation to the following property inspections:
• 25 Thomas Mitchell Drive Lot No.19/260504
• H&M Engineering and Construction Lot No.1048521
• 13-15 Blakefield Road Lot No’s 69and 70/261835
• 23 Wallarah Road Lot No.652/1104503
• 31 Strathmore Road Lot No.100/261835
• 13 Thomas Mitchell Drive Lot No.13/260504
• 291 Denman Road Lot No.1/180932 and 2/516822
• Sheppard Avenue Lot No.174/732267
• 30 Denman Road Lot No.30/1051661
• 66 Roxburgh Road Muswellbrook</td></tr>
</table>

Sched/ No.	Condition	Verification	Compliance	Comments
Property Investigations				
3/15	If any landowner of privately-owned land within 3 kilometres (including the whole of the Racecourse Road area and the area southwest of Skellatar Stock Route) of blasting operations, or any other landowner nominated by the Director-General claims that buildings and/or structures on his/her land have been damaged as a result of blasting at the project, the Proponent shall within 3 months of receiving this request: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to investigate the claim; and (b) give the landowner a copy of the property investigation report. 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 Director-General. If the Proponent or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Director-General for resolution.	• Letter from Planning re Independent Property Inspector, 11 Mar 2011 • Letter Report from Bill Jordan & Associates re Property Inspection 25 Thomas Mitchell Drive, 29 April 2011 • Property Inspection List, 2011	C Ongoing	(a) The Director-General approved Bill Jordan & Associates as suitably qualified and experienced to undertake relevant property inspections. (b) Property inspections have occurred for the following privately owned land in March 2011: <u>29 March 2011 –</u> • 25 Thomas Mitchell Drive Lot No.19/260504 • H&M Engineering and Construction Lot No.1048521 • 13-15 Blakefield Road Lot No's 69and 70/261835 • 23 Wallarah Road Lot No.652/1104503 <u>30 March 2011 -</u> • 31 Strathmore Road Lot No.100/261835 • 13 Thomas Mitchell Drive Lot No.13/260504 • 291 Denman Road Lot No.1/180932 and 2/516822 • Sheppard Avenue Lot No.174/732267 • 30 Denman Road Lot No.30/1051661 • 66 Roxburgh Road Muswellbrook A copy of the Property Inspection Report was provided to each landowner.
Operating Conditions				
3/16	During mining operations on site, the Proponent shall: (a) implement best blasting practice to: • protect the safety of people and livestock in the area surrounding blasting operations; • protect public or private infrastructure/property in the area surrounding blasting operations from blasting damage; and • minimise the dust and fume emissions from blasting at the project; (b) co-ordinate the timing of blasting on site with the timing of blasting at the Drayton and Bengalla coal mines to minimise the potential cumulative blasting impacts of the three mines; and (c) operate a suitable system to enable the general public and surrounding landowners and tenants to get up-to-date information on the proposed blasting schedule on site,	• Blast Management Plan • MAC-ENC-MTP-015, Mar 2011 • Emails re blast notification and road closures	C	The Blast Management Plan includes practices to be implemented during operations: (a) the Blast Management Plan includes: • section 2 Blast Mitigation Measures – Best Practice Control Measures for implementation of best practice: • Section 2.2 Management of Fly rock - an appropriate exclusion zone for people and livestock will be established around each blast site beyond the expected range of any fly rock with an additional safety margin. (b) Mt Arthur has consulted with neighbouring mines and provides regular notification to all operators of blasting schedules to co-ordinate schedules and minimise cumulative impacts, (c) Section 4.4 Landholder Notification

Sched/ No.	Condition	Verification	Compliance	Comments
	to the satisfaction of the Director-General.			
	Blast Management Plan			
3/17	The Proponent shall prepare and implement a Blast Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be prepared in consultation with DECCW, and be submitted to the Director-General for approval by the end of March 2011; and (b) describe the blast mitigation measures that would be implemented to ensure compliance with the relevant conditions of this approval, including detailed demonstration that blasting within the hatched area shown on the figure in Appendix 6 can be undertaken in a manner that will meet the blast impact assessment criteria in Table 8 at all times; (c) describe the measures that would be implemented to ensure that the general public and surrounding landowners and tenants to get up-to-date information on the blasting schedule; (d) include a road closure management plan, prepared in consultation with the applicable roads authority, that includes provisions for: • minimising the duration of closures, both on a per event basis and weekly basis; • avoiding peak traffic periods as far as practicable; and • coordinating with neighbouring mines to minimise the cumulative effect of road closures; and (e) include a blast monitoring program for evaluating blast-related impacts (including blast-induced seismic activity) on, and demonstrating compliance with the blasting criteria in this approval for: • privately-owned residences and structures; • items of Aboriginal (including scarred trees and axe grinding grooves) and nonindigenous cultural heritage significance (including Edinglassie, Rous Lench and Balmoral); and • publicly-owned infrastructure;	• Blast Management Plan MAC-ENC-MTP-015 • Blast Management Plan • MAC-ENC-MTP-015 2011 • Letter to DP&I re Blast Management Plan, 30 Mar 2011 • Road Closure Management Plan, MA-ENC-MTP-024 • Blast Monitoring program, MAC-ENC-PRO-055	C	A Blast Management Plan was prepared to satisfy the Project Approval Schedule 3 condition 17: (a) The Blast Management Plan was prepared in consultation with DP&I and OEH, and submitted to the Director-General for approval on 30 March 2011 (b) Section 2 Blast Mitigation Measures (c) Section 3.2 Consultation with Neighbouring Residents (d) Section 2.4 Management of Road Closures and Road Closure Management Plan (e) Section 5 Monitoring Program and Blast Monitoring Program Table 4
AIR QUALITY AND GREENHOUSE GAS				
Odour				
3/18	The Proponent shall ensure that no offensive odours are emitted from the site, as defined under the POEO Act.	Air Quality Management Plan MAC-ENC-MTP-040	Noted	The Mt Arthur Coal operations are managed in accordance with control strategies outlined in environmental management plans. Mt Arthur Coal received one complaint in 2011 and two

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td></td><td></td><td></td><td>complaints in 2010, related to spontaneous combustion odour:
29 December 2011 - a Roxburgh Road resident registered a complaint regarding odour from spontaneous combustion.</td></tr>
<tr><td colspan="5">Greenhouse Gas Emissions</td></tr>
<tr><td>3/19</td><td>The Proponent shall implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site to the satisfaction of the Director-General.</td><td>Greenhouse Gas and Energy Efficiency Management Plan, Mt Arthur Mine Site,</td><td>C</td><td>Mt Arthur Coal has a Greenhouse Gas and Energy Efficiency Management Plan. The plan outlines significant actions to reduce greenhouse gas emissions and increase energy efficiency. These appear to be reasonable and feasible.</td></tr>
<tr><td colspan="5">Impact Assessment Criteria</td></tr>
<tr><td>3/20</td><td>The Proponent shall ensure that the dust emissions generated by the Mt Arthur mine complex do not cause additional exceedances of the air quality impact assessment criteria listed in Tables 9, 10 and 11 at any residence on privately owned land, or on more than 25% of any privately owned land, except where such exceedance is predicted in the EA. For these properties, the Proponent shall comply with the air quality predictions in the EA.
Table 9: Long term impact assessment criteria for particulate matter
<table>
<tr><th>Pollutant</th><th>Averaging Period</th><th>Criterion</th></tr>
<tr><td>Total Suspended Particulate (TSP) matter</td><td>Annual</td><td>90 µg/m^3</td></tr>
<tr><td>Particulate Matter <10µm (PM_{10})</td><td>Annual</td><td>30 µg/m^3</td></tr>
</table>
Table 6: Short term criterion for particulate matter
<table>
<tr><th>Pollutant</th><th>Averaging Period</th><th>Criterion</th></tr>
<tr><td>Particulate Matter <10µm (PM_{10})</td><td>24 hour</td><td>50 µg/m^3</td></tr>
</table>
Table 7: Long term criteria for deposited dust
<table>
<tr><th>Pollutant</th><th>Averaging Period</th><th>Max increase in DD level</th><th>Max total DD level</th></tr>
<tr><td>Deposited Dust</td><td>Annual</td><td>2g/m^2/mth</td><td>4g/m^2/mth</td></tr>
</table>
Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003:</td><td>Air Quality Management Plan MAC-ENC-MTP-040
Air Quality Monitoring Program, MAC-ENC-PRO-057</td><td>C</td><td>Total Suspended Particulate (TSP) matter -
The Mt Arthur Coal ambient PM_{10} monitoring network does not include TSP monitoring, but compliance with this condition is assessed using PM_{10} data, adjusted to reflect the likely TSP level. Based on extensive monitoring since the 1980's it has been established that typically, PM_{10} dust levels are approximately 40% of the TSP dust levels. Therefore, TSP results can be inferred from the annual average PM_{10} results, multiplied by 2.4.
No annual PM_{10} results were recorded above the long term or short term criteria so it follows that no annual result above the criterion for TSP would have occurred.
Particulate Matter <10µm (PM_{10})
The Mt Arthur Coal assessment concluded that the Mt Arthur Coal contributed level may have been up to 23µg/m^3. This is consistent with the assessment conducted during this audit, however two other downwind monitors recorded results equal to or lower than the upwind data indicating that MAC did not have any significant contribution at two similar downwind locations. Therefore it is not clear that MAC had a significant impact this day. The compliance assessment for potential exceedances of PM_{10} criteria conducted by MAC is accurate and consistent with the assessment I conducted of the same events. No significant issue has been found with the MAC conclusions.
Deposited Dust -
The relevant annual average data are below the annual average criterion level of 4 g/m^2/month, at all locations monitored except DD16, which is used for dust management control purposes by the mine and is not a residential sensitive receptor location for compliance assessment.
It can be concluded that the dust levels in the area comply with the required criteria for total cumulative deposited dust of 4</td></tr>
</table>

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.</td><td></td><td></td><td>g/m^2/month, annual average. It is beyond the scope of this assessment to analyse whether the mine only incremental criterion of 2 g/m^2/month, annual average is met.</td></tr>
<tr><td></td><td>Land Acquisition Criteria</td><td></td><td></td><td></td></tr>
<tr><td>3/21</td><td>If the dust emissions generated by the Mt Arthur mine complex exceed the criteria in Tables 12, 13, and 14 at any residence on privately owned land, or on more than 25 percent of any privately owned land, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 7-8 of schedule 4.
Table 12: Long term land acquisition criteria for particulate matter
<table>
<tr><th>Pollutant</th><th>Averaging Period</th><th>Criterion</th><th>Basis</th></tr>
<tr><td>Total Suspended Particulate (TSP)</td><td>Annual</td><td>90 µg/m^3</td><td>Total</td></tr>
<tr><td>Particulate Matter <10µm (PM$_{10}$)</td><td>Annual</td><td>30 µg/m^3</td><td>Total</td></tr>
</table>
Table 13: Short term criterion for particulate matter
<table>
<tr><th>Pollutant</th><th>Averaging Period</th><th>Criterion</th><th>Basis</th></tr>
<tr><td>Particulate Matter <10µm (PM$_{10}$)</td><td>24 hour</td><td>150 µg/m^3</td><td>Total</td></tr>
<tr><td>Particulate Matter <10µm (PM$_{10}$)</td><td>24 hour</td><td>50 µg/m^3</td><td>Incremental</td></tr>
</table>
Table 14: Long term criteria for deposited dust
<table>
<tr><th>Pollutant</th><th>Averaging Period</th><th>Max increase in DD level</th><th>Max total DD level</th></tr>
<tr><td>Deposited Dust</td><td>Annual</td><td>2g/m^2/mth</td><td>4g/m^2/mth</td></tr>
</table>
Total is Background concentrations due to all other sources plus the incremental increase in concentrations due to the mine complex alone.
Incremental is increase in concentrations due to the mine complex alone.</td><td></td><td>Not triggered</td><td>No written requests have been received by Mt Arthur Coal for acquisition of land affected by dust emissions from the mine operations.
Compliance with the condition 21 is summarised below:
<table>
<tr><th>Parameter</th><th>MAC level (highest measured)</th><th>Criteria</th></tr>
<tr><td>TSP</td><td>50.4 µg/m^3 (DF08) [A]</td><td>90 µg/m^3 annual</td></tr>
<tr><td>PM$_{10}$</td><td>21 µg/m^3 (DF08)</td><td>30 µg/m^3 annual</td></tr>
<tr><td>PM$_{10}$</td><td>105 µg/m^3 24-hr, 100th%ile</td><td>150 µg/m^3 24-hr, 99th%ile</td></tr>
<tr><td>PM$_{10}$</td><td>51.2 µg/m^3 24-hr, 98.6th%ile (DC02) [B]</td><td>50 µg/m^3 24-hr, 98.6th%ile</td></tr>
<tr><td>Deposited Dust</td><td>3.5 g/m^2/month annual (DD02)
5.1 g/m^2/month annual (DD16)[C]</td><td>4 g/m^2/month annual</td></tr>
</table>
[A] Inferred from PM$_{10}$ result.
[B] The reported value is the total cumulative level, not the mine only increment to which the criterion applies. The mine only increment will be below 50 µg/m^3.
[C] DD16 is used for management purposes only and is not a receptor location. The next highest measurement is below criteria.</td></tr>
</table>

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>Based on the number of block 24 hour averages in an annual period.
Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Director-General in consultation with DECCW.
Note: 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.</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Additional Air Quality Mitigation Measures</td><td></td><td></td><td></td></tr>
<tr><td>3/22</td><td>Upon receiving a written request from the owner of any residences:
(a) on the air quality affected land listed in Table 1;
(b) on the land listed in Table 15; and
(c) on any other privately-owned land where subsequent air quality monitoring shows the dust generated by the Mt Arthur mine complex exceeds the air quality limits in Tables 9, 10 or 11, the Proponent shall implement reasonable dust mitigation measures (such as a first-flush roof system, internal or external air filters and/or air conditioning) at the residence in consultation with the owner.
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 Director-General for resolution.
Table 15: Land subject to additional air quality mitigation upon request
<table>
<tr><th>Receiver No.</th><th>Receiver</th></tr>
<tr><td>91</td><td>Doherty</td></tr>
<tr><td>94</td><td>Skinner</td></tr>
<tr><td>187</td><td>Duncan</td></tr>
<tr><td>200</td><td>Walsh</td></tr>
<tr><td>201</td><td>Denton</td></tr>
<tr><td>205</td><td>Lambkin</td></tr>
</table>
Note: To interpret the locations referred to in Table 15, see the applicable figure in Appendix 5.</td><td>Mt Arthur Coal Community Consultation Correspondence with Stakeholders</td><td>Not triggered</td><td>No written requests were received by Mt Arthur Coal in relation to implementation of additional dust mitigation measures.

One receiver has had air quality mitigation measures installed, and Mt Arthur Coal is negotiating agreements with other stakeholders for mitigation.</td></tr>
</table>

Sched/ No.	Condition	Verification	Compliance	Comments
	Operating Conditions			
23	The Proponent shall: (a) implement best practice air quality management, including all reasonable and feasible measures to minimise offsite odour, fume and dust emissions of the Mt Arthur mine complex; (b) ensure that the real-time air quality monitoring and meteorological forecasting data are assessed regularly, and that mining operations are relocated, modified and/or suspended to ensure compliance with the relevant conditions of this approval; (c) ensure any visible air pollution generated by the Mt Arthur mine complex is assessed regularly, and that operations are relocated, modified, and/or suspended to minimise air quality impacts on privately-owned land; and (d) implement all reasonable and feasible measures to minimise off-site odour and fume emissions generated by the Mt Arthur mine complex, including those generated by any spontaneous combustion, to the satisfaction of the Director-General.	• Air Quality Management Plan MAC-ENC-MTP-040 • Air Quality Monitoring Program MAC-ENC-PRO-057 • 2010 AEMR section 3.10 Spontaneous Combustion	C Ongoing	The Air Quality Management Plan (AQMP) and Air Quality Monitoring Program (AQMProg) include: (a) AQMP Section 3 Control Measures address odour, dust emissions and fume management; (b) AQMProg section5.1.1 and 5.2.1 outlines real time air quality monitoring data assessment and section 3.4 addresses meteorological monitoring for management of mine operations; (c) Assessment of monitoring data and visual assessment of dust generation via a live video setup on Mt Arthur, is used to manage mining activities to minimise dust emissions from the site; (d) Areas of spontaneous combustion in overburden waste emplacement are managed via covering of the affected areas with unreactive overburden to reduce combustion and the potential for odour generation.
	Air Quality and Greenhouse Gas Management Plan			
3/24	The Proponent shall prepare and implement an Air Quality and Greenhouse Gas Management Plan for the Mt Arthur mine complex to the satisfaction of the Director-General. This plan must: (a) be prepared in consultation with DECCW, and be submitted to the Director-General for approval by the end of March 2011; (b) describe the air quality mitigation measures that would be implemented to ensure compliance with the relevant conditions of this approval, including a real-time air quality management system; and (c) include an air quality monitoring program, that uses a combination of real-time monitors, high volume samplers and dust deposition gauges to evaluate the performance of the Mt Arthur mine complex, and includes a protocol for determining exceedances of the relevant conditions in this approval.	• Dust Management Plan MAC-ENC-MTP-025 • Air Quality Management Plan (draft) MAC-ENC-MTP-040 • Air Quality Monitoring Program, MACENC-PRO-057	C	The Air Quality Management Plan prepared to satisfy the requirements of Project Approval Schedule 3 condition 24 and was submitted to DP&I on 30 March 2011. DP&I approved the Air Quality Management Plan in 6 June 2012: (a) consultation occurred with OEH (DECCW), NSW Department of Primary Industries (DPI) and Muswellbrook Shire Council (MSC). (b) Section 3 Control Measures (c) Section 3.2 Monitoring Program Greenhouse Gas Management is included in the Air Quality Management Plan in section 3.4.
	METEOROLOGICAL MONITORING			

Sched/ No.	Condition	Verification	Compliance	Comments
3/25	During the life of the project, the Proponent shall ensure that there is a suitable 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; (b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the *NSW Industrial Noise Policy*.	• 2010 AEMR section 3.4 Weather • 2010 AEMR, Figures 13-16	C	Areal time meteorological station monitoring wind speed and direction, temperature, rainfall, solar radiation and humidity is located at the Mt Arthur Coal Industrial area, and provides continuous 10-minute interval readings that are that are relayed back to the Envirosys environmental monitoring and data management system.
	SOIL AND WATER			
	Water Supply			
3/26	The Proponent shall ensure that it has sufficient water for all stages of the project, and if necessary, adjust the scale of mining operations to match its available water supply, to the satisfaction of the Director-General. *Note: The Proponent is required to obtain all necessary water licences and approvals for the project under the Water Act 1912 and/or Water Management Act 2000.*	• Site Water Balance MAC-ENC-PRO-059	C	Refer to comments in section 5.8.1 Site Water Balance Schedule 3 condition 30(b).
	Discharge Limits			
3/27	The Proponent shall not discharge any water from the site except as may be expressly provided by an EPL, or in accordance with section 120 of the *Protection of the Environment Operations Act 1997*.	• Letter to OEH re FY11 Hunter River Salinity Trading Scheme Report, 22 Sep 2011 • Annual FY11 Hunter River Salinity Trading Scheme Report – Discharge Record Worksheet EPL 11457	C	During 2010 no discharge of water by Mt Arthur Coal occurred from the licensed discharge point under the HRTS and EPL. The Annual Hunter River Salinity Trading Scheme Report (as required under EPL condition R5.1 was prepared and submitted to the OEH Environment Protection and Regulation Division for the 1 July to 30 June annual reporting period.
	Hunter River and Saddlers Creek Alluvials			
3/28	The Proponent shall not undertake any open cut mining operations within 150 metres of the Hunter River alluvial and Saddlers Creek alluvial that has not been granted approval under previous consents/approvals for Mt Arthur mine complex without the prior written approval of the Director-General. In seeking this approval the Proponent shall demonstrate, to the satisfaction of the Director-General in consultation with NOW, that adequate safeguards have been incorporated into the Surface and Ground Water Response Plan (see condition 34 below) to minimise, prevent or offset groundwater leakage from the	• 2010 AEMR section 3.13 Water	Not triggered	No open cut mining operations have occurred within 150m of the Hunter River alluvials or Saddlers Creek alluvials at the time of this audit.

Sched/ No.	Condition	Verification	Compliance	Comments
	alluvial aquifers. *Note: The alluvial aquifers and 150 metre buffers are shown conceptually on the figure in Appendix 7.*			
	Site Water Management Plan			
3/29	The Proponent shall prepare and implement a Water Management Plan for the Mt Arthur mine complex to the satisfaction of the Director-General. This plan must: (a) be prepared in consultation with NOW and DECCW, and be submitted to the Director-General for approval by the end of March 2011; and (b) include a: • Site Water Balance; • Erosion and Sediment Control Plan; • Surface Water Monitoring Program; • Groundwater Monitoring Program; and • Surface and Ground Water Response Plan.	• Site Water Management Plan, MAC-ENC-MTP-034 • Site Water Balance, MAC-ENC-PRO-059 • Erosion and Sediment Control Plan, MAC-ENC-PRO-060 • Surface Water Monitoring Program, MAC-ENC-PRO-061 • Groundwater Monitoring Program, MAC-ENC-PRO-062 • Surface and Ground Water Response Plan, MAC-ENC-PRO-063	C	The Site Water Management Plan prepared to satisfy the Project Approval Schedule 3 condition 29 and was submitted to DP&I on 30 March 2011. DP&I approved the Site Water Management Plan on 23 August 2012: (a) The Water Management Plan was prepared in consultation with DECCW, NSW Office of Water (NOW) and the Director-General (b) The Site Water Management Plan includes as separate documents: • Site Water Balance • Erosion and Sediment Control Plan • Surface Water Monitoring Program • Groundwater Monitoring Program • Surface and Ground Water Response Plan
3/31	The Erosion and Sediment Control Plan must: (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004* (Landcom); (b) identify activities that could cause soil erosion, generate sediment or affect flooding; (c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, and manage flood risk; (d) describe the location, function, and capacity of erosion and sediment control structures and flood management structures; and (e) describe what measures would be implemented to maintain the structures over time.	• *Managing Urban Stormwater: Soils and Construction, Volume 1* Landcom *2004* • *Managing Urban Stormwater: Soils and Construction, Volume 2E Mines and Quarries,* DECC 2008 • Erosion and Sediment Control Plan, MAC-ENC-PRO-060	C	The Erosion and Sediment Control Plan to satisfy Project Approval Schedule 3 condition 31 was prepared and submitted to DP&I in 2011. DP&I approved the Erosion and Sediment Control Plan on 20 August 2012: (a) Refer to comments in section 5.4.3 - Erosion and Sediment Control Table 5.4.3 of this report. (b) Section 3.1 Sources of Erosion and section 3.4 Flooding. There is a basic description of the proposed flood levy. (c) Section 3 Control Measures - There is discussion of sediment control measures in section 3.2 but no detail of what type of sediment dam they are (Type C, D or F). (d) Section 4 Sediment Control Structures **- P**rimary erosion control measures proposed for the Mt Arthur Coal operations include upslope diversion banks and downslope collection drains. There is a basic description of the proposed flood levy. (e) Section 3.3 Maintenance of Erosion and Sediment Control Structures and section 3.4 Flooding. S.3.3 of the ESCP discusses sediment control measures.
3/32	The Surface Water Monitoring Program must include:	• Surface Water Monitoring Program,	C	The Surface Water Monitoring Program to satisfy Project

Sched/ No.	Condition	Verification	Compliance	Comments
	(a) detailed baseline data on surface water flows and quality in creeks and other water bodies that could potentially be affected by the project; (b) surface water and stream health impact assessment criteria; (c) a program to monitor and assess: • surface water flows and quality; • impacts on water users; • stream health; • channel stability, in Quarry Creek, Fairford Creek, Whites Creek (and the Whites Creek diversion), Saddlers Creek, Ramrod Creek and other unnamed creeks; and (d) reporting procedures for the results of the monitoring program.	MAC-ENC-PRO-061 • Communication and Reporting *MAC-ENC-PRO-008* and Community and Environmental Incident Response and Reporting MAC-ENC-PRO-042		Approval Schedule 3 condition 32 was prepared and submitted to DP&I in 2011. DP&I approved the Surface Water Monitoring Program on 20 August 2012. The Surface Water Monitoring Program includes: (a) section 4 Baseline Surface Water Data and Table 3; (b) Section 5 Impact Assessment Criteria (c) Section 6 Monitoring Methodology (d) Water monitoring reporting occurs in accordance with the requirements of the Project Approval and the EPL conditions and provides stakeholder access to relevant water quality information and data. Reporting is undertaken in accordance with *Communication and Reporting* and *MAC-ENC-PRO-042 Community and Environmental Incident Response and Reporting*.
3/33	The Groundwater Monitoring Program must include: (a) detailed baseline data of groundwater levels, yield and quality in the region, and privately-owned groundwater bores, that could be affected by the project; (b) groundwater impact assessment criteria; (c) a program to monitor: • groundwater inflows to the mining operations; • impacts on regional aquifers; • impacts on the groundwater supply of potentially affected landowners; • impacts on the Hunter River and Saddlers Creek alluvial aquifers; and • impacts on any groundwater dependent ecosystems and riparian vegetation; (d) procedures for the verification of the groundwater model; and (e) reporting procedures for the results of the monitoring program and model verification.	• Groundwater Monitoring Program, MAC-ENC-PRO-062 • Community and Environmental Incident Response and Reporting MAC-ENC-PRO-042	C	The Groundwater Monitoring Program to satisfy Project Approval Schedule 3 condition 33 was prepared and submitted to DP&I in 2011. DP&I approved the Groundwater Monitoring Program on 20 August 2012. The Groundwater Monitoring Program includes: (a) Section 4 Baseline Groundwater Data and Table 1; (b) Section 5 Impact Assessment Criteria (c) Section 6 Groundwater Monitoring Methodology (d) Section 8 Groundwater Prediction Validation Process (e) Groundwater monitoring reporting occurs in accordance with the requirements of the Project Approval and the EPL conditions and provides stakeholder access to relevant water quality information and data. Reporting is undertaken in accordance with Community and Environmental Incident Response and Reporting MAC-ENC-PRO-042.
3/34	The Surface and Ground Water Response Plan must describe the measures and/or procedures that would be implemented to: (a) investigate, notify and mitigate any exceedances of the surface water, stream health and groundwater impact assessment criteria; (b) compensate landowners of privately-owned land whose	• Surface and Ground Water Response Plan, MAC-ENC-PRO-063	C	The Surface and Ground Water Response Plan to satisfy Project Approval Schedule 3 condition 31 was prepared and submitted to DP&I in 2011. DP&I approved the Surface and Ground Water Response Plan on 20 August 2012. The Surface and Ground Water Response Plan includes: (a) Section 3 Surface Water Exceedence Protocol, section 7 Protocol for Stream Health, section 4

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>water supply is adversely affected by the project, including provision of an alternative supply of water to the affected landowner that is equivalent to the loss attributed to the project;
(c) minimise, prevent or offset potential groundwater leakage from the Hunter River and Saddlers Creek alluvial aquifers; and
(d) mitigate and/or offset any adverse impacts on groundwater dependent ecosystems or riparian vegetation.</td><td></td><td></td><td>Groundwater Exceedence Protocol, and the Groundwater Monitoring Program Section 5 Impact Assessment Criteria;
(b) Section 5 Protocol for Adverse Effects to Nearby Users
(c) Section 6 Measures for Groundwater Leakage from Alluvial Aquifers
(d) Section 7 Protocol for Stream Health</td></tr>
<tr><td></td><td>Site Contamination</td><td></td><td></td><td></td></tr>
<tr><td>3/35</td><td>The Proponent shall prepare and implement a Remedial Action Plan for the former Bayswater No. 2 infrastructure area to the satisfaction of the Director-General. The Remedial Action Plan shall be prepared by a suitably qualified consultant, in accordance with the Contaminated Land Management Act 1997 and applicable DECCW guidelines, and be submitted to the Director-General for approval prior to undertaking any overburden placement in this area.</td><td></td><td>Not activated</td><td>No overburden has been placed at Bayswater 2 contaminated area during 2010-2011.</td></tr>
<tr><td></td><td>BIODIVERSITY</td><td></td><td></td><td></td></tr>
<tr><td></td><td>Biodiversity Offsets</td><td></td><td></td><td></td></tr>
<tr><td>3/36</td><td>The Proponent shall implement the biodiversity offset strategy as outlined in Table 16 and as generally described in the EA (and shown conceptually in Appendix 8), to the satisfaction of the Director-General.
Table 16: Biodiversity Offset Strategy
<table>
<tr><th>Area</th><th>Offset Type</th><th>Minimum Size (ha)</th></tr>
<tr><td>Mt Arthur Conservation Area</td><td>Existing vegetation</td><td>105</td></tr>
<tr><td>Saddlers Creek Conservation Area</td><td>Existing vegetation</td><td>295</td></tr>
<tr><td>Thomas Mitchell Drive Off-site Offset Area</td><td>Existing vegetation & vegetation to be established</td><td>495</td></tr>
<tr><td>Thomas Mitchell Drive On-site Offset Area</td><td>Vegetation to be Established</td><td>222</td></tr>
</table></td><td>• Mt Arthur Coal Consolidation Project Environmental Assessment, section 8.6, Nov 2009
• Biodiversity and Rehabilitation Management Plan (draft), Mar 2012</td><td>C</td><td>Mt Arthur Coal developed a Biodiversity Offset Strategy to mitigate and offset the ecological impacts arising from previous mining approvals. Mt Arthur Coal has established two Conservation Areas (the Mount Arthur Conservation Area and the Saddlers Creek Conservation Area) that have total area of approximately 395 hectares.

The Mt Arthur Coal Complex Offset Strategy provides for additional new offset areas (incorporating the additional areas outlined in Table 16 of the Project Approval) to mitigate impacts of the Project.

The Mt Arthur Coal Complex Offset Strategy has specifically been developed to integrate the newly proposed offset areas with local and regional corridors and existing Conservation Areas.</td></tr>
</table>

Sched/ No.	Condition	Verification	Compliance	Comments
	Roxburgh Road 'Constable' Offset Area — Existing vegetation & vegetation to be established — *110* Additional Off-site Offset Area — Existing vegetation & vegetation to be established — *165* Rehabilitation Area — Vegetation to be established — *1,915* **Total** — **3,307** *1 See condition 37.* *2 See condition 42(f).*			
3/37	By the end of September 2012, unless otherwise agreed by the Director-General, the Proponent shall revise the offset strategy to identify the Additional Off-site Offset Area presented in Table 16 above. The revised strategy shall be prepared in consultation with DECCW, and to the satisfaction of the Director-General. *Note: The 165 hectare size for the Additional Off-site Offset Area identified in Table 16 above is to be taken as a minimum only. The actual size of the offset shall be determined in consultation with DECCW and, together with the other offset areas listed in Table 16, shall fully offset the biodiversity impacts of the project.*	• Biodiversity and Rehabilitation Management Plan (draft), Mar 2012	In progress	The draft Biodiversity and Rehabilitation Management Plan was prepared by Mt Arthur Coal in March 2012 and submitted to the relevant agencies for approval. The draft Biodiversity and Rehabilitation Management Plan includes the additional offset areas presented in Table 16 of the Project Approval Schedule 3 condition 3 7. Mt Arthur Coal had not received approval for the Biodiversity and Rehabilitation Management Plan from DP&I at the date of this audit. The requirement for approval of the documentation under this condition is not due until end of September 2012.
3/38	The Proponent shall ensure that the offset strategy and/or rehabilitation strategy is focused on the reestablishment of: (a) significant and/or threatened plant communities, including: • Upper Hunter White Box – Ironbark Grassy Woodland; • Central Hunter Box – Ironbark Woodland; • Central Hunter Ironbark – Spotted Grey-Gum Box Forest; • Narrabeen Footslopes Slaty Box Woodland; • Hunter Floodplain Red Gum Woodland Complex; and (b) significant and/or threatened plant species, including: • Lobed Blue-grass *(Bothriochloa biloba)*; • Tiger Orchid *(Cymbidium canaliculatum)*; • Weeping Myall (*Acacia pendula*); and		Noted	See above

Sched/ No.	Condition	Verification	Compliance	Comments
	(c) habitat for significant and/or threatened animal species.			
	Long Term Security of Offsets			
3/39	The Proponent shall make suitable arrangements to provide appropriate long term security for the: (a) Mt Arthur Conservation Area, Saddlers Creek Conservation Area and Thomas Mitchell Drive Off-site and On-site Offset Areas, by the end of September 2012; (b) Additional Off-site Offset Area, by the end of September 2014; and (c) woody vegetation to be established in the Rehabilitation Area, at least 2 years prior to the completion of mining activities associated with the project, to the satisfaction of the Director-General.		Not yet triggered	The requirements of this condition are not due until September 2012 (condition 39(a), September 2014 (condition 39(b).
	Biodiversity Management Plan			
3/40	The Proponent shall prepare and implement a Biodiversity Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be prepared in consultation with DECCW, NOW and Council, and be submitted to the Director-General for approval by the end of March 2012; (b) describe how the implementation of the offset strategy would be integrated with the overall rehabilitation of the site (see below); (c) include: (i) a description of the short, medium, and long term measures that would be implemented to: • implement the offset strategy; and • manage the remnant vegetation and habitat on the site and in the offset areas; (ii) detailed performance and completion criteria for the implementation of the offset strategy; (iii) a detailed description of the measures that would be implemented over the next 3 years, including the procedures to be implemented for: • implementing revegetation and regeneration within the disturbance areas and offset • areas, including establishment of canopy, sub-canopy (if relevant), understorey and • ground strata;	• Scope of Works for Development of Biodiversity and Rehabilitation Management Plan, dated 18 Oct 2011 • Biodiversity and Rehabilitation Management Plan (draft), Mar 2012	C	(a) A draft Biodiversity Management Plan has been prepared in consultation with DECCW, NOW and Council, and was submitted to the Director-General for approval by the end of March 2012. Mt Arthur Coal had not received notification of approval of the Biodiversity Management Plan at the date of the audit.

Sched/ No.	Condition	Verification	Compliance	Comments
	• protecting vegetation and soil outside the disturbance areas; • rehabilitating creeks and drainage lines on the site (both inside and outside the • disturbance areas), to ensure no net loss of stream length and aquatic habitat; • managing salinity; • conserving and reusing topsoil; • undertaking pre-clearance surveys; • managing impacts on fauna; • landscaping the site and along public roads (including Thomas Mitchell Drive, • Denman Road, Edderton Road and Roxburgh Road) to minimise visual and lighting • impacts; • collecting and propagating seed; • salvaging and reusing material from the site for habitat enhancement; • salvaging, transplanting and/or propagating threatened flora and native grassland; • controlling weeds and feral pests; • managing grazing and agriculture on site; • controlling access; and • bushfire management; (iv) a program to monitor the effectiveness of these measures, and progress against the performance and completion criteria; (v) a description of the potential risks to successful revegetation, and a description of the contingency measures that would be implemented to mitigate these risks; and (vi) details of who would be responsible for monitoring, reviewing, and implementing the plan.			
	Conservation Bond			
3/41	Within 6 months of the approval of the Biodiversity Management Plan (see condition 40), the Proponent shall lodge a conservation and biodiversity bond with the Department to ensure that the 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 offset		Not yet activated	

Sched/ No.	Condition	Verification	Compliance	Comments
	strategy; and (b) employing a suitably qualified quantity surveyor to verify the calculated costs, to the satisfaction of the Director-General. *Notes:* • *If the offset strategy is completed to the satisfaction of the Director-General, the Director-General will release the conservation bond.* • *If the offset strategy is not completed to the satisfaction of the Director-General, the Director-General will call in all or part of the conservation bond, and arrange for the satisfactory completion of the relevant works.* • *The conservation bond does not apply to areas subject to equivalent bonding arrangements under the Mining Act 1992. If amendments to the Mining Act allow the Minister for Mineral Resources to require rehabilitation securities under a Mining Lease which apply to the implementation of rehabilitation works outside the boundary of a Mining Lease, the Proponent may transfer the conservation bond required under this approval to the Minister of Mineral Resources provided the Director-General and I&I NSW agree to the transfer.*			
	REHABILITATION			
	Rehabilitation Strategy			
3/42	The Proponent shall prepare a Rehabilitation Strategy for the project to the satisfaction of the Director-General. This strategy must: (a) be prepared by a team of suitably qualified and experienced persons whose appointment has been endorsed by the Director-General, and be submitted to the Director-General for approval by the end of September 2011; (b) be prepared in consultation with relevant stakeholders, including I&I NSW, Council and the CCC; (c) investigate options for the future use of disturbed areas including voids upon the completion of mining; (d) describe and justify the proposed rehabilitation strategy for the site, including the final landform and use; (e) define the rehabilitation objectives for the site, as well as	• Rehabilitation Strategy MAC-ENC-MTP-034 • Letter from DP&I re Approval of Rehabilitation Strategy Team, 1 Sep 2011	C	A Rehabilitation Strategy has been prepared to satisfy the requirements of Project Approval (granted on 24 September 2010) and was submitted to DP&I on 30 March 2011 and approved by DP&I on 21 September 2011. Refer also to section 5.4.8 of this audit report: (a) The Rehabilitation Strategy was prepared by the approved Rehabilitation Strategy Team (Neil Nelson – Agvice), Mark Burns – GSS, Nicholas Bugosh - GeoFluv, Rod Eckels – Landforma) approved by DP&I on 1 September 2011 (b) Section 2 Consultation with Stakeholders including DI&I, Muswellbrook Shire Council and the CCC (c) Section 3 Proposed Future Use of Disturbed Areas - S.3.0 of the Rehabilitation Strategy discusses post mine land-use does not investigate options for future use of disturbed areas. The key statements pertaining to Post Mining Land

Sched/ No.	Condition	Verification	Compliance	Comments
	the proposed completion criteria for this rehabilitation; and (f) provide for at least 30% of the disturbance area for open cut operations at the Mt Arthur mine complex to be rehabilitated to woody vegetation. *Note: The strategy should build on the concept strategy depicted in Appendix 8.*			Use are: • (Section 8.15.3) the final land uses of the rehabilitated site will include pastoral, recreation and/or wildlife habitat opportunities with due consideration to visual amenity aligned to the surrounding landscapes'. • S. 3.3, p12, paragraph 1 'Post mining the final voids will be utilised for water storage, with their locations and respective catchment boundaries within the conceptual final landform shown in Figure 3. Alternate uses for the voids may be considered as part of the Final Void Management Plan'. • S. 3.4, p 12, paragraph 1 'All surface infrastructures at the Mt Arthur Coal Complex where a post mining use cannot be identified will be removed from site (Section 8 of the EA). Consequently, resulting disturbed areas will generally be revegetated using the techniques discussed in Section 4.5.' • S.3.5, p13, paragraph 5 'In terms of future use, these areas will be protected from incompatible land use activities such as overgrazing which may damage their integrity.' (d) Section 4 Key Steps within the Rehabilitation Strategy - The rehabilitation strategy is broadly described in section 3 of the Rehabilitation Strategy. (e) Section 5 Completion Criteria - Rehabilitation objectives are defined in Table 1. Various completion criteria are also nominated in Table 1: • *'Stable and permanent, drainage and benching, batter slopes developed using a mix of existing methodologies and industry practice'* • *'Closure criteria and proposed final landuse are developed through stakeholder consultation'* • *'Slope angles and lengths are compatible with regulatory requirements'* • *'Consistency of final land use with surrounding land uses'* Ongoing management requirements – Mt Arthur Coal commits to rehabilitation of at least 30% of the disturbance to woody vegetation in section1.2 of the Rehabilitation Strategy.
	Progressive Rehabilitation			

Sched/ No.	Condition	Verification	Compliance	Comments
3/43	The Proponent shall: (a) carry out rehabilitation progressively, that is, as soon as reasonably practicable following disturbance (particularly on the face of emplacements that are visible off-site); and (b) achieve the rehabilitation objectives in the Rehabilitation Strategy (see condition 42), to the satisfaction of the Director-General of I&I NSW.	• 2010 AEMR section 3.9 Rehabilitation and Tailings	C	(a) Progressive rehabilitation was observed being undertaken on site during the audit inspection including the VD1 spoil emplacement that is visible off site (refer to comments in Section 5.9 of this audit). (b) Assessment of the achievement of the rehabilitation objectives provided in the Rehabilitation Strategy requires measureable closure criteria. Mt Arthur Coal has yet to develop measureable closure criteria to undertake an assessment of rehabilitation performance against measureable closure criteria.
	Rehabilitation Management Plan			
3/44	The Proponent shall prepare and implement a Rehabilitation Management Plan for the project to the satisfaction of the Director-General of I&I NSW. This plan must: (a) be prepared in consultation with the Department, DECCW, NOW, Council and the CCC, and be submitted to the Director-General of I&I NSW for approval by the end of March 2012; (b) be prepared in accordance with the relevant I&I NSW guideline, and be consistent with the Rehabilitation Strategy (see condition 42); (c) build, to the maximum extent practicable, on the existing management plans required under this approval; and (d) include a research program that seeks to improve the understanding and application of rehabilitation techniques and methods in the Hunter Valley.	• Rehabilitation Strategy MAC-ENC-MTP-034	In progress	The Rehabilitation Management Plan was being prepared and was due for submission to the Director-General of DI&I on 30 March 2012.
	HERITAGE			
	Heritage Management Plan			
3/45	The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be prepared in consultation with DECCW, the Aboriginal community, the Heritage Branch, Council, local historical organisations and relevant landowners, and be submitted to the Director-General for approval by the end of March 2011; (b) include the following for the management of Aboriginal heritage on site: • a plan of management for the Thomas Mitchell Drive Offset Area; and	• *Aboriginal Cultural Heritage Consultation Requirements for Proponents, 2010*. • Macleans Hill Heritage Management Plan MAC-ENC-MTP-018, February 2011 • European Heritage Management Plan MAC-ENC-MTP-018, Mar	C	The ***Heritage Management Plan*** requirements have been developed within a ***European Heritage Management Plan*** and ***Aboriginal Heritage Management Plan***, prepared to satisfy the requirements of Project Approval. The draft Plans were submitted to DP&I on 30 March 2011. The Aboriginal Heritage Management Plan was approved by DP&I on 20 August 2012 and the European Heritage Management Plan approved on 18 September 2012: ***Aboriginal Heritage Management Plan***: (a) OEH and Aboriginal community representatives were consulted during the development of this

Sched/ No.	Condition	Verification	Compliance	Comments
	• a program/procedures for: o salvage, excavation and/or management of Aboriginal sites and potential archaeological deposits within the project disturbance area; o protection and monitoring of Aboriginal sites outside the project disturbance area, including the 10 scarred trees and 3 axe grinding grooves identified on the site; o managing the discovery of any new Aboriginal objects or skeletal remains during the project; o maintaining and managing access to archaeological sites by the Aboriginal community; and o ongoing consultation and involvement of the Aboriginal communities in the conservation and management of Aboriginal cultural heritage on the site; and (c) include the following for the management of other historic heritage on site: • conservation management plans for the Edinglassie and Rous Lench homesteads; • a detailed plan for the relocation of the Beer Homestead, including provision for a landscape study to determine the most appropriate location and an architectural report to determine the most sympathetic method for relocation; and • a program/procedures for: o photographic and archival recording of potentially affected heritage items; o protection and monitoring of heritage items outside the project disturbance area; o monitoring, notifying and managing the effects of blasting on potentially affected heritage items; and o additional archaeological excavation and/or recording of any significant heritage items requiring demolition.	2011 • Aboriginal Heritage Management Plan MAC-ENC-MTP-042, Mar 2011		Management Plan in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents, 2010*. (b) Section 5.1 Thomas Mitchell Drive Offset Area (TMDOA) and 5.2 Monitoring of Significant Archaeological Sites (c) Not applicable to Aboriginal heritage ***European Heritage Management Plan***: (a) This EHMP has been prepared in consultation with the Heritage Branch of NSW Department of Planning, local historical organizations, relevant landowners, Muswellbrook Shire Council MSC) and DoP. (b) Not applicable to European heritage (c) Section 3 Mitigation Measures
	TRANSPORT			
	Monitoring of Coal Transport			
3/46	The Proponent shall keep records of the: (a) amount of coal transported from the site in each calendar year; (b) number of coal haulage train movements generated by the Mt Arthur mine complex (on a daily basis); and	• Rail Report Jan to Jun 2011 • Rail Report Jul to Dec 2011	C	Reports on train movements are maintained by Mt Arthur Coal and the results will be reported on the website at the end of each calendar year: **Year** | **Train Movements/day** | **Annual**

<table>
<tr><th>Sched/ No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>(c) make these records available on its website at the end of each calendar year.</td><td></td><td></td><td>
<table>
<tr><th></th><th>Min</th><th>Max</th><th>Tonnage</th></tr>
<tr><td>2011</td><td>2</td><td>20</td><td>14,399,924</td></tr>
<tr><td>2010</td><td>2</td><td>18</td><td>10,937,952</td></tr>
</table>
</td></tr>
<tr><td></td><td>Road Construction and Access</td><td></td><td></td><td></td></tr>
<tr><td>3/47</td><td>The Proponent shall:
(a) fund the upgrade of Thomas Mitchell Drive, as outlined 9 Mar 2011 the RTA's Review of Thomas Mitchell Drive Route Assessment (August 2010), in accordance with the terms of the planning agreement required in condition 14 of schedule 2;
(b) upgrade the Thomas Mitchell Drive/New England Highway intersection to the satisfaction of the applicable roads authority, by the end of June 2011 unless otherwise agreed by the roads authority;
(c) upgrade the Thomas Mitchell Drive/Denman Road intersection to the satisfaction of the applicable roads authority, by the end of December 2019 unless otherwise agreed by the roads authority;
(d) realign Edderton Road and its intersection with Denman Road prior to mining within 200 metres of the road, to the satisfaction of Council and the RTA; and
(e) maintain reasonable access to the summit of Mt Arthur for emergency services and legitimate users on a 24 hour per day basis, except for temporary closures as required for blasting.
The upgrades referred to in (b), (c) and (d) above may be satisfied through funding the required upgrades, subject to the agreement of the applicable roads authority, and subject to providing the funding such that the upgrades can be completed within the stated timeframe.
If there is any dispute between the Proponent and Council or the RTA in relation to the funding or completion of the upgrades, then any of the parties may refer the matter to the Director-General for resolution.</td><td>• Letter from RTA re New England Highway (HW9) – Thomas Mitchell Drive Intersection Upgrade,
• Letter to Planning re Upgrade of Thomas Mitchell Drive/New England Highway Intersection, 17 Mar 2011
• Site Notice 11330 Upgrade Works to Thomas Mitchell Drive, dated 22 Sep 2011</td><td>In progress</td><td>The RTA accepted the program for construction of the intersection upgrade of the New England Highway and Thomas Mitchell Drive and accepted the date of November 2012 for completion, stating that this date supersedes the date of June 2011 expressed in condition 47.

Mt Arthur Coal advised Planning of the revised date for completion of the intersection and provided a cop y of the program of works.

HVEC advised NSW Planning of geotechnical testing of pavement at the intersection of Thomas Mitchell Drive and the New England Highway between 26 and 30 September 2011.</td></tr>
<tr><td></td><td>Railway Crossing</td><td></td><td></td><td></td></tr>
</table>

Sched/ No.	Condition	Verification	Compliance	Comments
3/ 48	The Proponent shall implement all reasonable and feasible measures to minimise blocking the railway crossing on Antiene Railway Station Road, to the satisfaction of the D-G.	• Email from Hansen Bailey re Railway Crossing, 27 Jul 2011 • Antiene Rail Spur Land Ownership, Jul 2011	C	 ANTIENE RAIL SPUR JUNCTION LAND OWNERSHIP (July 2011) This condition was drafted to minimise impact to access to private land for residents. The figure above shows that there is only one privately owned block in this area. No complaints have been received over the last 4 years relating to this condition.
	VISUAL			
	Mining Operations Additional Visual Impact Mitigation			
3/49	Within 6 months of this approval, the Proponent shall prepare a report that: (a) identifies the privately-owned land that is likely to experience significant visual impacts during the project; and (b) describes (in general terms) the additional mitigation measures that could be implemented to reduce the visibility of the mine from these properties, to the satisfaction of the Director-General. *Notes:* • *The additional visual impact mitigation measures should be aimed at reducing the visibility of the mine from significantly affected residences or areas on privately-owned land subject to tourist and/or general public access, and do not necessarily require measures to reduce visibility of the mine from other locations on affected properties. The additional visual impact mitigation measures do not necessarily have to include measures on the affected property itself (i.e. the additional measures may consist of*	• Visual Impacts Management Report, AECOM, May 2011	**NC2**	A Visual Impacts Management Report was prepared by AECOM (dated May 2011) and provided to Mt Arthur Coal: (a) Privately owned land and sensitive receptors are discussed in the Visual Impacts Management report, section 04 and Figure 13, prepared by AECOM May 2011. (b) Mitigation measures that could be implemented to reduce the visibility of the mine from these properties are presented in in the Visual Impacts Management Report, section 03 Mitigation Options. Submission of the Visual Impacts Management Report was to the Director-General occurred after 6 months of the Project Approval (i.e. March 2011). (No response from DP&I had been received at the date of this audit).

Sched/ No.	Condition	Verification	Compliance	Comments
	measures outside the affected property boundary that provide an effective reduction in visual impacts). • *Except in exceptional circumstances, the Director-General will not require additional visual impact mitigation to be undertaken for residences that are more than 5 kilometres from the mining operations.*			
3/50	Within 3 months of the Director-General approving this report, the Proponent shall advise all owners of privately-owned land identified in the report that they are entitled to additional mitigation measures to reduce the visibility of the mine from their properties.	Mt Arthur Coal Correspondence Consultation Records with Stakeholders	Not yet activated	Owners of privately-owned land identified in the Visual Impacts Management Report as likely to experience significant visual impacts will be notified of their entitlement to additional mitigation measures to reduce the visibility of the mine from their properties within 3 months of the report being approved.
3/51	Upon receiving a written request from an owner of privately-owned land identified in this report, or upon receiving a direction from the Director-General regarding any other privately-owned land, the Proponent shall implement additional visual impact mitigation measures (such as landscaping treatments or vegetation screens) in consultation with the landowner, and to the satisfaction of the Director-General. These mitigation measures must be reasonable and feasible, and must be implemented within a reasonable timeframe. 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 Director-General for resolution.	Mt Arthur Coal Correspondence Consultation Records with Stakeholders	Noted	
	Visual Amenity and Lighting			
3/52	The Proponent shall: (a) implement all reasonable and feasible measures to mitigate visual and off-site lighting impacts of the project; (b) ensure no outdoor lights shine above the horizontal; and (c) ensure that all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting*, to the satisfaction of the Director-General.	• Email re MAC Lighting and AS4282, PACE Engineers, 11 Oct 2011 • Procedure For Lighting Plant Movement and Setup MAC-PRD-PRO-073 • Standard For Luminance From Electric Lighting MAC-ELC-STD-046 • Complaints Register, 2011	C	The PACE Review of AS 4282 concluded that: "AS 4282 has little to no relevance to a Coal mine such as Mt Arthur due to the geographical location of the fixed light sources and the buffer distance to any residential zone". Lighting at the Mt Arthur Coal operations is managed to reduce light scatter from the site. Four light related complaints were received during 2011 and MAC responded by moving offending light sources to reduce potential for reoccurrence.
	WASTE			

Sched/ No.	Condition	Verification	Compliance	Comments
3/53	The Proponent shall: (a) minimise and monitor the waste generated by the project; (b) ensure that the waste generated by the project is appropriately stored, handled and disposed of; (c) manage on-site sewage treatment and disposal in accordance with the requirements of Council; and (d) report on waste management and minimisation in the Annual Review, to the satisfaction of the Director-General.	• 2010 AEMR section 3.12 Waste Management • Total Waste Management System – Mt Arthur Coal	C	(a) The areas of waste generation have been inspected weekly by the waste contractor to identify issues and opportunities for improvement in waste management. (b) Weekly inspections assess waste segregation and storage of waste on site prior to collection by the waste contractor. (c) CHPP irrigation onto lawn area; Project Office pump-out system; admin buildings – tertiary treatment and water to main dam for reuse. Crib huts have pump-out systems; (d) Waste management and minimisation is reported in the AEMR in section 3.12 Waste Management
	SCHEDULE 4 ADDITIONAL PROCEDURES			
	NOTIFICATION OF LANDOWNERS			
4/1	By the end of November 2010, the Proponent shall notify in writing the owners of the land listed in: (a) Table 1 of schedule 3 that they have the right to require the Proponent to acquire their land at any stage during the project; (b) Table 1 (noise affected land) and Table 7 of schedule 3 that they are entitled to ask the Proponent to install additional noise mitigation measures at their residence at any stage during the project; and (c) Table 1 (air quality affected land) and Table 15 of schedule 3 that they are entitled to ask the Proponent to install additional air quality mitigation measures at their residence at any stage during the project.	• Letters to Landowners listed in Table 1 and Table 7 re Land Acquisition, 22 Nov 2010 • Mt Arthur Coal Consultation Correspondence Database	C	Letters were sent to each of the landowners notifying them of their right to acquisition by the proponent at any stage during the project, or to have noise mitigation measures installed at their residence.
4/2	If the results of the monitoring required in schedule 3 identify that impacts generated by the project are greater than the relevant impact assessment criteria, except where a negotiated agreement has been entered into in relation to that impact, then the Proponent shall, within 2 weeks of obtaining the monitoring results notify the Director-General, the affected landowners and tenants (including tenants of mine-owned properties) accordingly, and provide regular monitoring results to each of these parties until the results show that the project is complying with the criteria in schedule 3. If the monitoring results exceed the relevant 'additional noise mitigation measures' criteria in condition 7 of schedule 3 or 'additional air quality mitigation measures'	• Noise Management Plan, MAC-ENC-MTP-032 • Noise Monitoring Program, MAC-ENC-PRO-056 • 2010 AEMR section 3.8 Noise • Quarterly Environmental Noise Monitoring Survey Q4 2011, Global Acoustics • Quarterly Environmental Noise Monitoring Survey Q3 2011, Global Acoustics • Quarterly Environmental Noise Monitoring Survey Q2 2011, Global Acoustics	Noted	

Sched/ No.	Condition	Verification	Compliance	Comments
	criteria in condition 22 of schedule 3 at a residence on privately-owned land, then the Proponent shall also notify the landowner that they are entitled to ask the Proponent to install additional noise or air quality mitigation measures at their residence.	• Quarterly Environmental Noise Monitoring Survey Q1 2011, Global Acoustics		
4/3	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 all landowners and/or existing or future tenants (including tenants of mine owned properties) of properties where: (a) the predictions in the EA identify that the dust emissions generated by the project are likely to be greater than the air quality land acquisition criteria in schedule 3, with such notice to be provided by the end of November 2010; and (b) monitoring results identify that the mine is exceeding the air quality land acquisition criteria in schedule 3, with such notice to be provided within 2 weeks of identifying the exceedance.	• Mt Arthur Coal Consultation Correspondence Database • Letters to Landholders re Mine Dust Fact Sheet, 26 Nov 2010 • *"Mine Dust and You"*, NSW Health	C	Letters were sent on the 26 November 2010 to each of the landowners who predictions in the EA were identified as being potentially affected by dust emissions greater than the air quality land acquisition criteria generated by the project providing a copy of the NSW Health fact sheet entitled "Mine Dust and You".
	INDEPENDENT REVIEW			
4/4	If a landowner of privately-owned land considers the project to be exceeding the impact assessment criteria in schedule 3, then he/she may ask the Director-General in writing for an independent review of the impacts of the project on his/her land. If the Director-General is satisfied that an independent review is warranted, the Proponent shall within 2 months of the Director-General's decision: (a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Director-General, 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 the 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		Not triggered	

Sched/ No.	Condition	Verification	Compliance	Comments
	(b) give the Director-General and landowner a copy of the independent review.			
4/5	If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General. If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent shall: (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent expert, and conduct further monitoring until the project complies with the relevant criteria; or (b) secure a written agreement with the landowner to allow exceedances of the relevant impact assessment criteria, to the satisfaction of the Director-General. If the measures referred to in (a) do not achieve compliance with the air quality and/or noise land acquisition criteria in schedule 3, and the Proponent cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner's land in accordance with the procedures in conditions 7-8 below.		Not activated	
4/6	If the independent review determines that the relevant impact assessment criteria in schedule 3 are being exceeded, but that more than one mine is responsible for this non-compliance, then the Proponent shall, together with the relevant mine/s: (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent expert, and conduct further monitoring until there is compliance with the relevant criteria; or (b) secure a written agreement with the landowner and other relevant mines to allow exceedances of the relevant impact assessment criteria in schedule 3, to the satisfaction of the Director-General.		Not activated	No written requests have been received by Mt Arthur Coal from landowners in relation to acquisition, between September 2010 and December 2011. Verbal agreements to purchase three properties listed in Table 1 has occurred with negotiated settlements finalised between Mt Arthur Coal and the land owners (Webber, Englebrecht and Zahra).

Sched/ No.	Condition	Verification	Compliance	Comments
	If the measures referred to in (a) do not achieve compliance with the air quality and/or noise land acquisition criteria in schedule 3, and the Proponent together with the relevant mine/s cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner's land on as equitable a basis as possible with the relevant mine/s, in accordance with the procedures in conditions 7-8 below.			
	LAND ACQUISITION			
4/7	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 property at the date of this written request, as if the property 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 property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the 'additional noise mitigation measures' in condition 7 of schedule 3, 'additional air quality mitigation measures' in condition 22 of schedule 3, or 'compensatory water supplies' in condition 34 of schedule 3; (b) the reasonable costs associated with: • relocating within the Muswellbrook, Singleton or Scone local government area, or to any • other local government area determined by the Director-General; 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.	• Mt Arthur Coal Consultation Correspondence Database	Not activated	

Sched/ No.	Condition	Verification	Compliance	Comments
	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 Director-General for resolution. Upon receiving such a request, the Director-General shall 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 Director-General 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 Director-General shall 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, and the detailed report of the party that disputes the independent valuer's determination. 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 Director-General'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 Director-General determines otherwise			

Sched/ No.	Condition	Verification	Compliance	Comments
4/8	The Proponent shall pay all reasonable costs associated with the land acquisition process described in condition 7 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.		Noted	
	SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING			
	ENVIRONMENTAL MANAGEMENT			
	Environmental Management Strategy			
5/1	The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. The strategy must: (a) be submitted to the Director-General for approval by the end of March 2011; (b) provide the strategic framework for environmental management of the project; (c) identify the statutory approvals that apply to the project; (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project; (e) describe the procedures that would be implemented to: • 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 during the course of the project; • respond to any non-compliance; • respond to emergencies; and (f) include: • copies of the various strategies, plans and programs that are required under the conditions of this approval once they have been approved; and • a clear plan depicting all the monitoring to be carried out in relation to the project.	• Environmental Management Strategy MAC-ENC-MTP-041, Mat 2011	C	The Environmental Management Strategy addresses the requirements of Schedule 5 condition 1. The Environmental Management Strategy was submitted to the Director-General in March 2011 and approved on 18 September 2012. (a) the Environmental Management Strategy was submitted to the D-G in March 2011. (b) Section 2 provides the Strategic Framework for the EMS (c) Section 3 lists the relevant statutory approvals (d) Section 8 addresses Responsibilities, Authority & Accountability (e) Section 4 provides Procedures Specific to the EMS (f) The strategies , plans and programs required under the conditions of the Project Approval are referenced in Section 10 of the EMS.
	Management Plan Requirements			
5/2	The Proponent shall ensure that the management plans required under this approval are prepared in accordance	• Aboriginal Heritage Management Plan MAC-ENC-MTP-042	C	The Management Plans required under the Project Approval have been prepared and submitted to DP&I on 30 March 2011.

Sched/ No.	Condition	Verification	Compliance	Comments
	with any relevant guidelines, and include: (a) detailed baseline data; (b) a description of: • 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; (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: • impacts and environmental performance of the project; • 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: • 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.	• Air Quality Management Plan MAC-ENC-MTP-040 • Blast Management Plan MAC-ENC-MTP-015 • European Heritage Management Plan MAC-ENC-MTP-018 • Noise Management Plan MAC-ENC-MTP-032 • Road Closure Management Plan MAC-ENC-MTP-024 • Site Water Management Plan MAC-ENC-MTP-034 • Letter to Planning re Comments on draft Management Plans, 30 Jun 2011		Comments on the Management Plans were provided by DP&I and a response with the suggested revision to the Management Plans was provided by Mt Arthur Coal to DP&I on 30 June 2011. DP&I approved management plans on the following dates: February 2011: Macleans Hill Cultural Heritage Management Plan 6 June 2012: Air Quality Management Plan Air Quality Monitoring Program Noise Management Plan Noise Monitoring Program Road Closure Management Plan 20 August 2012: Aboriginal Heritage Management Plan Site Water Balance Erosion and Sediment Control Plan Surface Water Monitoring Program Groundwater Monitoring Program Surface and Groundwater Response Plan 23 August 2012: Site Water Management Plan
	Annual Review			
5/3	By the end of 2010, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Director-General. This review must: (a) describe the works that were carried out in the past year, and the works that are proposed to be carried out over the next year; (b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the	• Email re Acceptance by Planning of Submission of the Annual Review in March 2011 • 2010 AEMR	C	Mt Arthur Coal requested Planning NSW consider an extension for the submission date of the Annual Review to March 2011. Planning accepted submission of the Annual Review by end of March 2011 and recommended that Mt Arthur request the due date for Annual Return submission be changed. The Annual Review (previously known as the Annual Environmental Management Report (AEMR) is prepared for the 1 January to 31 December period.

Sched/ No.	Condition	Verification	Compliance	Comments
	• the relevant statutory requirements, limits or performance measures/criteria; • the monitoring results of previous years; and • the relevant predictions in the EA; (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; (d) identify any trends in the monitoring data over the life of the project; (e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and (f) describe what measures will be implemented over the next year to improve the environmental performance of the project.			Preparation of the 2011 Annual Review (AEMR) document had commenced at the time of this audit (i.e. December 2011). The 2010 AEMR addressed the requirements of this condition: (a) section 2 Description of Operations (b) to (f) section 3 Environmental Performance provides a comprehensive review of the monitoring results and complaints records of the project over the past year, including a comparison of results against the relevant statutory requirements, limits or performance measures/criteria; monitoring results of previous years; and the relevant predictions in the EA
	Revision of Strategies, Plans and Programs			
5/4	Within 3 months of the submission of an: (a) annual review under condition 3 above; (b) incident report under condition 7 below; (c) audit under condition 9 below; and (d) any modification to the conditions 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 Director-General. *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.*		Noted	
	Community Consultative Committee			
5/5	The Proponent shall establish and operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Director-General. This CCC must be established by the end of March 2011 and be operated in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version). *Notes:* • *The CCC is an advisory committee. The Department and*	• *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* • Letter to Planning re Mt Arthur Coal Complex - CCC, 14 Feb 2011	C	The Community Consultative Committee (CCC) for the project was established in February 2011 and meetings have been held quarterly generally in accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Project.*

Sched/ No.	Condition	Verification	Compliance	Comments
	other relevant agencies are responsible for ensuring that the Proponent complies with this approval. • *In accordance with the Guideline, the Committee should comprise an independent chair (Council if available) and appropriate representation from the Proponent, affected councils and the general community.* • *In establishing the CCC, the Department will accept the continued representation from existing CCC members, however the Proponent should ensure that adequate representation is achieved for landowners surrounding the mine expansion areas.*			
	Management of Cumulative Impacts			
5/6	In conjunction with the owners of the nearby Drayton and Bengalla mines, the Proponent shall use its best endeavours to minimise cumulative impacts of the project on the surrounding area to the satisfaction of the D-G. *Note: Nothing in this approval is to be construed as requiring the Proponent to act in a manner which is contrary to the Trade Practices Act 1974.*	• Upper Hunter Inter-Mining Collaboration – Draft Statement of Intent, Oct 2010	Ongoing	A draft Statement of Intent was prepared by Mt Arthur Coal in October 2010 in relation to Upper Hunter Inter-Mining Collaboration. No formal agreement between the nearby mines to the draft Statement of Intent had been received by Mt Arthur Coal at the date of this audit.
	REPORTING			
	Incident Reporting			
5/7	The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of becoming aware of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.	• Letter to Planning re Blast Event, 28 Feb 2011	C Ongoing	A letter report was provided to Department of Planning and DECCW re a blast event that resulted in an airblast overpressure result of 116.3dBL and ground vibration of 11.55 mm/sec at the Edinglassie property. It was determined that the vibration monitor was not satisfactorily secured to the ground and the high reading occurred due to movement of the monitor in response to the blast.
	Regular Reporting			
5/8	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, and to the satisfaction of the Director-General.	bhpbilliton.com/regulatoryinformation/	C Ongoing	The BHP Billiton website provides regular reporting on environmental performance of the Mt Arthur Coal Mine on the website and to the CCC on a quarterly basis.
	INDEPENDENT ENVIRONMENTAL AUDIT			
5/9	By the end of December 2011, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an	• Letter to DP&I re Independent Environmental Audit Team,5 Oct 2011	C	This Independent Environmental Audit was conducted by Trevor Brown & Associates during December 2011 and January 2012. (a) The Independent Environmental Audit team was

Sched/ No.	Condition	Verification	Compliance	Comments
	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 Director-General; (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 relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals); (d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and (e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under the abovementioned approvals. *Notes:* • *This audit team must be led by a suitably qualified auditor and include experts in surface water, groundwater and any other fields specified by the Director-General.* • *The audits should be coordinated with similar auditing requirements for the Mt Arthur Underground Project.*	• Letter from Planning re Endorsement of Independent Environmental Audit Team, 21 Nov 2011 • Letter to OEH re Independent Environmental Audit, 23 Nov 2011 • Letter to NSW Office of Water re Independent Environmental Audit, 23 Nov 2011 • Letter to DTIRIS re Independent Environmental Audit, 23 Nov 2011 • Letter to MSC re Independent Environmental Audit, 23 Nov 2011 • Letter from OEH re Independent Environmental Audit, 15 Dec 2011		endorsed by DP&I on 21 November 2011. The audit site inspections were conducted between 12-16 December 2011: Trevor Brown – Lead Auditor Michael Frankcombe – Rehabilitation, Erosion and Sediment Control and Surface Water Management Aleks Todoroski – Air Quality Will Wright – Groundwater Neil Pennington – Noise (b) No specific requests for review of issues related to the Mt Arthur Coal Mine were received from the relevant authorities. (c) Section 5 of this audit report provides assessment of the environmental performance of the project to the requirements of the Project Approval/EPL or Mining Leases. (d) Comment on the Management Plans is provided in Section 5 of this report. (e) Recommendations on measures or actions to improve the environmental performance of the project are provided under each specific environmental aspect as required.
5/10	Within 6 weeks of the completion of this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.		Noted	
	ACCESS TO INFORMATION			
5/11	From the end of December 2010, the Proponent shall: (a) make the following information publicly available on its website: • a copy of all current statutory approvals for the project; • a copy of the current environmental management strategy and associated plans and programs; • a summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the	**www.bhpbilliton.com/energycoal/**	C	Mt Arthur Coal information is available on the website **www.bhpbilliton.com/home/aboutus/regulatory/Pages/** : ***NSW Government*** Mt Arthur Coal Consolidation Project Mt Arthur Underground Bayswater No 3 ***Preliminary Documentation under the EPBC Act:*** 1 Mt Arthur Coal Extension Project Preliminary Documentation

Sched/ No.	Condition	Verification	Compliance	Comments
	conditions of this approval; • a complaints register, which is to be updated on a monthly basis; • a copy of the minutes of CCC meetings; • a copy of any Annual Reviews (over the last 5 years); • a copy of any Independent Environmental Audit, and the Proponent's response to the • recommendations in any audit; • any other matter required by the Director-General; and (b) keep this information up to date, to the satisfaction of the Director-General.			1a EPBC Preliminary Documentation - Public Notice 2 Mt Arthur Coal Extension Project EPBC referral 2a Mt Arthur Coal Extension Project EPBC referral fig 1-6 2b Mt Arthur Coal Mine Open Cut Consolidation Project Approval 2c Mt Arthur Coal Mine Underground Project Approval 2d South Pit Extension Project Approval 2e Mt Arthur North Open Cut Coal Mine Development Consent 2f Bayswater Rail Loading Facility and Rail Loop Development Consent 2g Bayswater No 3 Development Consent a 2010 Ecological Monitoring Report b 2009 Ecological Monitoring Report c 2008 Ecological Monitoring Report d Mt Arthur North EIS - Flora & Fauna Impact Assessment Pt 1 d Mt Arthur North EIS - Flora & Fauna Impact Assessment Pt 2 e 2003 Ecological Monitoring Report f 2004 Ecological Monitoring Report g 2005 Ecological Monitoring Report h 2006 Ecological Assessment Proposed South Pit Extension i 2006 Ecological Monitoring Report j 2009 MAC Consolidated Project Ecological Assessment) ***Blast Information*** Mt Arthur Coal Blast Log 20 February 2012 Mt Arthur Coal Upcoming Blast Schedule ***Environmental Management Plans*** The following management plan has been approved by the NSW Department of Planning & Infrastructure: Macleans Hill Cultural Heritage Management Plan Aboriginal Heritage Management Plan Air Quality Management Plan Noise Management Plan

Sched/ No.	Condition	Verification	Compliance	Comments
				The following draft management plans are currently being considered by the NSW Department of Planning and Infrastructure: Draft Environmental Management Strategy Draft Blast Management Plan Draft European Heritage Management Plan Draft Rehabilitation Management Strategy Draft Road Closure Management Plan Draft Site Water Management Plan The following pollution reduction program is required under Environment Protection Licence 11457: Mt Arthur Coal Particulate Matter Pollution Reduction Program ***Mt Arthur Coal CCC*** 1 February 2012 CCC Meeting - Minutes 1 February 2012 CCC Meeting - Agenda 1 February 2012 CCC Meeting - Monitoring Results (December 2011 - January 2012) ***Community Information*** Community Complaints - January 2012 Community Matters Community Development Fund application form ***Annual Environmental Management Reviews*** MAC Annual Environmental Management Report 2011 MAC Annual Environmental Management Report 2010 MAC Annual Environmental Management Report 2009 MAC Annual Environmental Management Report 2008 MAC Annual Environmental Management Report 2007 MAC Annual Environmental Management Report 2006(A) MAC Annual Environmental Management Report 2006(B)

Sched/ No.	Condition	Verification	Compliance	Comments
				MAC Annual Environmental Management Report 2005(A) MAC Annual Environmental Management Report 2005(B)

Attachment B1

Statement of Commitments – Appendix 3 Mt Arthur Coal - Consolidation Project EA Nov 2009

SoC No.	Statement of Commitment	Verification	Compliance	Comments
	Environmental Management & Monitoring			
1	Mt Arthur Coal 's Environmental Monitoring Programs for air quality, water quality, noise and blasting will be reviewed and updated as required, in consultation with relevant regulators for approval by the Department.	• Noise Monitoring Program MAC-ENC-PRO-056 [Project Approval Schedule 3 condition 9(c)] • Blast Monitoring Program MAC-ENC-PRO-055 [Project Approval Schedule 3 condition 17(d)] • Air Quality Monitoring Program MAC-ENC-PRO-055 [Project Approval Schedule 3 condition 24(c)] • Surface Water Monitoring Program MAC-ENC-PRO-061 [Project Approval Schedule 3 condition 32] • Groundwater Monitoring Program MAC-ENC-PRO-062 [Project Approval Schedule 3 condition 33]	C	The Environmental Monitoring Programs for air quality, water quality, noise and blasting have been reviewed and updated as necessary to satisfy the requirements of this Project Approval.
2	Management Plans will be revised and / or prepared in consultation with relevant regulators for approval by the Department for the following areas: • Water Management; • Flora & Fauna; • Rehabilitation & Landscape (including Void Management); and • Aboriginal Archaeology & Cultural Heritage.	• Water Management Plan MAC-ENC-MTP-034 • Rehabilitation Strategy MAC-ENC-MTP-034 • Aboriginal Heritage Management Plan MAC-ENC-MTP-042	C	Refer to Project Approval Schedule 5 condition 2. The Management Plans required under this Project Approval were revised during 2011 to address the Mt Arthur Consolidation Project requirements.
	Air Quality	•		
3	In addition to the best practice management measures currently in place, Mt Arthur Coal will apply a road sealant or dust suppressant product on all active coal and overburden haul roads and / or utilise other such technologies and initiatives as required to ensure that the air quality outcomes described in the EA are achieved.	• Project Report, RST, 30 Oct 2011	C	Application of dust suppressant product and the incorporation of gravel material to improve road surfaces, has occurred to reduce water use per area of haul road. The polymer dust suppressants reduce dust emissions and sediment loss from the main haul roads within the Mt Arthur site.
4	Mt Arthur Coal will undertake regular reviews and monitoring of greenhouse gas emissions and energy efficiency initiatives to ensure that greenhouse gas emissions per tonne of product	• Greenhouse Gas and Energy Efficiency Management Plan	C	Mt Arthur Coal has a Greenhouse Gas and Energy Efficiency Plan to address the commitment in Statement.

SoC No.	Statement of Commitment	Verification	Compliance	Comments
	coal are kept to the minimum practicable level.	(draft)		
5	Mt Arthur Coal will establish a new real-time Tapered Element Oscillating Microbalances (TEOM) monitoring station or stations on the Mt Arthur site positioned so that it (they) provide data that are representative of air quality conditions on the site itself and on nearby properties where air quality data may be needed for mine management purposes. Data collected is to be published in the Project's Annual Reviews.	• TEOM graphs Jul-Sep 2011	C	Six real-time Tapered Element Oscillating Microbalances (TEOM), have been established as part of the Mt Arthur Coal air quality monitoring program network. These TEOM's are strategically located around the mine to be representative of sensitive receptor locations and to allow a reasonable compliance assessment to be completed. This is considered one of the most comprehensive mine monitoring networks in the Hunter Valley and is appropriate for the scale of approved operations at Mt Arthur Coal. The data collected are reviewed, assessed and published in the Mt Arthur Coal Environmental Monitoring Reports and Annual Review.
	Noise & Blasting			
6	Mt Arthur Coal shall ensure that Project noise at the northern boundary of the Woodlands property does not exceed the lowest intrusive noise criteria provide by the EPA/DECCW's Industrial Noise Policy of an RBL of 30 dBA LAeq (15 minutes) plus 5 dBA.		Noted In progress	Woodlands Stud is owned by Darley and is located on the Golden Hwy south of the Mt Arthur Coal operation. Consultation has occurred with the Woodlands Stud by Mt Arthur Coal for the purpose of installing monitoring equipment. A time frame for monitoring is still to be agreed.
7	Mt Arthur Coal shall undertake blast monitoring and associated reporting at the Woodlands property in accordance with protocols approved by the Department of Planning and for a time frame to be agreed with Woodlands.		Noted In progress	
	Water Resources			
8	Mt Arthur Coal will continue to monitor hydro-geomorphological conditions and scrutinise for evidence of any groundwater ingress or end-wall instability indicators as it progresses the previously approved mining towards the Hunter River Alluvial. Mining (other than that already approved in the MAN EIS) will not extend beyond a nominal 150 m buffer zone from the Hunter River Alluvial until agreement is reached with NOW regarding the installation of a lower permeability barrier along the point of connections of mining and the alluvium or other appropriate safeguards.	• Groundwater Monitoring Program MAC-ENC-PRO-062 section 6.2 • Water Management Plan MAC-ENC-MTP-034	Ongoing	Mine survey plans were reviewed during the audit showed the extent of mining compared to the mapped extent of alluvium with a set-back distance of greater than 150m. No mining was observed to have occurred within 150 m of mapped alluvium. A site inspection undertaken on 21 December 2011 of the northern extent of the mining adjacent to the Hunter River Alluvials and the southern extent adjacent to Saddlers creek, confirmed that no mining had occurred within 150 m of mapped alluvium in these areas.
9	Mt Arthur Coal will undertake a census of privately owned groundwater bores to ascertain their current usage and provide a baseline against which to compare any future impacts. In the event of interruption to water supply resulting from the Project, an alternative water supply will be provided, until such interruption ceases.	• Groundwater Monitoring Program MAC-ENC-PRO-062 section 6.2 • Water Management Plan MAC-ENC-MTP-034 • Groundwater Bore Census, Hansen Bailey, 8 Sep 2011	C	A Census of the groundwater bores was completed by Hansen and Bailey on 8 September 2011 including bores 2-3km beyond the EA boundary as required by NSW Office of Water. The information requested on the census forms is considered insufficient to 'provide a baseline against which to compare any future impacts'. It is suggested that additional details, including bore yields/usage as well

SoC No.	Statement of Commitment	Verification	Compliance	Comments
				as water depths be requested. The results should be reviewed and for bores which are identified as being potentially impacted, verification of the water levels and yields be requested.
10	Mt Arthur Coal will install and maintain for the life of the mine a real time surface water monitoring station, downstream of the mine in Saddlers Creek but upstream from any water off takes, with the following characteristics: The station would continuously monitor in real time the following parameters as a minimum: • Flows; • Conductivity; and • Turbidity. • Agreed trigger levels would be established in consultation with Darley for conductivity and turbidity; • If trigger levels are exceeded, nominated Darley staff would be automatically notified by SMS or other agreed alarm protocols; and • Annual water quality reports incorporating raw data and professional interpretation would be provided annually to Darley and the Department.	• Water Management Plan, MAC-ENC-MTP-034 • Surface Water Monitoring Program, MAC-ENC-PRO-061 • Photo image with Saddlers Creek Monitoring Station location and co-ordinates	Ongoing In progress	It Is proposed that a gauging station be positioned in the same location as a decommissioned Saddlers Creek gauging station at Bowfield (GS210043) pending consultation with the land owner, to make use of previous station data as a potential baseline. The gauging station will be installed and commissioned following the approval of the Surface Water Monitoring Program and the landowner. The installation of the gauging station will be subject to sufficiently dry weather conditions to allow access for construction of the station and receipt of relevant statutory approvals. The installation of real-time surface water monitoring station downstream of Mt Arthur Coal in Saddlers Creek, but upstream from any water off-takes is planned for 2012.
11	Water at Mt Arthur Coal will continue to be managed in accordance with best practice and reduce, reuse, recycle principles. Development of modern tailings storage facilities and possible modifications to coal preparation processes to reduce water usage on site will continue to be developed and assessed, and water use and reduction initiatives will be reported annually in the Annual Review.	• 2010 AEMR Section 3.13 Water • Site Water Balance, MAC-ENC-PRO-059	C Ongoing	Water balance is regularly monitored for the operation of Mt Arthur Coal Mine Consolidated project. An overview of key inputs and outputs of the water balance, tracked on a monthly basis, showed that the operation was a net generator of water during 2010 and 2011. This has been confirmed in relation to the total water usage sourced from the Hunter River, demonstrating that water from this source has decreased since 2010 predominantly due to increased rainfall and localised catchment runoff in active pits and out of pit water storages. The site water use and balance is reported in the Annual Review section 3.13 Water Management.
	Traffic			
12	Mt Arthur Coal will liaise with Anglo Coal, Council, Macquarie Generation and the ARTC to address legal and appropriate access for properties along Antiene Railway Station Road.		Noted	Refer to Schedule 3 condition 48
13	Transgrid will be consulted consistent with current practice when blasting is to occur in close proximity to the high voltage transmission line located near to the southern boundary of the mining area (as per South Pit Extension EA Statement of Commitment No. 6.4.3).		Noted	

SoC No.	Statement of Commitment	Verification	Compliance	Comments
14	The following commitments will form the basis of a voluntary planning agreement with Council: 1. Mt Arthur Coal will provide a capital contribution of $3M towards the cost of the upgrade of Thomas Mitchell Drive. 2. In addition Mt Arthur Coal will contribute a further $4.06M capital, repayable to Mt Arthur Coal in accordance with the terms detailed in item 4 below. 3. The total capital contribution of $7.06M will be payable in yearly instalments that will match Council's execution of the works. 4. The $4.06M repayable portion (detailed in item 2 above) will be repaid to Mt Arthur Coal by Council from planning contributions to be made to Council by other developments via other agreements established by Council with these individual developments. Council will have an obligation to actively pursue these agreements as a matter of priority in these negotiations so as to ensure Mt Arthur Coal is made whole in as short a timeframe as possible. 5. Mt Arthur will provide Council with $120,000 (indexed) per annum for the purpose of a sinking fund connected with the ongoing maintenance of Thomas Mitchell Drive and restricted for that purpose.	• Voluntary Planning Agreement, 24 Jun 2011	C	***Refer to Schedule 2 condition 14*** The Voluntary Planning Agreement between the Hunter Valley Energy Coal Pty Ltd and Muswellbrook Shire Council was prepared by the end of March and signed by the Muswellbrook Shire Council on 24 June 2011 for contributions: • Mt Arthur Coal Community Fund $500,000 per annum plus PI paid monthly • Thomas Mitchell Drive Upgrade - $3,000,000 paid in annual instalments based on execution of works as set out in the Upgrade Plan • Thomas Mitchell Drive Maintenance - $12,000 per annum plus CPI • Council Environmental Assessment - $20,000 per annum plus CPI
	Ecology			
15	The mine rehabilitation program will focus on the re-establishment of 500 ha White Box Yellow Box Blakely's Red Gum Woodland.	• Rehabilitation Strategy MAC-ENC-MTO-034	C Ongoing	Disturbed areas rehabilitated during 2010 were seeded with a specific targeted tree seed mix designed to meet the mine's commitment to re-establishing significant vegetation communities. At Saddlers North the mix was formulated to achieve a Central Hunter Ironbark/Spotted Gum/Grey Box Forest community, while at CD1 it was designed to achieve a Hunter White Box/Yellow Box/ Blakely's Red Gum woodland community.
16	Within four years from the date of Project Approval, Mt Arthur Coal will acquire an additional minimum of 165 ha of land to be permanently conserved as offsets to help compensate for the total ecological impacts of the project. The flora and fauna values on the additional land are to further contribute to the compensation for the ecological impacts of the Project. The additional land for the offset package will be surveyed by the proponent to demonstrate its suitability for impacted flora and fauna. When selecting land for the offset, preference will be given to land adjacent to the existing offset package. Management of the additional land will be as prescribed for the	• Rehabilitation Strategy MAC-ENC-MTP-034	Noted	***Refer to Schedule 3 condition 36*** The Biodiversity and Rehabilitation Management Plan details how existing offsets will be managed. Future off-sets will also be subject to the management requirements in this plan.

SoC No.	Statement of Commitment	Verification	Compliance	Comments
	other elements of the offset package			
	Visual			
17	Mt Arthur Coal will progressively rehabilitate the mining and overburden emplacement areas.	• Rehabilitation Strategy MAC-ENC-MTP-034	C Ongoing	
18	Upon Project Approval, guidelines will be prepared to include: treatment methods for primary and secondary view areas from affected residences; consultation requirements with residents in those key areas of high sensitivity, and action plans to mitigate visual impacts of the Project (depending on extent of visibility and its sensitivity). This will be detailed in a report to be submitted to the Department..	• Visual Impacts Management Plan, AECOM, May 2011	C Ongoing	***Refer to Schedule 3 condition 49*** The Visual Impacts Management Plan was prepared to satisfy this commitment and will be implemented over time.
19	Upon Project Approval, Mt Arthur Coal will prepare draft plans to screen and filter views of the Mt Arthur Project Area from affected sections of Woodlands. The draft plans will be prepared in consultation with Darley and submitted for approval by the Director General of the Department. Mt Arthur Coal will then implement the works in the plans to ensure that views from Woodlands of the Project are appropriately screened to the greatest extent practicable, and ensure that the works are effectively maintained throughout the life of the project, at the cost to Mt Arthur Coal. The plans are to be prepared by a suitably qualified and experienced landscape architect.	• Visual Impacts Management Plan, AECOM, May 2011	Ongoing	See above
20	Mt Arthur Coal will minimise views from the Woodlands Property within the Primary View Zone to active overburden faces on the out of pit emplacement areas of the Project to ensure the extent of any primary view is less than 2.5%, as described in Appendix 1 of the EA Report.	• Visual Impacts Management Plan, AECOM, May 2011	Ongoing	See above
	Aboriginal Archaeology & Cultural Heritage	•		
21	All of the Aboriginal heritage management initiatives described in the MAU EA as listed in **Section 8.7.3** will be implemented as part of the Project.	• Aboriginal Heritage Management Plan, MAC-ENC-MTP-042 Mar 2011	C	***Refer to Schedule 3 condition 45*** The Aboriginal Heritage Management Plan addresses the management initiatives described in the EA.
22	To offset the disturbance of previously established Heritage Management Zones, a 495 ha Offset Area to the east of the mine site will be managed to ensure the protection of Aboriginal objects and the enhancement of Aboriginal cultural heritage.	• Aboriginal Heritage Management Plan, MAC-ENC-MTP-042 Mar 2011	C	***Refer to Schedule 3 condition 36*** An off-set area to the east of the mine site on Thomas Mitchell Drive Off-site is to be established with existing vegetation and establishment of native vegetation under Project Approval Schedule 3 condition 36.
23	The salvage and the protection of any remaining Aboriginal objects within the EA Boundary will continue to be managed in accordance with a revised Aboriginal Archaeology & Cultural Heritage Management Plan in consultation with the local	• Letter from Planning re Macleans Hill Interim Aboriginal Heritage Management Plan, 10 Feb 2011 • Letter Report re Salvage of		Salvage of Aboriginal sites within the Macleans Hill area was approved by DP&I in February 2011 under the early submission of the Macleans Hill Aboriginal Heritage Management Plan, ahead of the submission of the full

SoC No.	Statement of Commitment	Verification	Compliance	Comments
	Aboriginal community and DECCW.	Aboriginal Artefacts at Macleans Hill, RPS, 9 Sep 2011		Heritage Management Plan required in March 2011.
	Non-Aboriginal Heritage			
	Commitment			
24	Mt Arthur Coal will undertake archival recordings of the Belmont Homestead Complex and Beer Homestead slab hut prior to any disturbance or relocation of these sites.	• European Heritage Management Plan, MAC-ENC-MTP-018, Mar 2011	C Ongoing	The Beer Homestead will remain in its current location for as long as possible before predicted mining impacts necessitate its removal. Upon planned impact to the Beer Homestead, a detailed plan for the relocation of the Homestead will be developed in accordance with Schedule 3, Condition 45, clause (c), subclause 2 of Project Approval 09_0062, and NSW Heritage Office guidelines on archival recording.
	Community			
25	Within 12 months of this approval, unless otherwise agreed by the Director-General, Mt Arthur Coal will use its best endeavours to enter into a planning agreement with Council in accordance with Division 6 of Part 4 of the EP&A Act, that provides for a contribution to Council for the purpose of community enhancement to address the social amenity and community infrastructure requirements arising from the additional impacts caused by the Project and the Mt Arthur Coal Mine Underground Project, as approved in the development approval, No 06_0091 and granted on 2 December 2008, such sum to be not less than $500,000 (indexed) per annum and a further $20,000 (indexed) for environmental and planning services connected with local coal mining undertaken by Council for each year of the Project approval. The entering into of this planning agreement will meet the requirements included in the development approval for the Mt Arthur Coal Mine – Underground Project (development approval No. 06_0091), and in particular will satisfy condition 14 in schedule 2 of the approval for the Mt Arthur Coal Mine – Underground Project (development approval No. 06_0091).	• Voluntary Planning Agreement, 24 Jun 2011	C	***Refer to Schedule 2 condition 14*** The Voluntary Planning Agreement between the Hunter Valley Energy Coal Pty Ltd and Muswellbrook Shire Council was prepared by the end of March and signed by the Muswellbrook Shire Council on 24 June 2011 for contributions: • Mt Arthur Coal Community Fund $500,000 per annum plus PI paid monthly • Thomas Mitchell Drive Upgrade - $3,000,000 paid in annual instalments based on execution of works as set out in the Upgrade Plan • Thomas Mitchell Drive Maintenance - $12,000 per annum plus CPI • Council Environmental Assessment - $20,000 per annum plus CPI
	Reporting			
26	Mt Arthur Coal will prepare a consolidated Annual Review (which summarises monitoring results and reviews performance) for the Mt Arthur Coal Complex and distribute it to the relevant regulatory departments.	• 2010 AEMR • 2011 AEMR (draft)	C	The AEMR (Annual Review) for the Mt Arthur Consolidation Project has been prepared and distributed for 2010 and the 2011 document was being prepared at the date of this audit.
27	Mt Arthur Coal will monitor the proportion of its additional employees ('new employees') needed for the Consolidation	• 2010 AEMR section 2.2.3	C Ongoing	Mt Arthur has strived to employ local personnel. Local residency is one of the factors considered when

SoC No.	Statement of Commitment	Verification	Compliance	Comments
	Project that are recruited from outside the local area (defined as Muswellbrook, Upper Hunter and Singleton Local Government Areas) and will report on this in its Annual Reviews for the Project. If the proportion of employees recruited from outside the local area excessively differs from the 20 per cent level forecast in the EA, that is 30 per cent or above in-migrant new employees in any one calendar year, Mt Arthur Coal will review its recruitment program to encourage greater local recruitment and will publish in its next Annual Review the measure it proposes to adopt to achieve this including the timeframe for their implementation and how their effectiveness would be monitored.			recruiting new employees and contractors for two reasons. Firstly to ensure that local communities benefit from Mt Arthur Coal's operations and secondly, to effectively manage fatigue related safety issues associated with long-distance travel. Approximately 82% of employees reside in the local government areas of Muswellbrook, Singleton and the Upper Hunter, and during early 2011 approximately 77% of personnel hired were from the local area.
	Employment			
28	Mt Arthur Coal will use its best endeavours to employ at least eight first year apprentices per annum for the life of the Project, sourced from the local area (best endeavours applying). Mt Arthur recognises that the sourcing of quality candidates is becoming increasingly competitive however will undertake a rigorous recruitment plan to attract and retain 8 first year apprentices per annum.	• Site Notice -11347 New Employees – Trainee Operators 26 Sep 2011 • Site Notice -11355 New Employees – Trainee Operators 26 Sep 2011	C Ongoing	Regular Site Notices are distributed by Mt Arthur Coal introducing new employees.

ATTACHMENT B2

Environmental Assessment (EA) Commitments

(Environmental Assessment – Mt Arthur Coal Consolidation Project, Nov 2009)

EA Page No.		Commitment	Conformance	Audit Comment
Executive Summary				
EMS				
ii	Exec Summary	Mt Arthur Coal will ensure its EMS continues to comply with legal and other requirements in relation to environmental management.	C	The Environmental Management System is reviewed and audited regularly and updated as required to address the project approvals and current legislative and regulatory requirements. The third party DNV audits have shown that implementation of the EMS is in compliance with the criteria, and certification has been retained.
iii	Exec Summary	The EMS and Environmental Monitoring Program will be revised and consolidated as appropriate to ensure consistency with the Project and the achievement of the air quality, noise and blasting environmental outcomes described in this Environmental Assessment.	C	Monitoring Programs were prepared for the Mt Arthur Coal project as part of the environmental management plans. These supplementary documents provide clear processes and procedures for the various environmental aspects to be monitored and are supplementary to the Management Plans that provide the management strategies and overview of each monitoring program requirement.
Stakeholder Engagement				
v	Exec Summary	Mt Arthur Coal is committed to continuing its stakeholder engagement throughout the life of the Project, in accordance with best practice policies and procedures. Ongoing stakeholder engagement will include regular contact with neighbouring land owner, representatives of key local and State regulatory authorities, industry bodies and the Aboriginal community and the release of public information on environmental performance.	C	Mt Arthur Coal has a comprehensive community engagement program (including communicating with stakeholders – near neighbours, local residents, regional industry and mining companies, community groups, NGOs and local, state and federal governments) through face-to-face meetings, community workshops, telephone and written correspondence, distribution of information and feedback mechanisms) to improve its relationship with the local community in which it operates. In 2009 and in consultation with MSC, Mt Arthur Coal consolidated its Mt Arthur North and Bayswater no. 3 CCC's into one Mt Arthur Coal CCC. Mt Arthur Coal coordinated and participated in nine Mt Arthur Coal CCC meetings in 2011 six (6) in 2010 and eight in 2009. Mt Arthur Coal was also involved in two Mt Arthur Coal and Anglo Coal (Drayton Management) Joint CCC meetings in 2011 to discuss issues surrounding rail movements, and air quality and noise monitoring results relating to the joint rail loading facility. Mt Arthur Coal's Community Matters newsletter was have been distributed to more than 7,000 households, businesses and organisations throughout Muswellbrook, Aberdeen and Denman. The newsletter provided information about Mt Arthur Coal's Sustainable Communities Project, new apprentices, mine extension project, dust suppressants, air quality monitoring and community investment activities. The newsletter also included a brief questionnaire to capture community feedback on a range of issues.
Air Quality				
vi	Exec Summary	Current onsite dust minimisation practices will be continued and enhanced to ensure that the limits predicted in the EA are met at private receivers.	C	***(Also refer to Statement of Commitment 3)*** The site inspection found that chemical dust suppressants are being applied on the main haul roads to mitigate dust and are trialled on some exposed areas. It was observed that no significant visible dust was

EA Page No.		Commitment	Conformance	Audit Comment
		In particular Mt Arthur Coal will introduce a dust suppressant product (or other comparably effective alternative) on all permanent active coal and overburden haul roads to minimise the generation of dust. Mt Arthur Coal will review the existing Air Quality Management Plan for the site to incorporate this new measure and any other additional practical management measures which may be implemented as required to ensure the predictions in this Environmental Assessment are met at private receivers.		observable on most haul roads at most times. Dust was observed on a minor haul road and it was noticed that within a few minutes of this becoming apparent a water cart was used to ameliorate the dust on that section of road. Haul road dust was visible on steep downhill grades where is may be unsafe (due to loss of traction) to apply chemical controls or excessive water. This was also the case at main haul road intersections at the bottom of a steep grade, again, for safety reasons very high levels of control may not be attainable at such locations. Dust from haul trucks was not apparent on the main haul roads that were flat, or on uphill gradients.
Greenhouse Gas				

vii	Exec Summary	Mt Arthur Coal, through its policies and procedures has committed to continue to undertake regular reviews and monitoring of greenhouse gas emissions and energy efficiency initiatives to ensure that greenhouse gas emissions per tonne of product coal are kept to the minimum practicable level.	C	***(Also refer to Statement of Commitment 4)***
				Some of the key focus areas for green- house gas management on site include:
				• establishing an NGER Method 3
				• assessment of fugitive seam gas emissions;
				improving blasting practices to minimise diesel use and emissions;
				• generating and maintaining best practice management for synthetic
				• and refrigeration gasses;
				• exploring the increase of the percentage of biodiesel used across site.
				• Mt Arthur Coal's efforts to reduce greenhouse gas emissions are complemented by energy efficiency measures in compliance with the Energy Efficiency Opportunities program. Energy efficiency initiatives and opportunities are evaluated in the context of;
				  • their compatibility with the mine's production output needs;
				  • energy and carbon costing;
				  • capital cost; and,
				  • overall operating cost effectiveness including maintenance costs.
				• The greenhouse gas component of regular monthly reporting against performance targets. The Mt Arthur Coal greenhouse gas and energy efficiency management plan is not specifically referred to in the draft air quality management plan.
				• Whilst not specifically mentioned in the air management plan, the greenhouse gas and energy efficiency management plan does refer to reporting on the quantity of greenhouse gas emissions per tonne of product coal, but only for specific projects in the Energy Efficiency Opportunity Report.

Noise				
viii	Exec Summary	A review of the existing Noise Management Plan will be undertaken for the Project and Mt Arthur Coal will continue to ensure that the predictions in the Environmental Assessment are met at private receivers through the implementation of required onsite management activities.	C	The Noise Management Plan MAC-ENC-MTP-032 was reviewed, revised to represent the project and submitted to the DP&I in March 2011 and was approved by DP&I on 6 June 2012.
Blasting				
viii	Exec Summary	The EA determined that if blasting occurred with a Maximum Instantaneous Charge of 1,681 kg over the entire proposed mining area, relevant criteria will be exceeded at a number of sensitive locations in defined areas to the north of Mt Arthur	C	The Blast Management Plan provides adequate direction for the operations in relation to achieving compliance with overpressure and vibration criteria at all sensitive receivers. (Blast Management Plan section 2.1 - Best Practice Control Measures). Blast management at the Mt Arthur site has complied with the regulatory criteria for overpressure and vibration therefore the Blast Management Plan is adequate for the Mt Arthur operations.

EA Page No.		Commitment	Conformance	Audit Comment
		Coal. Alternate blasting methods will be adopted in these areas to meet the relevant criteria at sensitive receivers. Should Mt Arthur Coal wish to conduct full scale blasting within these areas in the future, trial blasts will be conducted to demonstrate compliance with relevant criteria. At all other private receivers, blasting using current practices is predicted to meet relevant criteria.		
viii	Exec Summary	Appropriate criteria for Edinglassie and Rous Lench of 133 dBL overpressure and 10 mm/s vibration have been recommended for the Project in the absence of further research and consultation with the NSW Heritage Office. To achieve these criteria, Mt Arthur Coal will adopt additional controls, as required.	C	Blast Management Plan Appendix 3: Mt Arthur Coal – Blasting Technical Note describes the blast overpressure and vibration procedures and reduction strategies specifically for Edinglassie and Rous Lench. All blast monitoring data confirmed vibration results were less than 10mm/s and no overpressure results exceeded the 133dBL criteria.
Visual and Lighting				
ix	Exec Summary	Mitigation and management measures to reduce the visual impacts from the Project will include both onsite and individual offsite treatments. Mt Arthur Coal will prepare a guideline for treatment methods for primary and secondary view areas from affected residences; consultation requirements with residents in those key areas of high sensitivity, and action plans to mitigate visual impacts of the Project (depending on extent of visibility and its sensitivity). This will be detailed in a report to be submitted to DoP.	C	A Visual Impacts Management Report was prepared by AECOM (dated May 2011) and the report provided to Mt Arthur Coal: (a) Privately owned land and sensitive receptors are discussed in the Visual Impacts Management report, section 04 and Figure 13, prepared by AECOM May 2011. (b) Mitigation measures that could be implemented to reduce the visibility of the mine from these properties are presented in in the Visual Impacts Management Report, section 03 Mitigation Options. The Visual Impacts Management Report has been submitted to the Director-General (no response from DP&I had been received at the date of this audit).
Ecology				
xi	Exec Summary	Specific mitigation measures to be implemented for the Project to ensure the ongoing viability of threatened flora and fauna species and communities within the EA Boundary include: • Revision and consolidation of the existing Flora and Fauna Management Plans to include the Project and proposed Offset Strategy; • Replanting of some mine rehabilitation areas with local native plant species in order to provide additional flora and fauna habitats, in the long term; • The continuation of flora and fauna monitoring in accordance with the Mt Arthur Coal Environmental Management System to provide ongoing feedback about the condition of vegetation and habitat values across the Environmental Assessment	C	• Rehabilitation Strategy outlines the programs for maintenance and monitoring of flora fauna on rehabilitated areas and draft Biodiversity and Rehabilitation Management Plan Table 10 Ecosystem and Land Use Sustainability provides specific mitigation measures to be implemented to ensure the ongoing viability of threatened flora and fauna species and communities; • Annual flora and fauna monitoring undertaken at Mt Arthur Coal assesses diversity and habitat condition across remnant and rehabilitation areas representative of the ecological communities found on site. In addition to annual monitoring, a targeted survey of mining lease A171 was also conducted for Pine Donkey Orchid (*Diuris tricolor*), that is listed as an endangered population under the *Threatened Species Conservation (TSC) Act 1995.* During the survey, 33 *Diuris tricolor* clumps were identified (a 25 per cent increase on the number recorded in 2010 and a further twenty-two new clumps were identified in 2011. • Nest boxes have been established across the Mt Arthur Consolidated Project site and monitoring of 62 nest boxes (including 11 new nest boxes established in the Macleans Hill area) occurred during 2011. As in previous years, nest boxes were typically occupied by Common Brushtail Possums or bees. Unidentified bird chicks were found in one nest box. • Pre-clearance surveys are undertaken prior to disturbance of any new mine areas to identify any threatened flora and fauna for translocation to protected habitat areas where possible.

EA Page No.		Commitment	Conformance	Audit Comment
		Boundary; • Establishing nest boxes, where necessary, to maintain effective fauna habitat at Mt Arthur Coal; • Translocation of individuals of the threatened Tiger Orchid located in Mine Extension Area 5 to an appropriate Conservation Area; and • Continue to complete pre-clearance surveys within areas to be cleared and where possible, translocate detected threatened flora and fauna into protected habitat.		
Offset Strategy				
xii	Exec Summary	The Proposed Offset Areas will be implemented as part of the overall Mt Arthur Coal Complex Offset Strategy for impacts to biodiversity, with a 2:1 offset ratio for the loss of all native forest and woodland, and a 1:1 offset ratio for native derived grassland proposed to be cleared by the Project. Further to the Proposed Offset Areas, approximately 500 hectares of rehabilitated land will be returned to native woodland and forest after mining providing a total vegetation offset of 1,200 hectares.	C Ongoing	Rehabilitation Strategy section 3.7 Offset Areas described the offset areas that will be provided for in the Biodiversity Offset Strategy and Biodiversity and Rehabilitation Management Plan. The proposed vegetated areas for the Project total approximately 3,000 hectares and will be provided through the following: • Mount Arthur Conservation Area is approximately 105 ha in size of existing vegetation and covers the upper and lower slopes of Mount Arthur; • Saddlers Creek Conservation Area is approximately 295 ha in size of existing vegetation and includes the main channel of Saddlers Creek running along the southern and south eastern boundaries of the EA Boundary; • Thomas Mitchell Drive Off-site Offset Area which will offer protection and enhancement for 495 hectares of land to be established outside the Environmental Assessment Boundary and mining lease boundary comprised of existing vegetation; • Thomas Mitchell Drive Onsite Offset Area which will offer protection and enhancement of 222 hectares of land within the Environmental Assessment boundary with vegetation to be established; • Roxburgh Road 'Constable' Offset Area comprising 110 hectares of existing vegetation and vegetation to be established within it; • Additional Off-site Offset Area comprising 165ha of existing vegetation to be established within it; and • Rehabilitation Area comprising vegetation to be established over 1915ha of the disturbance area for open cut operations, encompassing habitat corridors and rehabilitated woodlands.
xii	Exec Summary	A management plan will be prepared to guide the long term management of flora and fauna within the Proposed Offset Areas and ensure the development and implementation of a scientifically based process for re-establishment of the White Box Yellow Box Blakely's Red Gum Woodland on Mt Arthur Coal's rehabilitation.	C	Flora and fauna management (outlined in the Flora and Fauna Management Plan MAC-ENC-MtP-027) is a component of site land management procedures prepared by Mt Arthur Coal and referenced in the Biodiversity and Rehabilitation Management Plan. The management of existing vegetation, revegetation of cleared or degraded areas, fire management, weed and feral animal control and management of the habitats of threatened species of flora and fauna, is described in Biodiversity and Rehabilitation Management Plan Table 10 (Ecosystem and Land Use Stability) where the criteria, performance measure and indicators are provided.
Aboriginal Heritage				
xiii	Exec Summary	The salvage and the protection of any remaining Aboriginal objects within EA Boundary will continue to be managed in accordance with a revised Aboriginal Archaeology & Cultural Heritage Management Plan in consultation with the local Aboriginal community and Department of	C Ongoing	An Aboriginal Heritage Management Plan MAC-ENC-MTP-042 was developed as part of Heritage Management Plan and prepared to satisfy the requirements of Project Approval Schedule 3 condition 45(c) and was submitted to DP&I on 30 March 2011. DP&I approved the Aboriginal Heritage Management Plan on 20 August 2012. The Aboriginal Heritage Management Plan was prepared in consultation with OEH and Aboriginal community representatives in accordance with the Aboriginal Cultural Heritage Consultation

EA Page No.		Commitment	Conformance	Audit Comment
		Environment & Climate Change.		*Requirements for Proponents, 2010.*
Surface water				
xiv	Exec Summary	Surface water will continue to be managed in accordance with the existing Site Water Management Plan which will be reviewed as needed to ensure that it meets the changing requirements of the Project.	C	The Water Management Plan MAC-ENC-MTP-034 to satisfy the Project Approval Schedule 3 condition 29 was prepared and submitted to the DP&I in March 2011. The Water Management Plan and associated Plans and Programs are considered adequate for assessment of the Mt Arthur Coal surface and groundwater quality.
xiv	Exec Summary	Flood bund protection will be constructed between Denman Road and the EA Boundary where the topography is less than the 1955 peak flood level in the Hunter River (considered representative of a 1 in 100 year flood event in Muswellbrook) plus 0.5 metre freeboard, at a height of approximately 1.4 metre within the former Whites Creek channel.	In progress	Conceptual design work has commenced for the flood protection bund with the detailed design anticipated to be completed by end 2012.
Groundwater				
xv	Exec Summary	Dependent on further investigations and consultation with NSW Dept of Water & Energy, a compacted clay filled cut-off trench, bentonite slurry trench, or other such mitigation measure as agreed will be installed across the small section of Whites and Fairford Creeks' alluvium in advance of the limit of mining to prevent any inflow of water from the Hunter River alluviums through the mine endwall into the pit.	In progress	Mt Arthur Coal has commenced conceptual design work across a section of Whites Creek and Fairford Creek alluvium. Detailed design is anticipated to be complete by Q4 2012, with construction to commence in 2013.
xv	Exec Summary	Additional monitoring piezometers will be installed to monitor depressurisation and groundwater quality as required.	C	Monitoring wells have been located in the alluvium, coal seams and fractured rock which represent key regional aquifers. A network of groundwater monitoring piezometers, comprising both vertically paired and stand-alone bores, are used by Mt Arthur Coal for environmental monitoring of water levels and groundwater quality. Additions to the current groundwater monitoring system have been undertaken including a network of paired monitoring bores in the alluvial aquifers associated with the Hunter River and Saddlers Creek.
xv	Exec Summary	Mt Arthur Coal will continue to monitor hydro-geomorphological conditions and scrutinise for evidence of any groundwater ingress or end-wall instability indicators as it progresses the previously approved mining towards the Hunter River alluvials.	C	The predictions of the groundwater model to recorded mine inflows and groundwater levels are to be compared on an annual basis. The groundwater model should be re- calibrated if the verification shows that it is not predicting to a satisfactory level of accuracy.
xvi	Exec Summary	Mining (other than that already approved in the Mt Arthur North Environmental Impact Statement) will not extend beyond a nominal 150 metre buffer zone from the Hunter River alluvials until agreement is reached with the Dept of Water and Energy regarding the installation of a lower permeability barrier along the point of connections of mining and the alluvium or other appropriate safeguards.	C	Mine survey plans provided showed the extent of mining compared to the mapped extent of alluvium with a set-back distance of greater than 150 m. The audit site inspection of the northern extent of the mining adjacent to the Hunter River alluvials and the southern extent adjacent to Saddlers creek confirmed no mining had occurred within 150 m of mapped alluvium.

EA Page No.		Commitment	Conformance	Audit Comment
xvi	Exec Summary	Mt Arthur Coal will undertake a census of privately owned groundwater bores to ascertain their current usage and provide a baseline against which to compare any future impacts.	C	A Census of the groundwater bores was completed by Hansen and Bailey on 8 September 2011 including bores 2-3km beyond the EA boundary as required by NSW Office of Water.
xvi	Exec Summary	A revision to the existing Water Management Plan to incorporate the Project will be undertaken, as required to ensure that it meets the changing requirements of the Project.	C	The Site Water Management Plan was reviewed and revised to ensure it met the requirements of the Project and was submitted to DP&I in March 2011. The Site Water Management Plan was approved by DP&I on 23 August 2012
Waste				
xvii	Exec Summary	The current Waste Management System will continue to be utilised for the Project with the Sewage Treatment Plant upgraded and or duplicated as required.	C	Waste management plans and procedures are maintained as part of the Mt Arthur Coal total waste management system. S68 applications for sewage treatment plant upgrades for the male and female bath houses, machinery repair bay, first aid room, project office and sediment ponds were lodged with the MSC for approval on 25 January 2012.
Soils and Land Resources				
xvii	Exec Summary	Best practice management measures will continue to be undertaken at Mt Arthur Coal to reduce the potential for degradation during mine rehabilitation to achieve the desired post-mining land capability and agricultural suitability outcome.	Ongoing	Overall the rehabilitation activities over the Mt Arthur Coal Complex are being addressed progressively and in accordance with the MOP and Rehabilitation Strategy.
Rehabilitation and Final Landform				
xvii	Exec Summary	Rehabilitated areas will continue to be managed in accordance with the methods currently in place at Mt Arthur Coal under the EMS which includes commitments to progressive rehabilitation and monitoring.	Ongoing	Overall the rehabilitation activities over the Mt Arthur Coal Complex are being addressed progressively and in accordance with the MOP and Rehabilitation Strategy.
xviii	Exec Summary	The translocation of topsoil and vegetative material containing an appropriate seed bank to rehabilite areas will be undertaken to assist in the recreation of 500 hectares of Box Gum Woodland understorey.	Ongoing	Refer to IES Report section 5.4.6.4.
Traffic and Transport				
xix	Exec Summary	The detailed design of the proposed Edderton Road realignment, and subsequent relocation and reconstruction of the Denman Road / Edderton Road intersection will be completed in consultation with the relevant regulators.	Ongoing	The RTA accepted the program for construction of the intersection upgrade of the New England Highway and Thomas Mitchell Drive and accepted the date of November 2012 for completion.
xix	Exec Summary	Temporary road closures required for safety purposes where blasting occurs within 500 metres of public roads will continue be undertaken in accordance with the Mt Arthur Coal Road Closure Management Plan.	C	Temporary road closures when blasting occurs within 500 metres of Denman Road are undertaken in accordance with the Mt Arthur Coal Denman Road Closure Management Plan MAC-ENC-MTP-024.
xix	Exec Summary	Additional train movements will impact the accessibility to the New England Highway for some residents at Antiene due to their reliance on a low level railway crossing. Ongoing liaison with	C	There is now only one privately owned block affected along Antiene Railway Station Road. No complaints have been received in relation to access to the New England Highway over the last 4 years relating to this matter and the requirements under Project Approval Schedule 3 condition 48.

EA Page No.		Commitment	Conformance	Audit Comment
		adjacent industry and these residents will be undertaken to address access to properties along Antiene Railway Station Road.		
Justification				
xix	Exec Summary	Due to the ongoing commitment to best practice environmental management, the progression of mining will not greatly extend Mt Arthur Coal's current environmental footprint despite the proposed increase in the scale of operations.	Noted	
xix	Exec Summary	In particular, the proposed mine plan will ensure that a sufficient section of the eastern flank of Macleans Hill will remain to assist in reducing impacts from mining operations to receivers to the east and north of Mt Arthur Coal.	C	Macleans Hill Cultural Heritage Management Plan MAC-ENC-MTP-018, March 2011 provides a staged heritage management program to facilitate the salvage of Aboriginal sites within the Macleans Hill mining area. Mining in the Macleans Hill area (Mine Extension 1) will impact on the Macleans Hill Heritage Management Zone (HMZ) established under the Mt Arthur North Development Consent (DA 144-05-2000, approved 1 May 2001). An alternative Offset Area has been developed as part of the Project to mitigate the impacts to the HMZ.
xix	Exec Summary	To offset the ecological and Aboriginal archaeological heritage impacts of the progression of mining, Mt Arthur Coal is proposing to establish an additional 495 hectare Proposed Offset Area to the east of the Project, which contains various threatened fauna and flora species and Aboriginal heritage sites. It is envisaged that this Offset Area, due to its accessibility will accommodate teaching and research and will be an ideal location for the proposed Aboriginal Cultural Heritage Keeping Place which is to be established by Mt Arthur Coal under previous planning approvals.	C	The offset areas including the additional offsite offset areas specified in the EA and Project Approval condition 36 are included in the Biodiversity and Rehabilitation Management Plan (draft) have been identified. Establishment of long-term security has not yet been triggered (schedule 3, condition 39)
xx	Exec Summary	Further to this, Mt Arthur Coal is proposing to establish an additional 222 hectare Proposed Offset Area within the Environmental Assessment Boundary for ecological offsets. Approximately 500 hectares of land will also be returned to native woodland and forest after mining.	C Ongoing	
General Commitment				
1	1.1	HVEC is committed to maintaining high standards of environmental performance to meet and where feasible, exceed internal corporate commitments, regulatory requirements and external stakeholder expectations. In some instances, this commitment extends to global leading practice to minimise impacts on the environment and community. Since commencement of operations, HVEC has continued to meet its environmental monitoring predictions and criteria in all areas.	Noted	

<table>
<tr><th colspan="2">EA Page No.</th><th>Commitment</th><th>Conformance</th><th>Audit Comment</th></tr>
<tr><td>3</td><td>2.1</td><td>HVEC is committed to implementing leading environmental practice onsite and investigating innovative community and environmental management measures throughout the development of the Project.</td><td>Noted</td><td></td></tr>
<tr><td colspan="5">Offset Strategy</td></tr>
<tr><td>24</td><td>3.5</td><td>Corridors will be established to provide habitat linkages by planting native species in undisturbed and rehabilitated areas.</td><td>C
Ongoing</td><td>The Biodiversity and Rehabilitation Management Plan has been prepared to develop and integrate conservation and offset areas with local and regional vegetation corridors (Table 1 and section 2.1.6).</td></tr>
<tr><td>24</td><td>3.5</td><td>The Edderton Road Revegetation Area located to the west of Edderton Road will be revegetated in order to enhance the ecological corridor function in the Synoptic Plan (see Figure 6).</td><td>Noted</td><td>This has not been commenced. Can it be assessed as ‘noted’?</td></tr>
<tr><td colspan="5">Approvals</td></tr>
<tr><td>25</td><td>3.6</td><td>Existing planning approvals which will be surrendered by HVEC following the grant of the new Project Approval at an appropriate time as agreed with DoP, are indicated with an asterisk.</td><td>C</td><td>Refer to Project Approval Schedule 2 condition 8:
Hunter Valley Energy Coal Pty Ltd submitted a notice of surrender of the development consents granted under Part 4 of the EP&A Act to the Minister for Planning on 30 September 2011. The Notice listed all Part 4 development consents to be surrendered under DA 09_0062 with the exception of the Bayswater No 3 development consent (DA 210/93). HVEC had obtained approval from the Director-General to surrender the Bayswater No 3 development consent at a later date.</td></tr>
<tr><td colspan="5">EMS</td></tr>
<tr><td>28</td><td>3.7</td><td>These plans and procedures are regularly reviewed, communicated to the workforce and audited for compliance and to ensure high levels of environmental performance.</td><td>C</td><td>The management plans and programs have been reviewed and revised as required to provide documentation that is relevant to the current development and to ensure best environmental performance. The plans and programs have been audited for compliance as part of the Annual Review and within this audit scope. The monitoring program results are reviewed as part of the Annual Review to assess and report performance of the Mt Arthur Coal operations.
Induction and training of Mt Arthur personnel has occurred in accordance with the certified Environmental Management System and the Environmental Management Strategy communication procedures.</td></tr>
<tr><td colspan="5">Water</td></tr>
<tr><td>51</td><td>5.1.4</td><td>Mt Arthur Coal will apply for a WAL as required from the Department of Water and Energy (DWE) for any additional groundwater / surface water extracted as part of the Project.</td><td>C</td><td>Mt Arthur Coal has obtained Water Access Licenses as required for the extraction of water for the project (refer to section 5.8.3 of this audit report).
Summary of Water Access Licence approvals for open cut interception of groundwater (Water Management Act 2000)
<table>
<tr><th>Category</th><th>Water Access Licenses (WAL’s)</th><th>Expiry Date</th></tr>
<tr><td>General security</td><td>19</td><td>Perpetuity</td></tr>
<tr><td>High security</td><td>10</td><td>Perpetuity</td></tr>
<tr><td>Supplementary</td><td>4</td><td>Perpetuity</td></tr>
<tr><td>Domestic and livestock</td><td>4</td><td>Perpetuity</td></tr>
<tr><td>Aquifer</td><td>3</td><td>Perpetuity</td></tr>
</table>
Approximately 13 per cent of water was sourced from the Hunter River, drawn in the form of WALs (see Table 18). Water sourced from the Hunter River decreased by 785.9 ML in comparison to the previous year, due to increased rainfall and localised catchment runoff.</td></tr>
</table>

<table>
<tr><th colspan="2">EA Page No.</th><th>Commitment</th><th>Conformance</th><th>Audit Comment</th></tr>
<tr><td></td><td></td><td></td><td></td><td>Additional water access licences (WALs) were purchased with some properties throughout the year (Domestic and livestock WAL's). Where plans indicated that there would be sufficient water stored onsite, water allocations from the Hunter River were offered to lease holders and near-neighbours as a temporary transfer to ensure adequate land and water management of non-mining lands around the operation.</td></tr>
<tr><td>51</td><td>5.1.5</td><td>In accordance with Part 5 of the Water Act, Mt Arthur Coal will apply for a licence from DWE for any extraction of water from an aquifer via a bore licence, as required.</td><td>C</td><td>Mt Arthur Coal has obtained bore licenses as required for the extraction of water for the project (refer to section 5.8.3 of this audit report).
<table>
<tr><th>Category</th><th>Bore Licenses (BL)</th><th>Expiry Date</th></tr>
<tr><td>Works Approval</td><td>20WA201128
20WA203496</td><td>30 Jun 2017
1 May 2017</td></tr>
<tr><td>Groundwater</td><td>20BL171995
20BL168155
20BL170620
20BL171156</td><td>04 Nov 2013
27 May 2012
04 Dec 2016
Perpetuity</td></tr>
<tr><td>Groundwater (monitoring bores)</td><td>20BL171833
20BL169992
20BL169989</td><td>Perpetuity
Perpetuity
Perpetuity</td></tr>
</table></td></tr>
<tr><td colspan="5">Mining</td></tr>
<tr><td>52</td><td>5.1.6</td><td>Mt Arthur Coal's Mining Operations Plan (MOP) will be revised to incorporate components of the Project as required.</td><td>C</td><td>Mt Arthur Coal Integrated MOP Amendment A, September 2009 and Mt Arthur Coal Complex Open Cut Mining Operations Plan FY 2012 to FY have been prepared to satisfy the requirements of the Mining Lease conditions. The MOP has been submitted to and approved by DI&I/DITRIS.</td></tr>
<tr><td colspan="5">EPL</td></tr>
<tr><td>52</td><td>5.1.9</td><td>Mt Arthur Coal will seek variations to these licences under the POEO Act to incorporate the relevant components of the Project, as required.</td><td>C</td><td>Mt Arthur Coal have a current Environment Protection Licence 11457 that has had recent Variations on 12 November 2009 and 8 August 2011 to incorporate the relevant components of the Project.</td></tr>
<tr><td colspan="5">Air quality</td></tr>
<tr><td>80</td><td>8.1.3</td><td>Mt Arthur Coal will review the existing Air Quality Management Plan (AQMP) for the site to incorporate the following practical management measures which may be implemented as required to ensure these predictions are met at private receivers:
A review of the existing air quality monitoring program;
The use of a dust suppressant product (or other comparably effective alternatives) on all active coal and overburden haul roads where necessary;
Minimising development of minor haul roads;
Ripping and revegetating of obsolete haul roads when these are no longer required; · Clearly delineating all haul road areas to ensure vehicular disturbance is minimised, particularly when these cross overburden emplacement areas; and</td><td>C</td><td>The Air Quality Management Plan (AQMP) was reviewed and revised to satisfy Project Approval Schedule 3 condition 24(b) and submitted to the DP&I in March 2011. The revision included
A review of the existing air quality monitoring program – Air Quality Management Plan section 3.2 and preparation of the Air Quality Monitoring Program;
The use of a dust suppressant product (or other comparably effective alternatives) on all active coal and overburden haul roads where necessary – AQMP Table 1 Haul Roads and Minor Roads;
Minimising development of minor haul roads – AQMP Table 1 Minor Roads;
Ripping and revegetating of obsolete haul roads when these are no longer required - AQMP Table 1 Haul Roads and Minor Roads;
Clearly delineating all haul road areas to ensure vehicular disturbance is minimised, particularly when these cross overburden emplacement areas – AQMP Table 1 Haul Roads; and
Extending the automatic water spray system to cover the additional coal stockpile areas proposed (or equivalent) – AQMP Table 1 Coal Stockpiles.</td></tr>
</table>

<table>
<tr><th colspan="2">EA Page No.</th><th>Commitment</th><th>Conformance</th><th>Audit Comment</th></tr>
<tr><td></td><td></td><td>• Extending the automatic water spray system to cover the additional coal stockpile areas proposed (or equivalent).</td><td></td><td></td></tr>
<tr><td colspan="5">Greenhouse Gas</td></tr>
<tr><td>80</td><td>8.1.3</td><td>Mt Arthur Coal will continue to monitor greenhouse gas emissions to ensure that these emissions are kept to the minimum practicable level.</td><td>C</td><td>A Greenhouse Gas and Energy Efficiency Management Plan for the Mt Arthur Coal Consolidated Project had been developed and energy efficiency opportunities are pursued with emissions reporting annually to the Commonwealth Government under the Energy Efficiency Opportunity Assessment Act 2006 and the National Greenhouse and Energy Reporting Act 2007.</td></tr>
<tr><td colspan="5">Spontaneous Combustion</td></tr>
<tr><td>80</td><td>8.1.3</td><td>Mt Arthur Coal will continue to monitor and manage spontaneous combustion events through the life of the Project in accordance with the Mt Arthur Coal EMS.</td><td>C</td><td>Mt Arthur Coal has implemented a spontaneous combustion control program to prevent, monitor, control and report outbreaks of spontaneous combustion.
Treatment included placing inert overburden material over affected areas. The material used consisted mostly of clays which can contain residual moisture and act as a seal to prevent oxygen penetration.</td></tr>
<tr><td colspan="5">Noise</td></tr>
<tr><td>90</td><td>8.2.3</td><td>Mt Arthur Coal will continue to ensure that the limits predicted in Table 25 are met at private receivers through the implementation of onsite management activities and continual improvement.</td><td>C</td><td>Table 25 noise limit predictions are expressed as maximum intrusive noise levels under prevailing night time conditions.
Environmental Assessment Table 25: Receiver Zone Predicted Maximum Intrusive Noise Levels under Prevailing Night Conditions
<table>
<tr><th>Receiver Zone</th><th>Location</th><th>Predicted Intrusive Level (LAeq 15 min (dBA))</th></tr>
<tr><td>A</td><td>Antiene Estate</td><td>42</td></tr>
<tr><td>B</td><td>Skelletar Stock Route, Thomas Mitchell Drive, Denman Rd</td><td>41</td></tr>
<tr><td>C</td><td>C Racecourse Road</td><td>35</td></tr>
<tr><td>D</td><td>Denman Rd North west, Roxburgh Vineyard Roxburgh Rd</td><td>40</td></tr>
<tr><td>E</td><td>South Muswellbrook (incl Development Area)</td><td>35</td></tr>
<tr><td>F</td><td>Denman Road West, Roxburgh Vineyard (west)</td><td>38</td></tr>
<tr><td>G</td><td>East Antiene</td><td>42</td></tr>
</table>
Noise impact assessment criteria are expressed in Table 2 of the Project Approval:
<table>
<tr><th>Location</th><th>Day</th><th>Evening</th><th>Night</th><th></th></tr>
<tr><th></th><th>LAeq (15min)</th><th></th><th>LA1 (1 in)</th><th></th></tr>
<tr><td>A – Antiene Estate</td><td>37</td><td>40</td><td>38</td><td>45</td></tr>
<tr><td>B – Skelletar Stock Route, Thomas Mitchell Drive, Denman Rd East</td><td>39</td><td>38</td><td>37</td><td>45</td></tr>
<tr><td>C – Racecourse Rd</td><td>41</td><td>40</td><td>39</td><td>45</td></tr>
<tr><td>D – Denman Rd NW, Roxburgh Vineyard (NE), Roxburgh Rd</td><td>37</td><td>36</td><td>35</td><td>45</td></tr>
<tr><td>E–Sth Muswelbrook</td><td>39</td><td>39</td><td>39</td><td>45</td></tr>
<tr><td>F – Denman Road West, Roxburgh Vineyard (west)</td><td>37</td><td>36</td><td>35</td><td>45</td></tr>
<tr><td>G – East Antiene</td><td>41</td><td>40</td><td>39</td><td>45</td></tr>
</table>
Implementation of the Noise Management Plan and monitoring conducted in accordance with the Noise Monitoring Program, have indicated that noise emissions from the Mt Arthur Project operations have</td></tr>
</table>

EA Page No.		Commitment	Conformance	Audit Comment
				complied with the noise impact assessment criteria. The results reported in the Quarterly Noise Monitoring Reports prepared by Global Acoustics conclude that the noise levels from Mt Arthur Coal complied with the $LAeq_{(15\ minute)}$ and $LA1_{(1\ minute)}$ development consent night-time criteria at all monitoring locations during the Quarterly surveys in 2011. The accuracy of Mt Arthur Coal's mine noise prediction model is reviewed annually by the acoustic consultants. Re-modelling has been focused on winter nights, where atmospheric conditions generally cause higher noise levels and noise impacts are predicted based on planned mining operations. Modelled predictions show that the acoustic environmental change from winter 2011 to winter 2012 would reduce by approximately 3dB at the Denman Road West monitor (NC01). The expected reduction is a result of operations in the northern pits shifting further below the natural surface which will result in more topographical shielding in this area. Acoustic environmental conditions are not expected to change at Mt Arthur Coal's other monitoring locations. The noise limits predicted in the Environmental Assessment Table 25 have not been exceeded in the majority of the quarterly monitoring surveys (refer to section 5.7.3 table 8) during 2010 and 2011.
Blasting				
92	8.3.3	Blasting techniques will be investigated as a part of mine planning and as new technology is available.	C	The Mt Arthur Blast Management Plan includes an Appendix that discusses mine planning and as blasting new technology and practices. The Plan is reviewed and updated in accordance with the EMS and section 8 of the Blast Management Plan.
92	8.3.3	A combination of the following practical management measures will be implemented as required to ensure predictions are met at historic homesteads and at private receivers: • Vibration-related structural damage criteria as described above in Table 26 will be applicable to the Edinglassie and Rous Lench Homesteads; • Operational modifications (e.g. reducing bench heights and the use of electronic detonators to provide accurate timing of charges) will be investigated, and controls implemented to ensure blasting in management zones will not result in exceedances of criteria; • Continuation of use of Sonic Detection and Ranting (SODAR) or similar effective system to assist in determining appropriate meteorological conditions for a combination of the following practical management measures will be implemented as required to ensure predictions are met at European heritage homesteads and at private receivers; and • Undertake ongoing investigations to achieve further improvements to current blasting practices, including the application of new technologies, particularly in areas to the north where current blasting practices have the potential to impact on the Edinglassie and	C	No blast overpressure or peak particle velocity (ppv) ground vibration monitoring results exceeded the criteria in Schedule 3 condition 10 during 2010 and 2011. • Table 26 of the EA Main Text specified a maximum overpressure (dBL) of 133 and ground vibration criteria of 10mm/s Edinglassie and Rous Lench Homesteads. These criteria were not exceeded during 2011. • Blast Management Plan Section 2.1 describes best practice control measures to be implemented at Mt Arthur Coal to minimise air blast overpressure, ground vibration levels, flyrock, fume, dust and odour from blasting. Appendix 2 of Blast Management Plan provides a discussion of blasting vibration and overpressure and reduction strategies for management of overpressure and vibration at sensitive receptors. • A pre-blast environmental assessment is prior to each blast and this assessment includes a review of wind speed and direction, the strength of temperature inversions (if present) and the location and size of the blast. • A new secondary inversion modelling tool was also implemented during 2011 to assist pre-blast assessment.

EA Page No.		Commitment	Conformance	Audit Comment
		Rous Lench historic homesteads and on neighbouring privately owned receivers.		
Offset Strategy				
120	8.6.4	The Proposed Offset Areas will be conserved in the long term pursuant to a legal mechanism, such as under section 88 of the Conveyancing Act 1919, determined in consultation with DoP, and appropriate to the offset commitment.	Not yet required	The offset commitment requirements are not due to be in place until September 2012 (under Project Approval condition 39(a), and September 2014 (Project Approval condition 39(b).
Ecology				
123	8.6.7	The existing flora and fauna management program will be revised to guide the long term management of flora and fauna over the entire EA boundary, with emphasis on existing conservative areas, the Proposed Offset Areas and Proposed Regenerated Woodland. The management program will ensure the development and implementation of a scientifically based process for the establishment of Box Gum Woodland understorey and in the longer term, over-storey in the Project rehabilitation areas. The management plan will prescribe management of existing vegetation, revegetation of cleared or degraded areas, fire management, weed and feral animal control and management of the habitats of threatened species of flora and fauna.	In progress	Flora and fauna management (outlined in the Flora and Fauna Management Plan MAC-ENC-MtP-027) is a component of site land management procedures prepared by Mt Arthur Coal and referenced in the Biodiversity and Rehabilitation Management Plan. The management of existing vegetation, revegetation of cleared or degraded areas, fire management, weed and feral animal control and management of the habitats of threatened species of flora and fauna, is described in Biodiversity and Rehabilitation Management Plan Table 10 (Ecosystem and Land Use Stability) where the criteria, performance measure and indicators are provided.
Aboriginal Heritage				
129	8.7.3	Advance the creation of the Mount Arthur and Saddlers Creek Conservation Areas, and incorporate management planning for those areas into an ACHMP; and	Not yet activated	The offset and Conservation Areas commitment requirements are not due to be in place until September 2012 (under Project Approval condition 39(a), and September 2014 (Project Approval condition 39(b).
129	8.7.3	Progress the implementation of the management commitments made in the MAU (previously committed to occur only at commencement of long-wall mining), and improve upon where possible as listed below: • Establishment of the proposed Saddlers Creek Conservation Agreement to be conserved in perpetuity for its Aboriginal cultural heritage values. The proposed Conservation Area will be managed in accordance with the requirements of the Conservation Agreement; • Fund and construct a Keeping Place within the Proposed Offset Area (rather than the Saddlers Creek Conservation Area), during the period of this Project. The Keeping	In progress	The offset and Conservation Areas commitment requirements are not due to be in place until September 2012 (under Project Approval condition 39(a), and September 2014 (Project Approval condition 39(b). The establishment of the Mt Arthur and Saddlers Creek Conservation Areas is progressing, with no mining activity or other disturbance of the proposed areas occurring by Mt Arthur Coal during the 2010 to 2011 period. A meeting was held between Mt Arthur Coal and Aboriginal stakeholders in June 2011 and to discuss the Mt Arthur Coal operation's cultural heritage and land management activities and to obtain input from the stakeholders regarding a Keeping Place, training and employment, and community involvement mechanisms.

EA Page No.		Commitment	Conformance	Audit Comment
129	8.7.3	Place will store artefacts salvaged as part of the project and will be staffed an average of 50 days per year by appropriately trained Aboriginal community representatives, or as otherwise agreed with Mt Arthur Coal; • Establish within the Proposed Offset Area, a facility suitable for use by the Aboriginal community when using the area for teaching purposes during the period of this project; • Fund the training of five representatives from the registered Aboriginal stakeholder groups to undertake 'Collections Training' at the Australian Museum (or similar training) for staffing of the proposed Keeping Place, during the period of this project; • Offer training for one member of each of the registered Aboriginal stakeholder groups for the project in relation to site recording and artefact recording and basic analysis; and • Establish a Management Committee including at least five representatives of Aboriginal stakeholder groups to guide the ongoing management of sites within the EA Boundary for the duration of this project.		
129	8.7.3	The existing ACHMP will be revised for the Project inclusive of the mitigation measures listed above to ensure that it meets the changing requirements of the Project.	C	***Refer to Page xiii Executive Summary*** An Aboriginal Heritage Management Plan MAC-ENC-MTP-042 was developed as part of Heritage Management Plan and prepared to satisfy the requirements of Project Approval Schedule 3 condition 45(c) and was submitted to DP&I on 30 March 2011. DP&I approved the Aboriginal Heritage Management Plan on 20 August 2012. The Aboriginal Heritage Management Plan was prepared in consultation with OEH and Aboriginal community representatives in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents, 2010.*
Non Aboriginal Heritage				
133	8.8.3	The Belmont Homestead Complex will be impacted by the Project. Consistent with the MAU Planning Approval 06_0091, Mt Arthur Coal will undertake an archival recording of the site prior to any disturbance.	Noted	As no disturbance of the Belmont Homestead is planned the archival recording of the site prior to any disturbance has not yet been undertaken.
133	8.8.3	The Beer Homestead slab hut will be relocated as part of the Project. Mt Arthur Coal will undertake an archival recording of the site prior to any relocation.	Noted	***(Refer also to Project Approval Statement of Commitment 24)*** The Beer Homestead will remain in its current location for as long as possible before predicted mining impacts necessitate its removal. Upon planned impact to the Beer Homestead, a detailed plan for the relocation of the Homestead will be developed in accordance with Schedule 3, Condition 45, clause (c), subclause 2 of Project Approval 09_0062, and NSW Heritage Office guidelines on archival recording.
133	8.8.3	The corridors of the proposed Edderton Road realignment are such that flexibilities in road	In progress	The Edderton Road Realignment Project is currently in the early planning phase. The Beer and Belmont Homesteads have been identified in the constraints analysis for assessment of possible road realignment

EA Page No.		Commitment	Conformance	Audit Comment
		design have been allowed for and any construction impacts to the heritage items located within the proposed development area can probably be avoided. Each of these sites will therefore be clearly delineated as required to prevent any inadvertent impacts occurring during road construction activities as part of the Project. Further assessment will be undertaken when detailed road design is undertaken if necessary.		route.
133	8.8.3	Both the Edinglassie and Rous Lench sites may potentially be impacted by blasting for the Project. The existing management plans in place for these sites will therefore be revised in accordance with the blasting vulnerability assessment to ensure that they are sufficient to cover any additional impacts that may result from the Project and the process of ongoing structural review.	C	Section 3.2 Draft Conservation Management Plan for Edinglassie and Rous Lench (schedule 3, condition 45). The assessment of blast vibration vulnerability was conducted for the Edinglassie and Rous Lench sites by Bill Jordan & Associates in February 2012 and concluded that "blast vibrations experienced at the Edinglassie and Rous Lench sites at present do not appear to be presenting any significant risk of causing building damage to sound fabric. No revision of the management plans has been required as a result of the blast vibration vulnerability assessments.
133	8.8.3	The revised heritage management plans for Edinglassie and Rous Lench will include the blasting criteria of 10 mm/s and 133 dBL overpressure, as recommended in Appendix H by Bill Jordan and Associates (2009) in the absence of further research and consultation with the NSW Heritage Office.	C	The revised European Heritage Management Plan includes the blasting vibration criteria of 10 mm/s and overpressure maximum of 133 dBL as recommended in Appendix H by Bill Jordan and Associates (2009) and procedures and programs for minimisation of blast impacts on the properties. Blast Management Plan Appendix 3 includes a Mt Arthur Coal – Blasting Technical Note that describes the blast overpressure and vibration procedures and reduction strategies specifically for Edinglassie and Rous Lench. All blast monitoring data except for one blast confirmed vibration results were less than 10mm/s. No overpressure results exceeded the criteria.
133	8.8.3	The existing Mt Arthur Coal documents and programs in place for the management of blasting and identified heritage items will be revised to ensure that it meets the changing requirements of the Project.	C	The Blast Management Plan MAC-ENC-MTP-015 and Blast Monitoring Program MAC-ENC-PRO-055 have been revised to meet the requirements of the consolidated project. No further changes to blast management have occurred in the absence of any further research or consultation with the NSW Heritage Office.
Surface water				
141	8.9.4	The successful performance of the water management system will involve the utilisation of the water balance model to predict future water demand and supply requirements.	C	The Site Water Balance MAC-ENC-PRO-059 prepared to satisfy Project Approval Schedule 3 condition 30, was developed as part of the Site Water Management Plan MAC-ENC-MTP-034. An overview of key inputs and outputs of the water balance, tracked on a monthly basis, show that Mt Arthur Coal is generally a net generator of water. The Site Water Balance is regularly monitored at Mt Arthur Coal using a series of flow meters with volumes surveyed monthly to monitor the use and transfer of water between key water storages. A quantitative water model is used to predict the mine water balance in advance of the mining operations.
141	8.9.4	A geomorphological survey will be conducted along those reaches of creeks that will be mined through and which are planned for reinstatement over mine overburden backfill. This data will be required for the ultimate design of creek reconstruction. Design of these structures will be undertaken in consultation with DWE at the relevant time, as required.	C	The design of mine progression and disturbance of reaches of the various creeks by mining activities is described and managed under the approved Mt Arthur Coal Complex Mining Operations Plans (MOP). The design of the creek diversions includes geomorphological considerations to enable reinstatement over mine overburden emplacement areas following completion of mining activities. Water management is described in section 3.5 of the MOP and in the Site Water Management Plan MAC-ENC-MTP-034 under Project Approval Schedule 3 condition 29. The latest MOP for FY 2012 to FY2012 was prepared in consultation with the relevant authorities.

EA Page No.		Commitment	Conformance	Audit Comment
141	8.9.4	A final void management plan will be prepared as part of the closure planning process at Mt Arthur Coal to ensure all management strategies for the voids are documented and known.	Noted	The Final Void Management Plan will be prepared as part of the Mine Closure Plan.
Groundwater				
150	8.10.4	The revision of the Site Water Management Plan will need to incorporate the following, as relevant: • The progressive replacement of monitoring bores which will be mined out; • The progressive replacement of monitoring bores which are no longer accessible or unable to be monitored; • Installation of three paired monitoring bores (i.e. one in the alluvium and the second in the underlying Permian strata) within the Saddlers Creek alluvium to confirm predictions if it is found that these predictions cannot be measured through existing monitoring bores installed for MAU; • Incorporate a program to monitor the seepage rates associated with the potential leakages from the Hunter River alluvium. This will include the installation of some additional paired bores (i.e. one in the alluvium and the second in the underlying Permian strata) on the Hunter River alluvial areas where impacts were predicted to quantify the leakage from the Hunter River alluvials; and • Monitoring bores installed to monitor influences with the alluvium will be installed with data loggers to monitor groundwater fluctuations on a daily basis.	C	The site Water Management Plan has been revised and addresses each of the components outlined in the commitments: • Replacement of monitoring bores that are destroyed by active mining activities will occur where relevant following completion of mining in the affected area. • The Mt Arthur Coal groundwater monitoring program is extensive (consisting of 48 groundwater monitoring sites) and replacement of monitoring bores that are inaccessible or unable to be monitored will occur where necessary to maintain the integrity of the groundwater monitoring program. • A network of groundwater monitoring bores, comprising both vertically paired and stand-alone bores, are used by Mt Arthur Coal wholly for environmental monitoring of water levels and groundwater quality. Additions to the current groundwater monitoring system have been undertaken including a network of paired monitoring bores in the alluvial aquifers associated with the Hunter River and Saddlers Creek. • A network of paired monitoring bores has been installed in the alluvial aquifers associated with the Hunter River and Saddlers Creek. • The Groundwater Assessment in the EA recommended installation of paired monitoring wells to provide one well in the alluvium and one in the coal/fracture rock, with piezometric data loggers installed at each location. The purpose of these paired wells was to monitor for potential leakage from the alluvium to the fractured rock. The paired wells are installed prior to mining encroaching within 150 m of the alluvium but the data loggers have not been installed. The data loggers have been installed in the GW38A, GW38P and GW40A Hunter River alluvial bores.to allow at least 12 months of baseline data to be collected in advance of the mining front.
150	8.10.4	During the installation of the additional monitoring bores proposed, permeability tests will be undertaken to obtain further knowledge of the permeability of the overburden material to establish a high degree of confidence of the leakage rates from the alluvial aquifer to the underlying coal seams.	C	Mt Arthur Coal continue to monitor hydro-geomorphological conditions and scrutinise for evidence of any groundwater ingress or end-wall instability indicators as it progresses the previously approved mining towards the Hunter River alluvials. No evidence of groundwater ingress or end-wall instability was indicated as mining progresses towards the Hunter River alluvials.
150	8.10.4	In relation to mining the alluvials associated with Whites Creek, Mt Arthur Coal will continue to monitor hydro-geomorphological conditions and scrutinise for evidence of any groundwater ingress or end-wall instability indicators as it progresses the previously approved mining	C	***(Refer also to Statement of Commitment 8)*** Mine survey plans were reviewed showing the extent of mining compared to the mapped extent of alluvium with a set-back distance of greater than 150m. No mining was observed to have occurred within 150 m of mapped alluvium.

EA Page No.		Commitment	Conformance	Audit Comment
		towards the Hunter River alluvials.		
150	8.10.4	Mining (other than that already approved in the MAN EIS) will not extend beyond a nominal 150 m buffer zone from the Hunter River Alluvials as shown in Figure 32 until agreement is reached with DWE regarding the installation of a lower permeability barrier along the point of connections of mining and the alluvium or other appropriate safeguards.	C	***(Refer also to Statement of Commitment 8)*** Mine survey plans were reviewed showing the extent of mining compared to the mapped extent of alluvium with a set-back distance of greater than 150m. No mining was observed to have occurred within 150 m of mapped alluvium.
150	8.10.4	In the unlikely event of water levels in existing landholder bores declining as a consequence of the Project, leading to an adverse impact on water supply, the supply will be substituted by Mt Arthur Coal in consultation with the landholder either by deepening the bore, construction of a new bore or providing comparable water from an external source.	C	***(Refer also to Statement of Commitment 9)*** Mt Arthur Coal has reviewed the status of privately owned groundwater bores to ascertain their current usage and provide a baseline against which to compare any future impacts. In the event of interruption to water supply resulting from the Project, an alternative water supply will be provided, until such interruption ceases.
Rehabilitation and Final Landform				
164	8.14.3	The following strategies will be implemented during mine rehabilitation to achieve the desired post mining land capability and agricultural suitability outcome: • Materials will be stripped to indicated levels in a moist condition and placed directly onto reshaped areas where practical; • Where topsoil must be stockpiled, efforts will be made to reduce compaction with as coarsely textured a condition as possible; will be a maximum of 3 m in height and if stored for greater than 12 months seeded and fertilised and treated for weeds prior to respreading at around 0.1 m in depth; • An inventory of designated areas and available soil will be maintained to ensure adequate topsoil materials are available for planned rehabilitation activities; • Thorough seedbed preparation will be undertaken to ensure optimum establishment and growth of vegetation with all topsoiled areas lightly contour ripped (after topsoil spreading) to create a "key" between the soil and the spoil. Ripping will be undertaken on the contour and the tynes lifted for approximately 2 m every 200 m to reduce the potential for channelised erosion, preferably when soil is moist. The respread	C	The Rehabilitation Strategy prepared to satisfy Project Approval Schedule 3 condition 42 was submitted to the DP&I on 30 March 2011 and approved on 21 September 2011. The Rehabilitation Strategy was prepared by a Rehabilitation Strategy Team endorsed by the Director-General and addresses the commitments outlined in in the Environmental Assessment.

EA Page No.		Commitment	Conformance	Audit Comment
		topsoil surface will be scarified prior to, or during seeding, to reduce run-off and increase infiltration via tilling with a fine-tyned plough or disc harrow;		
169	8.15.4	Rehabilitation monitoring will include regular inspections of rehabilitated areas to assess: • Structural stability; · The effectiveness of erosion and sediment control measures; • Revegetation success and the establishment of Box Gum understorey and fauna habitat; and • The effectiveness of weed and pest management measures.	C	The rehabilitated areas at Mt Arthur Coal are regularly inspected for stability, erosion and weed infestation. The site inspection conducted during the audit considered that sediment control across the Mt Arthur Coal site was satisfactory. The inspections included waste dumps CD3 and VD1, Windmill and Macleans topsoil stockpile areas, McDonalds Pit rehabilitation, Whites Creek Diversion, and the batter of the infrastructure area behind the main office. It was noted that erosion management particularly related to reactive soils needs to be continually monitored on the spoil emplacement areas and remedial works conducted when erosion is identified.

Attachment C

Environment Protection Licence - 11457

<table>
<tr><th>EPL No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td>1</td><td>Administrative Conditions</td><td></td><td></td><td></td></tr>
<tr><td>A1</td><td>What the licence authorises and regulates</td><td></td><td></td><td></td></tr>
<tr><td>A1.1</td><td>This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.
Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.
<table>
<tr><th>Schedule Works</th><th>Fee Based Activity</th><th>Scale</th></tr>
<tr><td>Chemical Storage</td><td>Chemical storage waste generation</td><td>> 5-100 tonnes generated or stored</td></tr>
<tr><td>Coal Works</td><td>Coal Works</td><td>>5,000,000 tonnes handled</td></tr>
<tr><td>Mining for Coal</td><td>Mining for Coal</td><td>>5,000,000 tonnes produced</td></tr>
</table></td><td></td><td>C</td><td>ROM Coal extracted from the Mt Arthur Mine Complex during 2010 and January to October 2011 was:
<table>
<tr><th>Month 2011</th><th>Tonnage</th></tr>
<tr><td>Jan to Dec 2010</td><td>15,098,447</td></tr>
<tr><td>January 2011</td><td>1,475</td></tr>
<tr><td>February 2011</td><td>1,459</td></tr>
<tr><td>March 2011</td><td>2,010</td></tr>
<tr><td>April 2011</td><td>1,188</td></tr>
<tr><td>May 2011</td><td>1,532</td></tr>
<tr><td>June 2011</td><td>1,527</td></tr>
<tr><td>July 2011</td><td>1,941</td></tr>
<tr><td>August 2011</td><td>1,498</td></tr>
<tr><td>September 2011</td><td>1,714</td></tr>
<tr><td>October 2011</td><td>1,781</td></tr>
<tr><td>November 2011</td><td>1,584</td></tr>
<tr><td>December 2011</td><td>1,888</td></tr>
</table>
The ROM coal extracted does not exceed the maximum scale approved for the project.
Less than 100 tonnes of chemical wastes stored on site at any time.</td></tr>
<tr><td>A2</td><td>Premises or plant to which this licence applies</td><td></td><td></td><td></td></tr>
<tr><td>A2.1</td><td>The licence applies to the following premises:
Mount Arthur Coal
Thomas Mitchell Drive Muswellbrook NSW 2333
Mount Arthur Colliery Holding</td><td></td><td>Noted</td><td></td></tr>
<tr><td>A3</td><td>Information supplied to the EPA</td><td></td><td></td><td></td></tr>
<tr><td>A3.1</td><td>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.</td><td></td><td>Noted</td><td></td></tr>
</table>

<table>
<tr><th>EPL No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td>2</td><td>Discharges to Air and Water and Applications to Land</td><td></td><td></td><td></td></tr>
<tr><td>P1</td><td>Location of monitoring/discharge points and areas</td><td></td><td></td><td></td></tr>
<tr><td>P1.1</td><td>The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.
Air
<table>
<tr><th>EPA No.</th><th>Type of Monitoring Point</th><th>Location Description</th></tr>
<tr><td>3</td><td>Particulates(PM_{10})</td><td rowspan="2">At locations where dust deposition levels are representative of the levels experienced at residential properties, or other sensitive receivers, resulting from the operation of the mine.</td></tr>
<tr><td>4</td><td>Particulates - Deposited Matter</td></tr>
</table></td><td>Air Quality Monitoring Program, MAC-ENC-PRO-057</td><td>C</td><td>The air quality monitoring program has a network of 12 dust deposition gauges installed around the mine site and at residential locations. Monitoring locations are representative of privately owned property in the vicinity of the site and locations were determined in consultation with DECCW.</td></tr>
<tr><td>P1.2</td><td>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.</td><td></td><td>Noted</td><td></td></tr>
<tr><td>P1.3</td><td>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.
<table>
<tr><th>EPA No.</th><th>Type of Monitoring Point</th><th>Location Description</th></tr>
<tr><td>5</td><td>Discharge point under Hunter River Salinity Trading Scheme.</td><td>At outlet pipe from storage dam E298480 N6424790 marked as "EPA 5" on plan titled "Mt Arthur HRSTS Discharge and Monitoring Points" OC09/23227 on file LIC07/2093-03</td></tr>
<tr><td>6</td><td>Water quality and volume monitoring for discharges under the Hunter River Salinity Trading Scheme.</td><td>At the weir structure downstream of outlet pipe from storage dam E298190 N6424890 marked as "EPA 6" on plan titled "Mt Arthur HRSTS Discharge and Monitoring Points" DOC09/23227 on file LIC07/2093-03</td></tr>
</table></td><td>Surface Water Monitoring Program MAC-ENC-PRO-061 Table 6 Mt Arthur Coal Surface Water Monitoring Locations</td><td>C</td><td>Mt Arthur water monitoring program includes monitoring point at SW15 the outlet pipe from the Environment Dam (EPA 5 monitoring point) and monitoring point SW28 downstream of outlet pipe from Environment Dam (EPA 6 monitoring point) to measure flow rate and electrical conductivity when discharging occurs to the Hunter River under the Hunter River Salinity Trading Scheme (HRSTS).</td></tr>
<tr><td></td><td>Limit Conditions</td><td></td><td>Noted</td><td>The project is managed in accordance with control strategies outlined in environmental management plans.</td></tr>
<tr><td>L1</td><td>Pollution of waters</td><td></td><td></td><td></td></tr>
<tr><td>L1.1</td><td>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.</td><td></td><td>Noted</td><td></td></tr>
<tr><td>L2</td><td>Concentration limits</td><td></td><td></td><td></td></tr>
</table>

<table>
<tr><th>EPL No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td>L2.1</td><td>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.</td><td></td><td>Noted</td><td></td></tr>
<tr><td>L2.2</td><td>Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.</td><td></td><td>Noted</td><td></td></tr>
<tr><td>L2.3</td><td>To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.</td><td></td><td>Noted</td><td></td></tr>
<tr><td>L2.4</td><td>Water and/or Land Concentration Limits
POINT 5
<table><tr><th>Pollutant</th><th>Unit of Measure</th><th>100 percentile concentration limit</th></tr><tr><td>pH</td><td>pH units</td><td>6.5 – 9.0</td></tr><tr><td>Total Suspended Solids (TSS)</td><td>mg / litre</td><td>120</td></tr></table></td><td>Environmental Monitoring Data Reports May 2010 to Sep 2011</td><td>C</td><td>Surface water monitoring results have indicated that:
pH – results range from 6.9 to 8.8 with the discharge levels from EPA monitoring point 5 less than pH 8.1
TSS – results range from 10 to 90mg/l with discharge levels less than 30mg/l at EPA monitoring point 5</td></tr>
<tr><td>L3</td><td>Volume and mass limits</td><td></td><td></td><td></td></tr>
<tr><td>L3.1</td><td>For each discharge point or utilisation area specified below (by a point number), the volume/mass of:
a) liquids discharged to water; or;
b) solids or liquids applied to the area;
must not exceed the volume/mass limit specified for that discharge point or area.
<table><tr><th>Point</th><th>Unit of Measure</th><th>Volume/Mass Limit</th></tr><tr><td>5</td><td>Megalitres per day</td><td>450 ML</td></tr></table></td><td>Letter to OEH re FY11 Hunter River Salinity Trading Scheme Report, 22 Sep 2011</td><td>C</td><td>No discharge was recorded during 2010.
Discharge volumes reported for 2011 were:
<table><tr><th>Date</th><th>Volume in ML</th></tr><tr><td>16 June 2011 (8.59am to 10.18am)</td><td>1.2</td></tr><tr><td>16-17 June 2011 (7.44pm to 10.59am)</td><td>39.14</td></tr><tr><td>17 June 2011 (11.00am to 3.02pm)</td><td>11.23</td></tr></table>Discharge volume to the Hunter River did not exceed the limit specified for Point 5.</td></tr>
<tr><td>L4</td><td>Waste</td><td></td><td></td><td></td></tr>
<tr><td>L4.1</td><td>The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.</td><td></td><td>C</td><td>No waste generated outside of the Mt Arthur Consolidation Project premises has been stored, treated, processed or disposed of on the site.</td></tr>
<tr><td>L4.1</td><td>This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.</td><td></td><td>Noted</td><td></td></tr>
<tr><td>L5</td><td>Noise limits</td><td></td><td></td><td></td></tr>
<tr><td>L5.1</td><td>Operational noise from the premises must not exceed:
<table><tr><th>Location</th><th>Period</th><th>Noise Limits LAeq (15 minute) dB(A)</th></tr><tr><td>South Muswellbrook</td><td>Day/Evening/Night</td><td>35 / 35 / 35</td></tr><tr><td>Antiene</td><td>Day/Evening/Night</td><td>37 / 40 / 38</td></tr><tr><td>Racecourse Rd South</td><td>Day/Evening/Night</td><td>37 / 36 / 35</td></tr><tr><td>Denman Road</td><td>Day/Evening/Night</td><td>37 / 36 / 35</td></tr><tr><td>Skellatar Stock</td><td>Day/Evening/Night</td><td>40 / 40 / 40</td></tr></table></td><td>Noise Monitoring Program MAC-ENC-PRO- 056</td><td>C</td><td>Attended monitoring conducted quarterly by Global Acoustics in accordance with the OEH ‘Industrial Noise Policy’ guidelines and Australian Standard AS 1055‘Acoustics, Description and Measurement of Environmental Noise’.
The duration of each measurement was 15 minutes.
Noise levels from Mt Arthur Coal complied with the LAeq(15 minute) and LA1(1 minute) development consent night-time criteria at all monitoring locations during the Quarter 4 2011 survey.</td></tr>
</table>

<table>
<tr><th>EPL No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>
<table>
<tr><td>Route</td><td></td><td></td></tr>
<tr><td colspan="3">All other residential or sensitive receptors excluding the receptors listed above and also excluding those listed in the Mount Arthur North Development consent Table 5 MAN DC (DA144-05-2000), Table 1 MAU DC (06_0091):
<table>
<tr><th>Location</th><th>Period</th><th>Noise Limits LAeq (15 minute) dB(A)</th></tr>
<tr><td>All other residential receivers</td><td>Day/Evening/Night</td><td>35 / 35 / 35</td></tr>
</table>
</td></tr>
</table>
Note: Definitions: LAeq(15 minute) is the value of LAeq(15 minute) which shall not be exceeded for more than 10% of the monitoring periods detailed in the noise monitoring program for independent noise investigations and includes the full range of weather conditions occurring at the time of monitoring.
Day means 7am to 6pm; Evening means 6pm to 10pm; Night means 10pm to 7am.</td><td></td><td></td><td></td></tr>
<tr><td>L6</td><td>Blasting</td><td></td><td></td><td></td></tr>
<tr><td>L6.1</td><td>Blasting in or on the premises must only be carried out between 0900 hours and 1700 hours, 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.</td><td>Environmental Monitoring Data – Blasting Jan to Dec 2011</td><td>C</td><td>Blasting on site only occurs between 0900hrs and 1700 hours Monday to Saturday. No blasting has occurred on Sundays or public holidays between September 2010 and December 2011.</td></tr>
<tr><td>L6.2</td><td>The airblast overpressure level from blasting operations in or on the premises must not exceed:
a) 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; and
b) 120 dB (Lin Peak) at any time.
At any residence or noise sensitive location (such as school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative overpressure level.</td><td rowspan="2">Blast Management Plan (draft) MAC-ENC MTP-015
2010 AEMR section 3.1 Blasting
Environmental Monitoring Data, section 1, Jan-Feb 2011
Environmental Monitoring Data, section 1, Mar-Apr 2011
Environmental Monitoring Data, section 1, May-Jun 2011
Environmental Monitoring Data, section 1, Jul-Aug 2011
Environmental Monitoring Data, section 1, Sep-Oct 2011</td><td>C</td><td>No blast overpressure monitoring results exceeded the criteria in EPL condition L6.2 during 2010 and 2011.

All results were below the maximum EPL criteria of 120dbL maximum for overpressure at the monitored locations (BP04, BP05, BP06, BP07 and BP09).</td></tr>
<tr><td>L6.3</td><td>The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed:
a) 5mm/s for more than 5% of the total number of blasts carried out on the premises during each reporting period; and
b) 10 mm/s at any time.
At any residence or noise sensitive location (such as school or hospital) that is not owned by the licensee or subject of a private agreement between the owner of the residence or noise sensitive location and the licensee as to an alternative ground vibration level.</td><td>C</td><td>No peak particle velocity (ppv) ground vibration monitoring results exceeded the criteria in EPL condition L6.3 during 2010 and 2011.

All results were below the maximum EPL criteria of 10mm/s at the monitored locations (BP04, BP05, BP06, BP07 and BP09).</td></tr>
<tr><td>4</td><td>Operating Conditions</td><td></td><td></td><td></td></tr>
<tr><td>O1</td><td>Activities must be carried out in a competent manner</td><td></td><td></td><td></td></tr>
<tr><td>01.1</td><td>Licensed activities must be carried out in a competent manner.</td><td>Mining Operations Plan</td><td>Noted</td><td>The mining operations are conducted in accordance with the</td></tr>
</table>

EPL No.	Condition	Verification	Compliance	Comments
	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.	Environmental Management Strategy MAC-ENC-MTP-041 Land Management Plan MAC-ENC-MTP-030 Soil Stripping Management Plan AC-ENC-MTP-035 Rehabilitation Strategy MAC-ENC-MTP-034		Mining Operations Plan and other management plans that provide procedures for processing, handling, transport and storage and disposal of materials generated by the mine activities
O2	**Maintenance of plant and equipment**			
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.	Mechanical Engineering Management Plan, MAC-STE-MTP-011 Electrical Engineering Management Plan, MAC-STE-MTP-010	C	The plant and equipment used on the Mt Arthur Mining Complex site is maintained in the on-site workshops in accordance with the Mechanical Engineering Management Plan.
O3	**Dust**			
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.		C Ongoing	Water carts are used continually on haul roads and polymer dust suppressants have been applied to reduce dust emissions and sediment loss from major haul roads. Permanent stockpiles have been treated including aerial seeding to provide surface cover to reduce potential for dust generation and onsite conveyors are covered to control dust.
O4	**Effluent application to land**			
O4.1	Waste water utilisation areas must effectively utilise the waste water applied to those areas. This includes the use for pasture or crop production, as well as ensuring the soil is able to absorb the nutrients, salts, hydraulic load and organic materials in the solids or liquids. Monitoring of land and receiving waters to determine the impact of waste water application may be required by the EPA.		Noted	
O5	**Processes and management**			
O5.1	The licensee must ensure that any liquid and/or non- liquid waste generated and/or stored at the premises is assessed and classified in accordance with the DECC Waste Classification Guidelines as in force from time to time.	Waste Classification Guidelines, DECC, Dec 2009	C	All wastes are segregated and where required are tested for classification in accordance with the DECC Waste Classification Guidelines
O5.2	The licensee must ensure that waste identified for recycling is stored separately from other waste.	2010 AEMR section 3.12	C	Waste segregation occurs and the waste contractor conducts regular inspections to ensure that waste management is conducted in accordance with best practice guidelines.
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;		C	(a) All monitoring records are in a legible form in the Environment Section files. (b) All monitoring records are retained by the

<table>
<tr><th>EPL No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>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.</td><td></td><td></td><td>Environment Section..
(c) Monitoring records can be produced on request.</td></tr>
<tr><td>M1.3</td><td>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.</td><td></td><td>C</td><td>All records of collection of samples from monitoring programs are prepared and kept with Chain-of-Custody (CoC) forms completed. The CoC are provided to the laboratory and a copy retained on the Environment Section files.</td></tr>
<tr><td>M2</td><td>Requirement to monitor concentration of pollutants discharged</td><td></td><td></td><td></td></tr>
<tr><td>M2.1</td><td>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:</td><td></td><td>C</td><td>The Mt Arthur Coal monitoring programs comply with the requirements in EPL conditions M2.2 and M2.3.</td></tr>
<tr><td>M2.2</td><td>Air Monitoring Requirements
Point 3
<table>
<tr><th>Pollutant</th><th>Unit of Measure</th><th>Frequency</th><th>Sampling Method</th></tr>
<tr><td>PM_{10}</td><td>$\mu g/m^3$</td><td>Continuous</td><td>AM-22</td></tr>
</table>
Point 4
<table>
<tr><th>Pollutant</th><th>Unit of Measure</th><th>Frequency</th><th>Sampling Method</th></tr>
<tr><td>Particulates – Deposited Matter</td><td>$g/m^2/mth$</td><td>Monthly</td><td>AM-19</td></tr>
</table></td><td>Approved Methods for the Sampling and Analysis of Air Pollutants in NSW, DEC 2005
Air Quality Monitoring Program MAC-ENC-PRO-057</td><td>C</td><td>The Air Quality Monitoring Program section 3 references the Approved Methods for the Sampling and Analysis of Air Pollutants in NSW as the standard under which all air quality monitoring would be conducted.</td></tr>
<tr><td>M2.3</td><td>Water and/ or Land Monitoring Requirements
Pollutant Units of measure Frequency Sampling Method
POINT 6
<table>
<tr><th>Pollutant</th><th>Unit of Measure</th><th>Frequency</th><th>Sampling Method</th></tr>
<tr><td>Conductivity</td><td>µS/cm</td><td>Continuous during discharge</td><td>Probe designed to measure 0-10,000 µS/cm</td></tr>
<tr><td>pH</td><td>pH units</td><td>Daily during discharge</td><td>Representative</td></tr>
</table></td><td>Surface Water Monitoring Program MAC-ENC-PRO-061</td><td>C</td><td>The sampling of water from EPA point 6 occurs with instrumentation capable of continuous measurement of EC in the range of 0-10,000µS/cm and pH range of 1-14 during discharge events.</td></tr>
<tr><td>M3</td><td>Testing methods - concentration limits</td><td></td><td></td><td></td></tr>
<tr><td>M3.1</td><td>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</td><td>Approved Methods for the Sampling and Analysis of Air Pollutants in NSW, DEC 2005</td><td>Noted</td><td></td></tr>
</table>

<table>
<tr><th>EPL No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.
Note: The Protection of the Environment Operations (Clean Air) Regulation 2010 requires testing in accordance with "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW</td><td></td><td></td><td></td></tr>
<tr><td>M3.2</td><td>Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.</td><td></td><td>Noted</td><td></td></tr>
<tr><td>M4</td><td>Environmental monitoring</td><td></td><td></td><td></td></tr>
<tr><td>M4.1</td><td>Every 12 months the licensee must monitor noise from the premises in accordance with condition L5 to determine compliance with the limits specified in condition L5.1.</td><td></td><td>C</td><td>Quarterly Noise Monitoring is conducted by MAC at sites identified in condition L5.1. Results are reported in the AEMR and Annual Return as relevant.</td></tr>
<tr><td>M5</td><td>Weather monitoring</td><td></td><td></td><td></td></tr>
<tr><td>M5.1</td><td>The licensee must monitor (by sampling and obtaining results by analysis) each weather parameter 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:
<table>
<tr><th>Parameter</th><th>Units of Measure</th><th>Frequency</th><th>Sampling Method</th></tr>
<tr><td>Air Temperature</td><td>^{o}C</td><td>Continuous</td><td>Instrumental</td></tr>
<tr><td>Wind direction</td><td>Degrees</td><td>Continuous</td><td>Instrumental</td></tr>
<tr><td>Wind speed/run</td><td>m/sec</td><td>Continuous</td><td>Instrumental</td></tr>
<tr><td>Rainfall</td><td>mm</td><td>Daily</td><td>Instrumental</td></tr>
</table></td><td></td><td>C</td><td>Mt Arthur has weather stations installed at and around the mine to measure the meteorological parameters required by this condition.</td></tr>
<tr><td>M6</td><td>Recording of pollution complaints</td><td></td><td></td><td></td></tr>
<tr><td>M6.1</td><td>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.</td><td>Community Complaints Summary Jan – Dec 2011</td><td>C</td><td>The Community Complaints records provide date/time/site of complaint/issue/investigation and response notes for each complaint received.</td></tr>
<tr><td>M6.2</td><td>The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant provided or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.</td><td>Community Complaints Summary Jan 2011 – Dec 2011

Community Complaints Summary – Annual Returns 2009-2011</td><td>C</td><td>The Community Complaints records provide date/time/site of complaint/issue/investigation and response notes for each complaint received.</td></tr>
<tr><td>M6.3</td><td>The record of a complaint must be kept for at least 4 years after</td><td>Community Complaints</td><td>C</td><td>Complaints Register is retained by Mt Arthur Coal</td></tr>
</table>

<table>
<tr><th>EPL No.</th><th>Condition</th><th>Verification</th><th>Compliance</th><th>Comments</th></tr>
<tr><td></td><td>the complaint was made.</td><td>Summary Jan 2011 – Dec 2011</td><td></td><td>Environment Section.</td></tr>
<tr><td>M6.4</td><td>The record must be produced to any authorised officer of the EPA who asks to see them.</td><td></td><td>Noted</td><td></td></tr>
<tr><td>M7</td><td>Telephone complaints line</td><td></td><td></td><td></td></tr>
<tr><td>M7.1</td><td>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.</td><td></td><td>C</td><td>Mt Arthur Coal has a 24hour community response line (telephone 1800-882 044).</td></tr>
<tr><td>M7.2</td><td>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.</td><td>Community Matters May 2011</td><td>C</td><td>The community response line number is provided on the Community Matters Newsletter distributed to the local community.</td></tr>
<tr><td>M7.3</td><td>The preceding two conditions do not apply until 3 months after:
a) the date of the issue of this licence or
b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.</td><td></td><td>Noted</td><td></td></tr>
<tr><td>M8</td><td>Requirement to monitor volume or mass</td><td></td><td></td><td></td></tr>
<tr><td>M8.1</td><td>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 6
<table>
<tr><th>Frequency</th><th>Units of Measure</th><th>Sampling Method</th></tr>
<tr><td>Continuous during discharge</td><td>megalitres per day</td><td>Weir structure and level sensor</td></tr>
</table></td><td>Surface Water Monitoring Program MAC-ENC-PRO-061</td><td>C</td><td>Discharges from EPA approved monitoring point identification No. 6 (Mt Arthur surface water monitoring site SW28) are monitored for flow and electrical conductivity for releases to the Hunter River under the Hunter River Salinity Trading Scheme.</td></tr>
<tr><td>M9</td><td>Blasting</td><td></td><td></td><td></td></tr>
<tr><td>M9.1</td><td>To determine compliance with condition(s) L6.2 and L6.3:
(a)Airblast overpressure and ground vibration levels must be measured and electronically recorded at locations representative of impacts likely to be experienced at residential properties, or other sensitive receivers, resulting from the operation of the mine, - for all blasts carried out in or on the premises; and
(b)Instrumentation used to measure the airblast overpressure and ground vibration levels must meet the requirements of Australian Standard AS 2187.2-2006.</td><td>Blast Management Plan (draft) MAC-ENC MTP-015

Blast Monitoring Program MAC-ENC-PRO-055</td><td>C</td><td>Monitoring of each blast occurs at fixed monitor locations where the calibrated instruments record air-blast overpressure and ground vibration when triggered by the blast.</td></tr>
<tr><td>M10</td><td>Other monitoring and recording condition</td><td></td><td></td><td></td></tr>
<tr><td>M10.1</td><td>HRSTS Monitoring
The licensee must continuously operate and maintain communication equipment which makes the conductivity and flow measurements, taken at Point 6 available to the Department of</td><td>“Hunter River Salinity Trading Scheme Discharge Point Site Equipment”, DLWC, 2002</td><td>C</td><td>The Hunter River Salinity Trading Scheme monitoring point 6 (Mt Arthur surface water monitoring site SW28) has equipment for the measurement of flow and electrical conductivity. The results of the readings are available for</td></tr>
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EPL No.	Condition	Verification	Compliance	Comments
	Land and Water Conservation within one hour of those measurements being taken and makes them available in the format specified in the "Hunter River Salinity Trading Scheme Discharge Point Site Equipment" as published by the Department of Land and Water Conservation on 7 May 2002.			assessment in the format specified in the "Hunter River Salinity Trading Scheme Discharge Point Site Equipment".
M10.2	The licensee must ensure that all monitoring data is within a margin of error of 5% for conductivity measurements and 10% for discharge flow measurement.		Noted	
M10.3	The licensee must mark monitoring point(s) 5 & 6, with a sign which clearly indicates the name of the licensee, whether the monitoring point is up or down stream of the discharge point(s) and that it is a monitoring point for the Hunter River Salinity Trading Scheme.		C	EPA approved monitoring points 5 and 6 for the Hunter River Salinity Trading Scheme have signage indicating the location of the monitoring points and name of the licensee.
6	**Reporting Conditions**			
R1	**Annual return documents**			
R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: a) a Statement of Compliance; and b) a Monitoring and Complaints Summary. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	Annual Return 31 Aug to 30 Aug	C	Mt Arthur Coal has submitted the EPA Annual Returns on the approved forms with the Statement of Compliance and Monitoring and Complaints Summary.
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below. *Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.*		Noted	
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.		Noted	
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.		Noted	

EPL No.	Condition	Verification	Compliance	Comments
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').	Annual Return 2008-2009 Letter to OEH re Submission of the Annual Return 22 Oct 2009 Annual Return 2009-2010 Letter to OEH re Annual Return 22 Sep2009 Annual Return 2010-2011	C	The Annual Return s have been submitted to the EPA within 60 days of the end of the reporting period
R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.	Annual Return 2007-2008 Annual Return 2008-2009 Annual Return 2009-2010 Annual Return 2010-2011	C	The Annual Returns have been retained by the Environment Section at Mt Arthur Coal for at least 4 years.
R1.7	Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by: a) the licence holder; or b) by a person approved in writing by the EPA to sign on behalf of the licence holder.	Annual Return 2007-2008 Annual Return 2008-2009 Annual Return 2009-2010 Annual Return 2010-2011	C	The Annual Returns have been signed by Company Directors.
R1.8	A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.		Noted	
R2	**Notification of environmental harm**			
	Note: The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act			
R2.1	Notifications must be made by telephoning the Environment Line service on 131 555.	Notification to OEH re Blast Fume Incident, 14 Oct 2012	C	
R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	Letter to OEH in Response to Notice Under s.148 of POEO Act re Blast Fume, 20 Oct 2011	C	
R3	**Written report**			
R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.		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:	Letter from OEH re Request for Incident Report, 20 Oct 2011	C	Hunter Valley Energy Coal Pty Ltd notified OEH regarding a blast plume containing fume that occurred on 14 October

EPL No.	Condition	Verification	Compliance	Comments
	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.	Letter to OEH in Response to Notice Under s.148 of POEO Act re Blast Fume, 20 Oct 2011		2012. OEH requested and incident report to be prepared and submitted by the 26 October 2012. Hunter Valley Energy Coal Pty Ltd responded to OEH on the 20 October 2011, with a letter report addressing the OEH written notification in accordance with the requirements of s.148 of the *Protection of the Environment Operations Act 1997,* cl 101 of the Protection of the Environment Operations (General) Regulation 2009 and Condition R2.
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	
R4	**Other reporting conditions**			
R4.1	**HRSTS Reporting** The licensee must compile a written report of the activities under the Scheme for each scheme year. The scheme year shall run from 1 July to 30 June each year. The written report must be submitted to the EPA's regional office within 60 days after the end of each scheme year and be in a form and manner approved by the EPA. The information will be used by the EPA to compile an annual scheme report.	Letter to OEH re FY11 HRSTS Report, 22 Sep 2011 Annual Hunter River Salinity Trading Scheme Report – Discharge Record Worksheet EPL 11457	NC	During 2010 no discharge of water by Mt Arthur Coal occurred from the licensed discharge point under the Hunter River Salinity Trading Scheme Report and EPL. The Annual Hunter River Salinity Trading Scheme Report (as required under EPL condition R5.1 was prepared and submitted to the OEH Environment Protection and Regulation Division for the 1 July to 30 June annual reporting period. The FY11 report was submitted on 22 September 2011, after the 60 day required reporting period.
R4.2	**Reporting of Blasting Monitoring** The licensee must report any exceedence of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedence becomes known to the licensee or to one of the licensee's employees or agents.	Blast Monitoring Program MAC-ENC-PRO-0 Blast Results Mt Arthur, Aug 2009 to Aug 2010 Monthly Monitoring Reports Blast Monitoring Data Jan-Oct 2011	C	
R4.3	**Spontaneous Combustion Control Program Reporting** The monthly summaries, monthly assessments and monthly maps prepared under the spontaneous combustion control program must be submitted to the EPA in the form of a 6 monthly report. The licensee must forward a copy of each 6 monthly report to the regional office of the EPA no later than two (2) months after the 6 monthly period being reported.	Letter to OEH re Spontaneous Combustion Reporting and Management, Sep 2011 Six monthly Spontaneous Combustion Report Jan-Jun 2011 Six monthly Spontaneous Combustion Report Jul-Dec 2010	NC	Mt Arthur have prepared monthly summaries and maps of spontaneous combustion events and submitted quarterly reports to the OEH. The six monthly reporting period for the Spontaneous Combustion Control Program Reports (as required under EPL condition R4.3 have been for the January to June and July to December reporting periods. The six monthly reports were submitted by Mt Arthur Coal, but after the 2 month required reporting period.

EPL No.	Condition	Verification	Compliance	Comments
R4.4	The monthly summaries, assessments and maps must be retained by the licensee for not less than four (4) years following the month under review. The records must be kept in a legible form and must be made available to any authorised officer of the EPA on request.		C	The monthly summaries and six monthly reports are retained by Mt Arthur in the Environment Section and are available on request.
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.		C	A copy of the EPL is available at the Mt Arthur Coal Environment Section offices.
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.		Noted	
8	**Pollution Studies and Reduction Programs**			
U1	**Coal Mine Particulate Matter Control Best Practice**			
U1.1	The Licensee must conduct a site specific Best Management Practice (BMP) determination to identify the most practicable means to reduce particle emissions.	Assessment of Coal Mine Particulate Matter Control Best Practice Pollution Reduction Program, MAC-ENC-PRG-003	C	
U1.2	The Licensee must prepare a report which includes, but is not necessarily limited to, the following: - identification, quantification and justification of existing measures that are being used to minimise particle emissions; - identification, quantification and justification of best practice measures that could be used to minimise particle emissions; - evaluation of the practicability of implementing these best practice measures; and - a proposed timeframe for implementing all practicable best practice measures. In preparing the report, the Licensee must utilise the document entitled *Coal Mine Particulate Matter Control Best Practice – Site Specific Determination Guideline - August 2011*.	*Coal Mine Particulate Matter Control Best Practice – Site Specific Determination Guideline - Aug 2011* Assessment of Coal Mine Particulate Matter Control Best Practice Pollution Reduction Program, MAC-ENC-PRG-003	C	The report Assessment of Coal Mine Particulate Matter Control Best Practice Pollution Reduction Program has been prepared to address the requirements of condition U1.2: - Section 2 Existing measures used to minimise particle emissions - Section 3 Best Practice Measures (BPM) - Section 4 Evaluation of practicability of BPM - Section 4.3 Proposed timeframe for implementation of best practice measures
U1.3	All cost related information is to be included as Appendix 1 of the Report required by condition U1.2 above.		Noted	
U1.4	The report required by condition U1.2 must be submitted by the Licensee to the Office of Environment and Heritage's Regional Manager Hunter, at PO Box 488G, NEWCASTLE by 6 February 2012.	Letter to OEH re Request for extension of Submission Date for the Coal Mine Particulate Matter Control Best Practice Report, 7 Feb 2012 Letter to OEH re of Coal Mine Particulate Matter Control Best Practice, 20 Feb 2012 Assessment of Coal Mine Particulate Matter Control Best Practice Pollution Reduction Program, MAC-ENC-PRG-003	C	The Assessment of Coal Mine Particulate Matter Control Best Practice Pollution Reduction Program, prepared by Mt Arthur Coal was submitted to the OEH on 20 February 2012 in accordance with the extension in time discussed with the OEH.
U1.5	The report required by condition U1.2 above, except for cost	Assessment of Coal Mine	C	The Assessment of Coal Mine Particulate Matter Control Best

EPL No.	Condition	Verification	Compliance	Comments
	related information contained in Appendix 1 of the Report, must be made publicly available by the Licensee on the Licensee's website by 13 February 2012.	Particulate Matter Control Best Practice Pollution Reduction Program, MAC-ENC-PRG-003		Practice Pollution Reduction Program was placed on the Mt Arthur website as required by U1.5.
9	**Special Conditions**			
E1	**Spontaneous Combustion Control Program**			
E1.1	Carbonaceous material that is prone to self -heating and which is not extracted as run of mine coal must be selectively removed and purposely disposed of in such a manner that will prevent the development of spontaneous combustion at the disposal site.		Noted	
E1.2	The licensee must implement a Spontaneous Combustion Control Program which must include but not be limited to the following: (a) A monthly summary of actions and procedures undertaken to prevent the development or to control the spread of spontaneous combustion at the premises; (b) An assessment of the effectiveness of the actions and procedures undertaken each month in preventing the development and control of the spread of spontaneous combustion at the premises; (c) Monthly mapping of the approximate location of the areas subject to spontaneous combustion at the premises. The map must show the respective areas in square metres of each area affected and must include a key to show the relative intensity of the heating.	Quarterly Spontaneous Combustion Report, Jan-Jun 2010 Quarterly Spontaneous Combustion Report, Jul-Dec 2010 Spontaneous Combustion Management Plan, 2006 Spontaneous Combustion Monthly Summary – Oct 2011	C	The latest revision of the Spontaneous Combustion Management Plan (2006) is used by Mt Arthur Coal to control and report on spontaneous combustion: (a) a monthly summary of actions and procedures undertaken to prevent the development or to control the spread of spontaneous combustion at the premises is prepared for submission to the OEH; (b)comment on effectiveness of actions is reported (c)monthly mapping of the areas of spontaneous combustion is prepared and the area affected is listed in the monthly table.
E2	**Hunter River Salinity Trading Scheme**			
E2.1	This licence authorises the discharge of saline water into the Hunter River Catchment from an authorised discharge point (or points), in accordance with the *Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2009*.	*Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2009*. Letter to OEH re FY11 Hunter River Salinity Trading Scheme Report, 22 Sep 2011	C	A report for FY11 was submitted to OEH on 22 September 2011.
E2.2	For the purposes of Clauses 23 and 29 of the *Protection of the Environment Operations (Hunter River Salinity Trading Scheme) Regulation 2002* the licensee must apply the conversion factor of 0.6.	Hunter River Salinity Trading Scheme Discharge Calculator	C	The Mt Arthur discharge calculator applies a conversion factor of 0.6.

Mining Leases

Mining	Issue/Renewal Date	Expiry Date	Area
Coal Lease (CL 396)	28 March 2003	3 February 2024	29.5ha
Consolidated Coal Lease (CCL 744)	23 January 2008	21 January 2028	553.7ha
Mining Lease (ML 1358)	21 September 1994	21 September 2015	33.97km^2
Mining Lease (ML1487)	13 June 2001	13 June 2022	3454ha
Mining Lease (ML1548)	31 May 2004	31 May 2025	290.7ha
Mining Lease (ML1593)	30 April 2007	30 April 2028	393.8ha
Mining Lease (ML1655)	3 March 2011	3 March 2032	149ha
Mining Purposes Lease (MPL 263)	17 October 2011	17 October 2032	122.1ha

Lease No.[1]	Condition	Verification	Compliance	Comments
	Environmental Harm			
CL 396 c.2 **CCL 744 c.2** **ML 1655 c.2** **MPL 263 c.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.	This independent environmental audit included site inspections.	Noted Ongoing	The site inspections conducted during this audit concluded that the Mt Arthur Coal activities demonstrate practicable measures were being implemented to minimise environmental harm from the operations..
Mining Operations Plan				
CCL 744 c.3 **ML 1487 c.2** **ML 1548 c.2** **ML 1593 c.2** **ML 1655 c.3** **MPL 263 c.3**	(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.	Mt Arthur Coal Integrated MOP Amendment A, September 2009 Mt Arthur Coal Complex Open Cut Mining Operations Plan FY 2012 to FY 2013	C	The Mining Operations Plan for the Mt Arthur Coal Complex (i.e. Mt Arthur Consolidated Project has been prepared and to satisfy the requirements of the Mining Leases conditions. The MOP has been submitted to DI&I.
Annual Environmental Management Report (AEMR) / Environment Management Reporting				
CL 396 c.3 **CCL 744 c.5** **ML 1487 c.3** **ML 1548 c.3** **ML 1592 c.3** **ML 1655 c.4** **MPL 263 c.4**	(1) Within 12 months of the commencement of mining operations and thereafter annually or, at such other times as may be allowed by the D-G, the lease holder must lodge an Annual Environmental Management Report (AEMR) with the D-G. (2) The AEMR must be prepared in accordance with the D-G's guidelines current at the time of reporting and contain a review and forecast of performance for the preceding and ensuing twelve months ……..	2010 AEMR 2011 AEMR (draft)	C	The Annual Environmental Management Report (AEMR) was prepared for the 2010 reporting period in accordance with the requirements of the condition. The AEMR was submitted to the Director-General and other relevant authorities.
Rehabilitation				
CCL 744 c.7 **ML 1655 c.7** **MPL 263 c.7**	Disturbed land must be rehabilitated to a sustainable/ agreed end land use to the satisfaction of the Director-General.	Project Approval Schedule 3 condition 42 MOP section 4 Proposed Rehabilitation Activities during the	Ongoing	The site inspection conducted of the Mt Arthur Coal operations during this independent environmental audit demonstrated that the rehabilitation of disturbed areas was being progressively undertaken in accordance

Lease No.[1]	Condition	Verification	Compliance	Comments
		Term of this MOP, 2012-2013 Rehabilitation Strategy MAC-ENC-MTP-034.		with the MOP and Rehabilitation Strategy. Suggestions for improvement of the ongoing rehabilitation of disturbed areas are provide in section 5.4.6 of this audit report.
Blasting				
CL 396 c.26 **CCL 744 c.15** **ML 1358 c.23** **ML 1487 c.26** **ML 1548 c.11** **ML 1593 c.11** **ML 1655 c. 10** **MPL 263 c.10**	***(a) Ground Vibration*** The lease holder must ensure that the ground vibration peak particle velocity generated by any blasting within the lease area does not exceed 10 mm/second and does not exceed 5 mm/second 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 Environment and Climate Change. ***(b) Blast Overpressure*** 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 Environment and Climate Change.	Project Approval Schedule conditions 10 to 16 EPL No.11458 condition L6 Blast Management Plan (draft) MAC-ENC MTP-015 Blast Monitoring program, MAC-ENC-PRO-055 Environmental Monitoring Data – Blasting Jan to Dec 2011 Environmental Monitoring Data, section 1, Jan-Feb 2011 Environmental Monitoring Data, section 1, Mar-Apr 2011 Environmental Monitoring Data, section 1, May-Jun 2011 Environmental Monitoring Data, section 1, Jul-Aug 2011 Environmental Monitoring Data, section 1, Sep-Oct 2011	C	No blast overpressure or peak particle velocity (ppv) ground vibration monitoring results exceeded the criteria in condition 10 during 2010 and 2011. All results were below the maximum Project Approval criteria of 120dbL maximum for overpressure or ppv of 10mm/s at the monitored locations (BP04, BP05, BP06, BP07 and BP09).
Dust				
CL 396 c.17 **ML 1358 c.11** **ML 1487 c.17**	The lease holder shall take such precautions as are necessary to abate any dust nuisance.	Project Approval Schedule 3 conditions 20 to 24 EPL condition M2.1 Dust Management Plan MAC-ENC-MTP-025 Air Quality Management Plan (draft) MAC-ENC-MTP-040 Air Quality Monitoring Program, MACENC-PRO-057	C	Dust management is controlled under the Project Approval conditions - Air Quality Management Plan/Dust Management Plan and Air Quality Monitoring Program, and EPL condition M2.1.
Rehabilitation				
ML 1548 c.16 **ML 1593 c.13**	(a) Land disturbed must be rehabilitated to a stable and permanent form suitable for a subsequent land use acceptable to the Director-General and in accordance with the Mining Operations Plan so that:- • there is no adverse environmental effect outside the disturbed area and that the land is properly drained and protected from soil erosion. • the state of the land is compatible with the surrounding land and land use requirements. • the landforms, soils, hydrology and flora require no greater maintenance than that in the	Rehabilitation Strategy MAC-ENC-MTP-034 Mining Operations Plan FY2012 to FY 2013 Independent Environmental Audit section 5.4.6, Dec 2011 Site inspections held as part of this independent environmental audit by Landloch Pty Ltd.	C Ongoing	(a) A Rehabilitation Management Plan to be prepared under Project Approval Schedule 3 condition 44 is due for submission to the Director-General of DI&I on March 2012. Proposed rehabilitation activities during the term of the approved Mining Operations Plan for the Mt Arthur Coal Complex is described in section 4 of the current MOP, and Final Rehabilitation for the open cut areas is described in section 5 of the MOP.

Lease No.[1]	Condition	Verification	Compliance	Comments
	surrounding land. • in cases where revegetation is required and native vegetation has been removed or damaged, the original species must be re-established with close reference to the flora survey included in the Mining Operations Plan. If the original vegetation was not native, • any re-established vegetation must be appropriate to the area and at an acceptable density. • the land does not pose a threat to public safety. (b) Any topsoil that is removed must be stored and maintained in a manner acceptable to the Director-General.			(b) Topsoil stripping occurs during preparation of areas for overburden removal and the topsoil is then used for rehabilitation if required or stockpiled for re-use when required for rehabilitation (MOP section 3.2.2). The site inspections held as part of this independent environmental audit indicated that the rehabilitation of the Mt Arthur Coal complex areas was occurring to achieve the intent of this condition for the final land use.
Prevention of Soil Erosion and Pollution				
CL 396 c.30 **CCL 744 c.18** **ML 1358 c.32** **ML 1487 c. 30** **ML 1548 c.16** **ML 1593 c.16** **ML 1655 c.12** **MPL 263 c. 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, water-body or groundwater. The lease holder must observe and perform any instructions given by the Director-General in this regard.	*Managing Urban Stormwater: Soils and Construction, Volume 1* Landcom *2004* *Managing Urban Stormwater: Soils and Construction, Volume 2E Mines and Quarries,* DECC 2008 Erosion and Sediment Control Plan, MAC-ENC-PRO-060 Mining Operations Plan FY2012 to FY 2013	C Ongoing	An Erosion and Sediment Control Plan has been prepared for the Mt Arthur Consolidated Project areas to satisfy Project Approval Schedule 3 condition 31 and was submitted to DP&I in 2011. Erosion management and sediment control are described in various sections of the MOP, for implementation of management and mitigation measures during mining operations.
Transmission -lines, Communication lines and Pipelines				
CCL 744 c.19 **ML 1358 c. 41 to 42** **ML 1548 c.17** **ML 1593 c. 17** **ML 1655 c. 13** **MPL 263 c.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.	Project Approval Schedule 3 condition 14 MOP section 3.4.1.5.3 Drilling and Blasting	Noted Ongoing	Key features with specific constraints are identified including transmission lines and towers, pipelines grinding groove sites, public roads, private residence and heritage structures.
Management and Rehabilitation of Lands (General)				
CL 396 c.18 **ML 1358 c.14 to 21** **ML 1487 c.18 to 25** **ML 1548 c.13**	The lease holder shall not interfere in any way with any fences on or adjacent to the subject area unless with the prior written approval of the owner thereof or the Minister and subject to such conditions as the Minister may stipulate.	Site inspections held as part of this independent environmental audit by Landloch Pty Ltd	Noted Ongoing	The active mine workings at Mt Arthur Coal are located entirely within lands owned and managed by Hunter Valley Energy Coal (HVEC).
Fences, Gates				
CL 744 c.20 **ML 1548 c.18** **ML 1593 c.18**	(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.		Noted Ongoing	The active mine workings at Mt Arthur Coal are located entirely within lands owned and managed by Hunter Valley Energy Coal (HVEC). A number of Crown and Council road reserves are located within the Lease area.
Roads and Tracks				

Lease No.[1]	Condition	Verification	Compliance	Comments
CL 396 c.31 **CCL 744 c.21** **ML 1358 c. 36 to 37** **ML 1487 c. 31** **ML 1548 c.19 and 20** **ML 1593 c.19 and 20** **ML 1655 c.14** **MPL 263 c. 14**	(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 by operations carried out under the lease, less any amount paid or payable from the Mine Subsidence Compensation Fund.	MOP section 1.6 Land Ownership Road Closure Management Plan MAC-ENC-MTP-024	Noted	The active mine workings at Mt Arthur Coal are located entirely within lands owned and managed by Hunter Valley Energy Coal (HVEC). A number of Crown and Council road reserves are located within the Lease areas. Both Crown and Council road reserves will be impacted by the proposed mining operations. An application to close these roads has been submitted with the Land and Property Management Authority (LPMA). A Road Closure Management Plan has been developed in consultation with DTIRIS, MSC and submitted to DOPI for approval.
CL 396 c.31 **CCL 744 c.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.	MOP section 1.6 Land Ownership Road Closure Management Plan MAC-ENC-MTP-024	Noted Ongoing	The active mine workings at Mt Arthur Coal are located entirely within lands owned and managed by Hunter Valley Energy Coal (HVEC). Establishment of access roads and tracks within the mining lease areas is kept to a minimum with existing tracks used where practicable. The MOP section 7.1 states that *"Obsolete roads not used for more than 12 months will be ripped and re-vegetated".*
Trees and Timber				
CL 396 c.29 **CCL 744 c.23** **ML 1358 c. 26** **ML 1487 c. 27 and 29** **ML 1548 c. 21** **ML 1593 c. 21** **ML 1655 c. 15** **MPL 263 c. 15**	(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. (b) 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. (c) The lease holder must obtain all necessary approvals or licences before using timber from any Crown land within the lease area.	MOP section 1.6 Land Ownership MOP section 2.2 Flora MOP section 2.2.2 Riparian and Remnant Woodland MOP section 3.2.1 Clearing of Vegetation	Noted Ongoing	The active mine workings at Mt Arthur Coal are located entirely within lands owned and managed by Hunter Valley Energy Coal (HVEC). The area proposed for disturbance during the MOP period (FY2012 to FY2013) consists of predominantly grassland with native and improved pastures and areas of scattered trees and remnant woodland. A referral under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) has been lodged with the Department of Sustainability, Environment, Water, Populations and Communities (SEWPAC) over parts of the mining area proposed within the MOP. Clearing of vegetation will be undertaken in accordance with the existing Mt Arthur Coal Clearing and Topsoil Stripping procedure and relevant details to be included in the Biodiversity and Rehabilitation Management Plans to be developed in accordance with the Mt Arthur Coal Consolidation Project Approval.
Aboriginal Place or Relic				
CCL 396 c.44 **ML 1358 c. 43** **ML 1487 c.43**	The lease holder shall not knowingly destroy, deface or damage any aboriginal place or relic within the subject area except in accordance with an authority issued under the National Parks and Wildlife Act,	*Aboriginal Cultural Heritage Consultation Requirements for Proponents, 2010*.	C Ongoing	An Aboriginal Heritage Management Plan, has been prepared to satisfy the requirements of Project Approval Schedule 3 condition 45 and was submitted to DP&I on 30 March 2011. The Plan was prepared in

Lease No.[i]	Condition	Verification	Compliance	Comments
	1974, and shall take every precaution in drilling, excavating or disturbing the land against any such destruction, defacement or damage.	Aboriginal Heritage Management Plan (draft) MAC-ENC-MTP-042		consultation with OEH and Aboriginal community representatives in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents, 2010*.
Spontaneous Combustion Management Plan				
CL 396 c.55	The lease holder shall submit a Spontaneous Combustion Management Plan. The implementation of this plan will be to the satisfaction of the Department of Mineral Resources.	Spontaneous Combustion Management Plan 2006 Air Quality Monitoring Program MAC-ENC-PRO-057 2010 AEMR section 3.10 Spontaneous Combustion	C	Areas of spontaneous combustion in overburden waste emplacement are managed via covering of the affected areas with unreactive overburden to reduce combustion and the potential for odour generation.

[i] Note: The conditions of approval attached to the CL, CCL, ML's and MPL have been grouped under the general condition titles. Wording of the individual conditions may vary but the intent of the conditions are generally similar for each lease. This review has taken the most stringent condition for each aspect for assessment of compliance/performance.