



**GLOUCESTER
BASIN**

Part of Gloucester Coal

**Independent Environmental Audit
Duralie Coal Mine**

November 2011

aemc

applied environmental management consultants

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Glossary

AEMR	Annual Environmental Management Report
AR	Annual Return required under the EPL
Annual Review	Review required under Schedule 5 condition 3
ARTC	Australian Rail Track Corporation
BCA	Building Code of Australia
CCC	Community Consultative Committee
DEC	Department of Environment and Conservation
DECC	Department of Environmental and Climate Change
DECCW	Department of Environment, Climate Change and Water
Department	Department of Planning and Infrastructure
DII	Department of Industry and Investment
Director-General	Director-General of Department of Planning and Infrastructure, or delegate
DoP	Department of Planning
DP&I	Department of Planning and Infrastructure
EA	Environmental Assessment
EIS	Environmental Impact Statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environmental Protection Licence
GLSC	Great Lakes Shire Council
MCoA	Minister's Condition of Approval
Mine Water	Water that accumulates within active mining areas and mine
Mining operations	Includes all coal extraction, processing, handling, storage and transportation activities on site
Minister	Minister for Planning, or delegate
Mitigation	Activities associated with reducing the impacts of the project
OoW	New South Wales Office of Water
Proponent	Duralie Coal Pty Ltd
ROM	Run-of-Mine
SEE	Statement of Environmental Effects

Executive Summary

The Independent Environmental Audit of the Duralie Coal open cut mine operations was conducted by Trevor brown & Associates on the 31 October to 5 November 2011, to satisfy the Project Approval and Minister's Conditions of Approval dated 26 November 2010.

The Duralie Coal Mine operations generally demonstrate a high degree of compliance with the implementation of their environmental management plans.

Environmental Management Plans

The Management Plans prepared to satisfy the Project Approval (dated 26 November 2010) are considered to provide improved management and mitigation measures for the Duralie project. Draft Environmental Management Plans were provided to nominated regulators for consultation in accordance with the Project Approval conditions prior to finalisation of the plans for submission to DP&I for approval. The Management Plans were prepared in accordance with the Project Approval conditions, submitted to the relevant authorities and where finalised were submitted to DP&I, but Duralie Coal had not received a response in relation to approval of the Plans from the nominated authority(s) at the date of this audit.

Environmental Management Strategy

The Environmental Management Strategy provides a sound basis for an environmental management system for the Duralie Coal Mine operations and documentation. The EMS addresses the elements of ISO 14001.

Environmental Monitoring Program

The monitoring programs for each environmental aspect (i.e. noise, blast and vibration, air quality, surface water, groundwater, irrigation, rehabilitation, heritage, rail movements and waste) are considered adequate to provide data for the assessment of the operations in relation to the MCoA and EPL requirements and to assess consistency with the predictions in the environmental impact assessments and statements of environmental effects.

Air Quality

Dust deposition levels recorded from all gauges had an average value of 1.8 g/m²/month for all gauges (excluding contaminated results), which is less than the *total impact* criteria of 4 g/m²/month. The dust deposition and PM₁₀ monitoring have demonstrated compliance with the nominated criteria in MCoA Schedule 3 condition 19 for all sites except D1 dust gauge (which is located on site in close proximity to the onsite haul roads).

Biodiversity

Twice yearly biological monitoring of the streams near the Duralie mine has been conducted. An initial environmental assessment of the aquatic ecosystems of Mammy Johnsons River and the Karuah River above the junction with Mammy Johnsons River was carried out prior to the commencement of mining operations in 2003. The September 2010 and March 2011 surveys found that *"there has been a consistent level in ecosystem condition compared to previous years and show no evidence of any adverse effects on the aquatic macroinvertebrate community. Therefore, there appears to no adverse effects on the aquatic ecosystem as a result of the mine's operations."*

Blasting

Blast overpressure results have complied with the MCoA and EPL criteria, with the only results exceeding 120dB_L recorded at Duralie Coal owned premises.

Vibration

No ground vibration results have exceeded 10 mm/s, and only four blasts have resulted in ground vibration exceeding 5 mm/s (three (3) events during 2010-2011 and one (1) event in 2009-2010 all at a mine owned premise.

Vibration monitoring conducted at Weismantels Inn also demonstrated that ground vibration levels were less than 5mm/s.

Noise

The noise surveys conducted during the 2009 to 2011 period demonstrate that the Duralie Mine is compliant with the EPL noise criteria at all privately owned monitored locations under the prevailing atmospheric conditions. (Note that the only high noise levels were encountered at the Hattam property that is now owned by Gloucester Coal).

Surface Water Quality

The surface water monitoring did not demonstrate any significant changes in water quality in the natural waterways that would be attributable to the Duralie Mine operations and activities during the 2008 to 2011 period. Sporadic higher readings for parameters appeared to be related to periods of low rainfall and hence low flow conditions in the waterways, or following heavy rainfall where first flush waters conveyed suspended solids from runoff of the mine site.

Groundwater

Review of the data indicates that the groundwater quality results exhibited variations between bores in a random manner. This is not considered unusual for a natural groundwater system. On this basis, no mine operational activities are believed to have influenced groundwater quality. Depth to water collected from piezometer monitoring demonstrates that bore water levels are generally consistent within bores and consistent with the EIS (1996) and EA (2010) predictions.

Erosion and Sediment Control

The erosion and sediment control measures, and the separation of clean and dirty water, were noted during the audit site inspection to have been implemented in a satisfactory manner. The site was successfully implementing a “no-discharge” policy.

Rehabilitation

Overburden waste rock emplacement inspected during this audit was being rehabilitated with the part of the overburden emplacement topsoiled and seeded showing good vegetated cover, and part completed with contouring and establishment of drains, and topsoil being spread. The slopes of the emplacement areas are long and relatively steep but appeared stable at the time of the audit. Rock fragments as ground cover had been used in some areas providing some temporary surface stability, (although the rock was observed to slake quickly to a sandy soil). Establishment of seeded groundcover on the rehabilitated areas was progressing satisfactorily.

1. Introduction

1.1 Background

The Project Approval granted for the Duralie Coal Mine dated 26 November 2010, requires an Independent Environmental Audit of compliance in accordance with the Minister's Condition of Approval (MCoA) Schedule 5 condition 8:

“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..”*

This Independent Environmental Audit was conducted for Duralie Coal Pty Ltd (DCPL) by Trevor Brown & Associates between 31 October and 30 November 2011.

1.2 Scope of Work

The compliance 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 Duralie Coal Mine included the following components:

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

1.3 Structure of the Report

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

Glossary

Section 1	Introduction
Section 2	Duralie Mine Development
Section 3	Consents, Approvals and Licenses
Section 4	Duralie Mine - Status November 2011
Section 5	Review of Environmental Management
Section 6	Conclusions and Recommendations

Attachment A	Ministers Conditions of Approval (DA 08-0203 26 November 2010)
Attachment B	Environment Protection Licence No.11701
Attachment C	Mining Lease 1427

1.4 Compliance Table

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 DCPL.

The status of compliance of the conditions attached to the project approvals are expressed as:

Status		Description
C	Compliant	Adequacy and appropriateness of implementation against the current Departmental Approval and Conditions, or compliance with commitment made.
O	Observation	A finding that is not likely to significantly affect the operations, that do not strictly relate to the scope of the audit of compliance and which could lead to performance improvement
NC	Non-compliant	An inadequacy in the design and/or implementation against the current approvals, licence conditions or management commitments. There are two subcategories of non-compliance: Category 1 (NC1) – a total absence of planning or implementation of a required operational element that presents an immediate risk or an isolated lapse in control in the implementation of an operations element, that will lead to a significant risk; or Category 2 (NC2) – an isolated lapse or absence of control in the implementation of an operational element that may not be of significant risk.
NA	Not applicable	Not active or applicable to the current exploration operations/
Noted		Conditions that are statements of requirement but not auditable.

2. Duralie Coal Mine Development

Duralie Coal Pty Ltd (DCPL), a subsidiary of Gloucester Coal Ltd (Gloucester Coal), owns and operates the Duralie Coal Mine, north of the village of Stroud Road in the Great Lakes Shire, New South Wales. The mine site is situated within the Gloucester Valley and is surrounded by agricultural land uses and native bushland. The closest residential development is located 500 metres north of the project area boundary.

The subject land is located within Great Lakes Shire local government area and is General Rural Zone 1(a) under the *Great Lakes Local Environmental Plan 1996*. Mining is a permissible use of zone 1(a) land.

Duralie Development History¹

Development History	Document	Decision/Comment(s)
Development Application submitted re environmental impacts associated with the development of the Duralie Coal Mine	<i>Duralie Coal Environmental Impact Statement</i> , 1996	Following a Commission of Inquiry, the NSW Minister for Urban Affairs and Planning granted Development Consent for the mine in August 1997.
New Development Application lodged to allow Duralie ROM coal to be railed to Stratford Coal Mine for processing in the CHPP, and to reduce the area to be mined and rate of coal production.	<i>Proposed Alterations to Duralie Coal Project Statement of Environmental Effects</i> , 1998	The Modification was approved in February 1999 by the NSW Minister for Urban Affairs and Planning
Modification lodged in regard to amend the water management system (i.e. Coal Shaft Creek Diversion).	Modification application MOD-92-9-2003-I, 21 August 2003	Both modifications - MOD-13-3-2003-i and MOD-92-9-2003-i were approved by the NSW Minister for Planning in 2003.
In August 2003, a further modification was lodged to revise the alterations to the Coal Creek Diversion.		
Modification lodged that for an extension of the Duralie open pit and waste rock emplacement area, and an increase in the annual ROM coal production rate from 1.5 up to 1.8Mtpa.	<i>Duralie Extended Modification Statement of Environmental Effects</i> , 2006a	DA 168/99 MOD 3 was approved by the NSW Minister for Planning in July 2006.
Modification was lodged for the construction of auxiliary water storage dams		DA 168/99 MOD 4) was approved by the NSW Minister for Planning in December 2008
Modification to the DCM was lodged, the involved an extension of the DCM open pit to extract 1.8mtpa and increase waste rock emplacement.	<i>Duralie Modification MOD 6 Environmental Assessment</i> , June 2009a).	Approval for the modification by the NSW Minister for Planning was granted on 28 October 2009
Project Application under Part 3A lodged to extract 3mtpa coal	<i>Duralie Extension Project Environmental Assessment</i> Jan 2010 Land and Environment Court Decision 10 November 2011	Project Approval under Part 3A of the <i>Environment and Planning Act 1979</i> was granted on 26 November 2010 for the Duralie Coal Extension Project. Land and Environment Court hearing February 2011.

MINE DEVELOPMENT

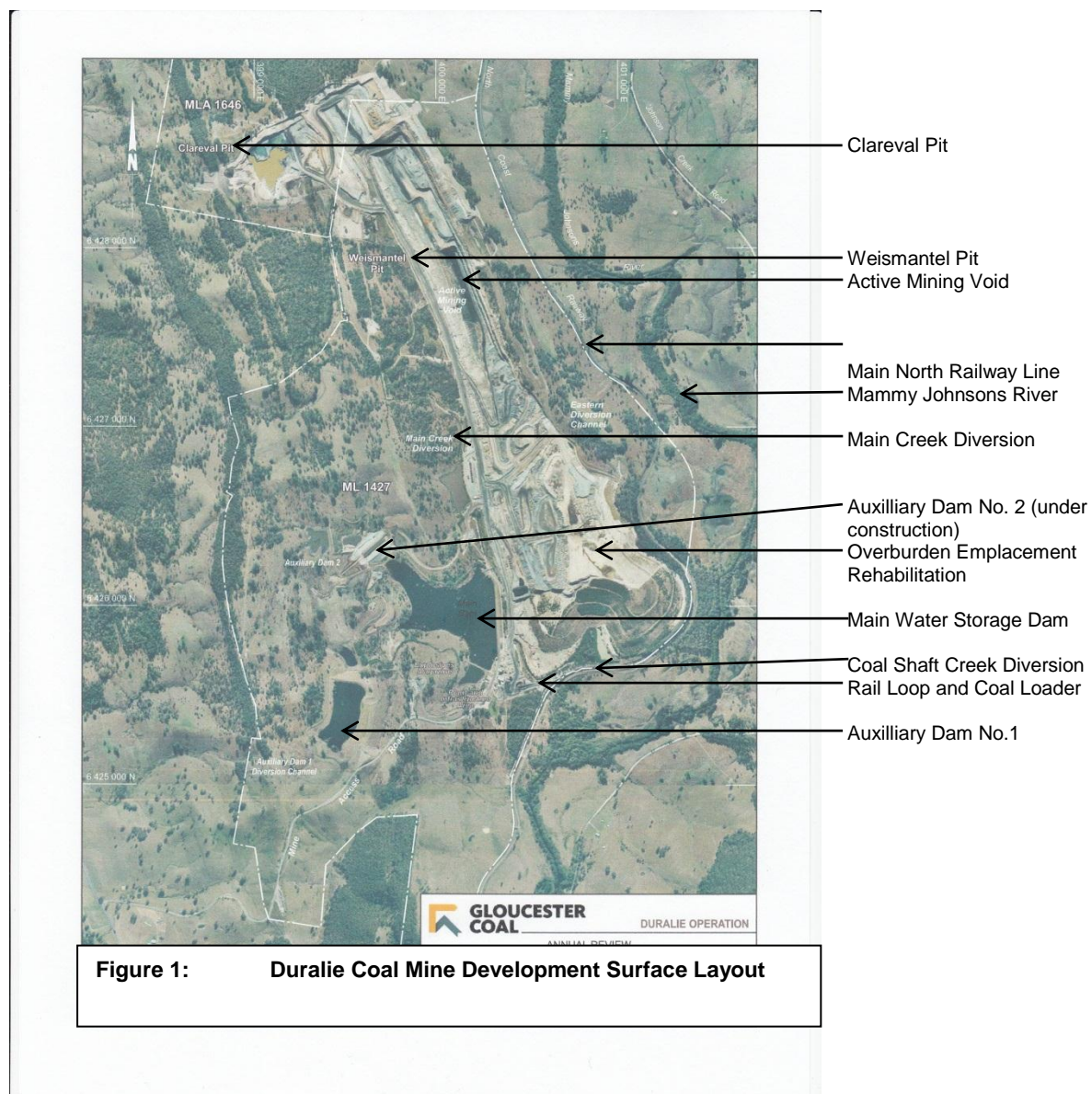
Construction of the Duralie Mine commenced in June 2002 and after a construction period of approximately eight months, production of coal commenced in March 2003. The first coal was railed to the Stratford Mine Coal Handling and Processing Plant (CHPP), located 20 km to the north of the Duralie Mine project area, for processing in March 2003.

¹ Environmental Assessment Duralie Extension Project January 2010 section 2 Project Description

The initial mine development comprised an open pit and mine infrastructure area, water management structures and a rail loop located on the south eastern boundary of the mining lease area. (This rail loop is still used for the transport of all coal from Duralie to the Stratford Mining Complex).

Mining commenced with extraction of coal from the south-eastern corner of Box Cut 1, between Coal Shaft Creek (to the west) and the Main Northern Railway Line (to the east). The Duralie Mine produces two Run-of-Mine (ROM) coal products that are processed and blended as required for customer needs with other ROM coals at the Stratford CHPP. The mine currently has approval to extract 3 million tonnes of ROM coal per annum, 24 hours per day seven days per week (Project Approval 26 November 2010).

This Project Approval granted on 26 November 2010 was the subject of an appeal to the NSW Land and Environment Court and the final Order from the Court was handed down on 10 November 2011.



3. Consents, Approvals and Licences

3.1 Project Approval Conditions - *Environmental Planning and Assessment Act 1979*

The initial Development Consent under Sections 76(A)9 and 80 of the *Environmental Planning and Assessment Act 1979* and the Minister's Conditions of Approval (MCoA) for the Duralie Mine Project, was granted on 5 February 1999. The consent was limited to a period of 21 years from the date of a grant of a Mining Lease in respect of the development.

A Project Approval under Part 3A of the *Environmental Planning and Assessment Act 1979* was granted 26 November 2010 - Project Approval (DA 08_0203) for the Duralie Extension Project with Consolidated Minister's Conditions of Approval attached.

This audit has been conducted to assess compliance with the Project Approval and the review of compliance of the Duralie Mine activities has been undertaken against the Consolidated MCoA (with compliance and comments summarised in Attachment A).

3.2 Environment Protection Licence

DCPL received Environment Protection Licence (EPL) 11701 under section 55 of the *Protection of the Environment Operations Act 1997* for the DCM on 4 September 2002.

Section 58 Notices of Variation of the EPL have occurred on

- Variation to Environment Protection Licence 11701 dated 15 January 2004.
- Variation to Environment Protection Licence 11701 dated 18 November 2005
- Variation to Environment Protection Licence 11701 dated 13 December 2005.
- Variation to Environment Protection Licence 11701 dated 11 October 2007.
- Variation to Environment Protection Licence 11701 dated 27 November 2009.
- Variation to Environment Protection Licence 11701 dated 13 April 2010.

Review of compliance of the mining activities with the latest EPL 11701 conditions (dated 13 April 2010), are summarised in Appendix B.

3.3 Mining Lease

Mining Lease No. 1427 was granted to DCPL under the *Mining Act 1992* on 16 April 1998. The mining lease area is 762.5 hectares.

A Mining Operations Plan (MOP) was prepared in accordance with the mining lease conditions and the Department of Mineral Resources (DMR) Guidelines document GUI.08060002 and approved by DMR on 28 February 2003, prior to commencement of mining. Revision and updating of the MOP has occurred and the revised plans and documentation submitted to the authorities for approval:

- MOP Amendment relating to irrigation area access road, approved by the DMR 18 October 2004.
- Attachment to the MOP relating to exploration drilling within the mining lease, submitted to the Department of Primary Industries – Mineral Resources (DPI-Minerals) dated 29 April 2005 and approved 2 May 2005.
- Altered MOP plans submitted to DPI – Minerals following the approval of the “Duralie Extended” area.
- Alterations to the MOP related to eastern high-wall and drainage realignment submitted to DPI-Minerals and approved 30 July 2007.

- Alterations to the MOP related to additional eastern high-wall realignment and north eastern diversion channel submitted to the DPI-Minerals and approved 18 August 2008.
- Alterations to the MOP related to diversion drain for proposed Auxiliary Dam No. 1 submitted to DPI-Minerals and approved 18 August 2008.
- Revision and alterations of the MOP to address the Duralie Extension Project development and rehabilitation submitted to DII for approval in January 2011.

Review of compliance of the mining activities with the Mining Lease conditions are summarised in Appendix C.

3.4 Dams Safety

The Duralie Mine Main Water Dam is prescribed under the *Dams Safety Act 1978*. Between August 2004 and June 2008 the Dams Safety Committee (DSC) was provided with monthly figures showing pit workings in relation to the dam. In addition, other information requested by the DSC, in the form of a monthly report, was supplied between September 2007 and June 2008. The DSC currently receives a quarterly pit layout figure.

A Dam Safety Emergency Plan (DSEP) for the Mine Water Dam was prepared and a copy supplied to the DSC in May 2006. This document was updated in January 2009. A Mine Water Dam Operations and Maintenance Manual was approved by the DSC during 2008.

Routine visual inspections of the Main Water Dam are undertaken three (3) times per week. Monthly monitoring of piezometers terminating beneath the dam's clay core and within the clay core is also undertaken. Monuments located along the dam's crest are routinely surveyed for any indication of movement.

Auxiliary Dam 1 was prescribed by the DSC in October 2008 and construction completed in 2009. This dam provides supplementary storage to the Main Water Dam. A Safety Emergency Plan and an Operations and Maintenance Manual have been prepared for this dam.

Auxiliary Dam 2 (a second supplementary storage dam to the Main Water Dam) was prescribed by the DSC in August 2010 and was under construction at the date of this current audit.

4.3 Water Licences

Bore Licences under section 115 of the *Water Act 1912* were obtained for the Duralie Mine operations:

- DLWC Bore Licence for the dewatering of the Duralie Open Cut (20BL168404) dated 23 September 2002;
- DLWC Bore Licence for monitoring bores (20BL168539) dated 31 October 2002;
- DIPNR licence 20SL060324 relating to diversion of Coal Shaft Creek was replaced by Approval No. 20WA202053 under the Karuah River Water Sharing Plan;
- Modification to existing DIPNR licence 20SL060324, dated 2 October 2003;
- DIPNR Bore Licence 20BL168539 was revised with an additional three bores added on 2 February 2004.

The groundwater bores were installed and are maintained in accordance with the licence conditions.

4.4 Part 3A Permits

Permits under Part 3A the *Rivers and Foreshores Improvement Act 1948* were obtained for the project:

- Permit No. 701 for construction of a culvert crossing (Haul Road) over a tributary of the Karuah River (granted on 14 June 2002); and
- Permit No. 704 for construction of the railway siding and culvert crossing of Coal Shaft Creek (granted 14 February 2002).

Construction of both culverts has occurred in accordance with the requirements of the Permit conditions.

4. Duralie Mine Project Status – November 2011

4.1 OPEN CUT MINING

Duralie Mine is an open cut operation using truck and hydraulic excavator or shovel with a current operating stripping ratio (volume of overburden per tonne of coal) within the range 4.5:1 to 5:1.

Open cut mining at the Duralie Mine is conducted under contract to DCPL by Leighton Contractors (Leighton). Leighton provide all equipment and manpower for the topsoil and overburden stripping, mining of coal, and placement of overburden and topsoil capping for rehabilitation of completed overburden emplacement areas.

The mine operations extract coal from the Weismantel seam at the base of the Gloucester Coal Measures. The deposit forms a synclinal structure with the open cut area located at the southernmost crop line within the main axis of the Gloucester Basin. Dips within the deposit vary from a shallow 5 degrees to an almost vertical profile. Consequently, a method of horizontal 3m to 4m benches is used as the primary extraction method. An average of 5m of free dig material is generally experienced at Duralie after which all waste material generally requires blasting.

The deposition of the Weismantel seam has been influenced by the proximity of marine environments resulting in typically high sulphur content over the first half a metre of the coal seam. Additionally, moderately high inherent sulphur exists throughout the remainder of the seam.

Two types of waste material have been identified associated with the coal deposit:

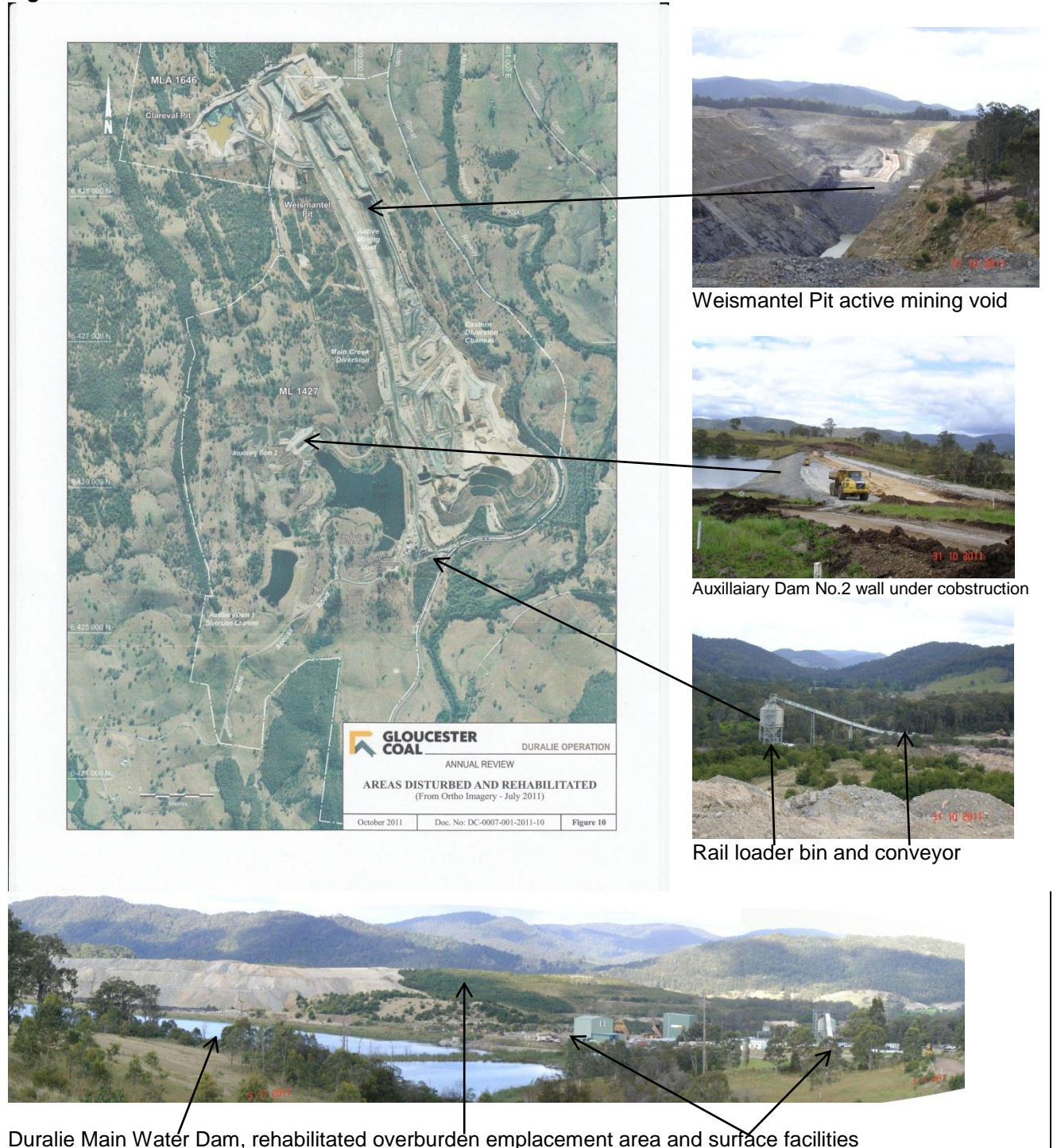
- potentially acid forming (PAF); or
- non-acid forming (NAF).

In the early stages of the mining operation PAF waste was placed within compacted clay cells to limit the potential for oxygen and water to reach the PAF material. This reduced the potential for acidic leachate to be produced. When sufficient area within the main open pit void was available, PAF wastes were deposited below RL 40 metres to ensure a recovering water table would submerge all the deposited material and prevent oxygen reaching the PAF material. Agricultural lime is spread on PAF material prior to clay encapsulation or submersion to reduce the risk of acid formation.

4.2 ROM Handling

Duralie ROM coal is transported by truck on internal haul roads to the Duralie stockpile and/or crushing plant adjacent to the rail loader. All ROM coal is transported from site to the Stratford Mining Complex CHPP by rail. ROM coal transport from the Duralie rail loader to the Stratford Mining Complex has been from 1.6 to 1.77 million tonnes per annum between 2007-2011, is compliant with the conditions of approval.

Figure 2: Duralie Coal Mine Status November 2011



5. Review of Environmental Management

5.1 Environmental Management Strategy

[Project Approval MCoA Schedule 5 condition 1]

The initial Environmental Management Strategy (EMS) Version A was prepared by Duralie and submitted to the DoP on 26 February 2007. The EMS was revised and approved by DoP on 26 March 2007. The EMS Version E was submitted to the DP&I on 17 June 2011 (to satisfy Project Approval 26 November 2010). No response from DP&I to the submission of the EMS had been received by Duralie at the date of this audit.

As Version E is the latest revision of the EMS, comments on the environmental management strategy included in this audit, are based on the Version E document.

The EMS Version E dated May 2011 addresses each of the components of MCoA Schedule 5 condition 1. The Management Plans and Programs required under the MCoA are referenced in the EMS Section 1 and listed in Table 3. Environmental monitoring required under the MCoA has been collated and is presented in a separate document titled Environmental Monitoring Program. The required Management Plans under the MCoA are:

Air Quality & Greenhouse Gas Management Plan (AQGGMP)	Noise Management Plan
	Biodiversity Management Plan
	Giant Barred Frog Management Plan
Water Management Plan (WMP), including:	Heritage Management Plan
▪ Site Water Balance	Irrigation Management Plan
▪ Surface Water Management & Monitoring Plan	Waste Management Plan
▪ Erosion and Sediment Control Plan	
▪ Groundwater Management Plan	Rehabilitation Management Plan, incorporating:
▪ Surface and Ground Water Response Plan	▪ Final Void Management Plan
Blast Management Plan	▪ Mine Closure Plan

Comments on the latest revision of these Plans, their implementation and adequacy of environmental performance of the operations are presented under each specific section and in Attachment A.

Conclusion: The Environmental Management Strategy provides a sound basis for environmental management of the Duralie Coal Mine operations. The EMS addresses the elements of ISO 14001.

5.2 Environmental Monitoring Programs

Monitoring programs for the Duralie Mine were collated (from the relevant environmental aspect Management Plans), into Environmental Monitoring Program Version A dated 28 June 2007, and the program revised and submitted to DoP on 19 May 2008 for approval. Comments on assessment of the monitoring results and environmental performance are provided under each of the specific environmental aspect sections below.

Conclusion:

The monitoring programs for each environmental aspect (i.e. noise, blast and vibration, air quality, surface water, groundwater, irrigation, rehabilitation, heritage, rail movements and waste) are considered adequate to provide data for the assessment of the Duralie operations in relation to the MCoA and EPL requirements and to assess consistency with the predictions in the EIS, Environmental Assessments and Statements of Environmental Effects.

5.3 Air Quality

[Project Approval MCoA Schedule 3 conditions 17 to 23]

The initial Air Quality Management Plan was prepared in July 2002 was provided to Planning NSW, EPA, Great Lakes Council and members of the CEMCC in 2002. A revised Air Quality Monitoring Program (incorporating Air Quality Management Plan Version D) was prepared and submitted to DoP on 17 January 2007, and the document revised and submitted to DoP as Version E on 11 May 2007.

The latest Air Quality and Greenhouse Gas Management Plan, as required under Project Approval (dated 26 November 2010) MCoA Schedule 3 condition 23, was submitted to DP&I on 7 April 2011. No response from DP&I in relation to the Air Quality and Greenhouse Gas Management Plan had been received by Duralie Coal at the date of this audit.

This latest revision of the Air Quality and Greenhouse Gas Management Plan has been reviewed and comments included in this audit in relation to air quality and adequacy of environmental performance of the operations have been based on this document, with compliance summarised in the MCoA table Attachment A.

5.3.1 Dust Control Procedures

The Air Quality and Greenhouse Gas Management Plan 2011 outlines the management measures for control of dust from the mine operations. The mitigation measures include:

- Minimising disturbed areas,
- Reshaping, topsoiling and revegetation of disturbed areas as soon as practicable;
- Use of water carts on haul roads and other dust generating areas;
- Utilising water sprays on the drill equipment to reduce dust generation;
- Installation of water sprays on the ROM dump hopper and transfer point between the ROM and train loading bins; and
- Use of water sprays during train coal loading.



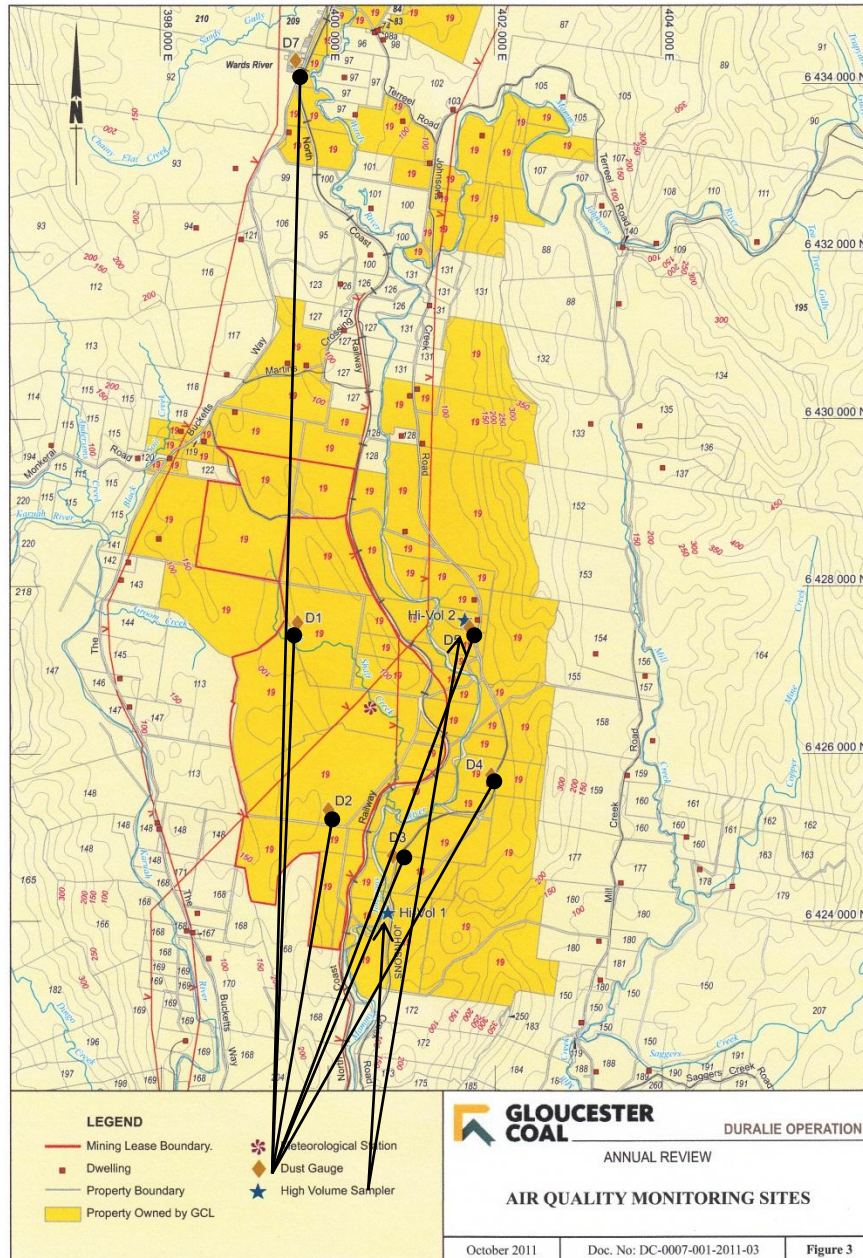
During the site inspections on the 31 October to 3 November 2011 use of water trucks were observed on the haul roads and within the mine pit, water sprays were observed on the ROM dump hopper and transfer point between the ROM conveyor and the train loading bins, and overburden emplacement areas had been reshaped with topsoil spreading and revegetated (where the overburden emplacement areas had reached final RL and slope) reducing the disturbed areas that would have the potential to generate dust.

Plate 1: Water sprays over the ROM coal hopper

5.3.2 Dust Monitoring and Dust Criteria

Dust monitoring equipment had been established at the Duralie site in accordance with EPL 11701 condition P1.1:

- static dust fallout gauges EPA identified monitoring points (22 to 26) under EPL 11701 condition P1.1 and Air Table;
- two (2) high volume PM₁₀ air samplers at EPA identified monitoring points (8 and 9) under EPL 11701 condition P1.1 and Air Table; and
- meteorological monitoring station (EPL 11701 condition M7).



Monthly dust deposition rates in g/m²/month are monitored at or near three (3) residences along Johnsons Creek Road (east of the mine site) and within the village of Wards River. The MCoA (Schedule 3 condition 19 Table 7) requires compliance with an annual average limit for dust deposition is 2g/m²/month (*incremental increase in dust concentration due to the project on its own*), and a monthly maximum of 4g/m²/month (*Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations due to all other sources)*).

The high volume air samplers (HVAS) (PM₁₀) are set up near company owned rural dwellings along Johnsons Creek Road (“Twin Houses” northeast of the mine and “High Noon” southeast of the mine). Sampling occurs for a 24 hour period every 6 days in accordance with AS 2724.3. The MCoA (Schedule 3 condition 19 Table 5) goal for air quality is an annual average limit of 30 µg/m³/day and MCoA (Schedule 3 condition 19 Table 5) National Environmental Protection Measure (NEPM) 24-hour average limit of 50 µg/m³/day.

5.3.3 Review of Dust Monitoring Results

5.3.3.1 Dust Deposition Gauges

The monthly average results for deposited dust during 2010-2011 are tabulated below:

Table 5.3.3.1 – Dust Deposition Gauge Results

Location Identity	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11
D1 (22)	3.0	3.5	6.5	2.5	5.3	3.7	2.8	1.8	3.6	2.0	2.7	4.0
D2 (23)	2.1	1.5	7.0 ^I	3.3	1.0	2.1	1.8	2.3	0.9	2.4	1.1	1.6
D3 (24)	2.2	1.9	1.0	5.0 ^I	0.5	3.1	6.1 ^B	1.4	8.4 ^B	11.7 ^{I,V}	2.7	1.1
D4 (25)	3.6	1.6	4.8 ^I	10.7 ^B	0.2	0.5	6.3 ^B	0.4	0.4	0.4	0.8	0.7
D5 (26)	20.8 ^{I,A}	0.5	3.8	17.1 ^F	1.0	1.0	0.6	3.1	2.6	5.3 ^{I,V}	2.3	0.9
D7*	1.4	0.5	0.5	1.3	0.7	0.7	0.4	0.3	0.3	0.8	0.5	0.3
MCoA Limit ¹	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0

*Additional dust gauge installed by DCPL at Wards River

¹ Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations from all sources)

Notes/excluded results: “I” = significant insect contamination
 “B” = significant bird droppings
 “V” = significant vegetative litter present
 “A” = significant algae present
 “F” = broken funnel, glass contamination of sample

Where contamination of samples occurred (shaded brown results), primarily due to the presence of insects and/or bird droppings in the gauges, these results were excluded from the assessment of the average dust results. Dust gauge D1 high results (shaded grey) are attributed to the location of the gauge and close proximity of the gauge to on-site vehicular traffic.

Dust deposition levels recorded from all gauges had an average value of 1.8 g/m²/month for all gauges (excluding contaminated results), which is less than the *total impact* criteria of 4 g/m²/month.

5.3.3.2 High Volume Air Sampler (PM₁₀)

Monitoring data from the HVAS PM₁₀ at both locations (i.e. (“Twin Houses” northeast of the mine and “High Noon” southeast of the mine) for the period June 2007 to 2011 indicated that the all results for the 24 hour average of 50 µg/m³ were complied with except on one occasion at ‘High Noon’ (25 April 2009) and two occasions at ‘Twin Houses’ (15 September 2008 and 21 November 2009):

Location/Date	Location	24hr Average		Running Annual Average	
		Range	Criteria	Range	Criteria
‘High Noon’					
2010-2011		3.3 - 31	50 ug/m³	8.5 - 12.2	30 ug/m³/day
2009-2010		1.0 - 49		11.8 – 16.6	
2008-2009		1.0 - 59		9.0 – 16.6	
2007-2008		1.0 - 41		8.3 -1 5.0	

'Twin Houses'					
2010-2011		2.9 - 38	50 ug/m ³	10.0 - 13.7	30 ug/m ³ /day
2009-2010		1.0 - 53		13.6 – 18.6	
2008-2009		1.0 – 104		9.7 – 18.6	
2007-2008		<1.0 - 47		9.5 – 16.7	

Conclusion:

The dust deposition and PM₁₀ monitoring have demonstrated compliance with the nominated criteria in MCoA Schedule 3 condition 19 for all sites except D1 dust gauge (which is located on site in close proximity to the onsite haul roads).

5.4 Biodiversity

[Project Approval MoA Schedule 3 conditions 30 to 37]

The Duralie operations are managed to protect native fauna and flora that have the potential to be impacted by mining operations. A Vegetation Clearance Protocol (VCP) prepared as part of the Flora and Fauna Management Plan provides for any area to be impacted by mining to be assessed and flora and fauna management strategies to be implemented. Under the VCP, pre-clearance surveys and habitat assessment are undertaken in areas prior to any disturbance.

“Habitat” trees that are considered to have the potential to provide shelter for arboreal animals are identified and prior to felling of habitat trees fauna are recovered and relocated to suitable alternative habitat.

Generally, the extent of tree clearance post 2007 has been minor as the initial surface disturbance for the development of the mine had predominantly occurred in the 2003-2005 period.

In 2008-2010 tree clearance consisted of commercial timber harvesting followed by removal of the remaining vegetation for use in creek re-establishment and to augment rehabilitation.

In the 2010-2011 period tree clearance occurred for the Strip 14 (Weismantel Pit) northern design boundary and initial clearing within the Clareval Pit area. There was limited tree removal required within both of these areas due to substantial pre-mining land use and development of pasture and grassland.

5.4.1 Biological Monitoring

As part of Duralie Coal's environmental monitoring program, Invertebrate Identification Australasia has conducted twice yearly (approximately March and September) biological monitoring of the streams near the Duralie mine since the start of mining operations.

An initial environmental assessment of the aquatic ecosystems of Mammy Johnsons River and the Karuah River above the junction with Mammy Johnsons River was made prior to the commencement of mining operations in 2003.

Monitoring involves sampling from eight sites for assessment of aquatic communities. The September 2010 and March 2011 surveys found that *“there has been a consistent level in ecosystem condition compared to previous years and show no evidence of any adverse effects on the aquatic macroinvertebrate community. Therefore, there appears to no adverse effects on the aquatic ecosystem as a result of the mine's operations.”*

5.5 Blasting

[Project Approval MCoA Schedule 3 condition 8 to 16]

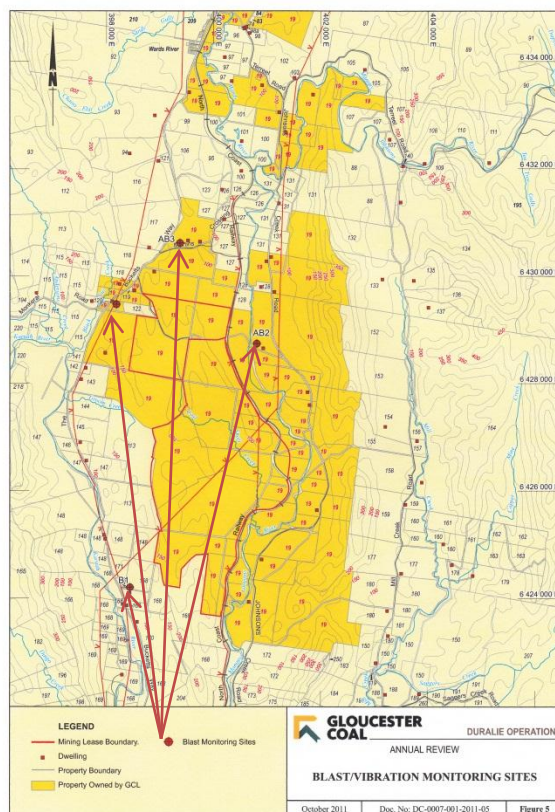
5.5.1 Blast and Vibration Management Plan

A Duralie Blast Monitoring Program, Version C was submitted to the DEC for consultation on 9 and 27 March 2007 and to DoP for review and approval on 27 March 2007. A draft Blast Management Plan to satisfy Project Approval to satisfy MCoA Schedule 3 condition 16 was submitted to DP&I on 30 March 2011. No response had been received by Duralie Coal at the date of this audit.

A Variation to the EPL 11701 condition M9.1 nominated sites for the relocation of the blast monitors to privately owned properties not owned by the company has been submitted to OEH. The Variation had not been advised to Duralie Coal at the date of this audit.

5.5.2 Blast Criteria and Control Procedures

Blasting is conducted in accordance with a Blasting/Vibration Management Plan (BVMP).



Blasting limits are imposed by MCoA Schedule 3 condition 8, EPL 11701 condition L7.2 and Mining Lease (ML 1427) condition 10. The requirements to monitor blasts for ground vibration and overpressure are contained in EPL 11701 condition M9.1, and Mining Lease (ML 1427) condition 10.

Permanent blast monitors are located on the Schultz Property (Bucketts Way, south west of mine); ex-Hattam Property (Johnsons Creek Road, north east of mine) and the ex-Bailey Property (Martins Crossing Road, north of mine). Blast monitoring at the former Weismantels Inn was established during the 2010-2011 period.

The Project Approval MCoA Schedule 3 condition 8, EPL condition L7.2 and ML condition 10 state that overpressure caused by blasting at monitored locations may exceed 115 dB(L) for 5% of blasts during the reporting period but must not exceed 120 dB(L) at any time. Similarly, these conditions require that ground vibration at monitored locations caused by blasting may exceed a peak particle

velocity of 5 mm/s for 5% of blasts during the reporting period but not exceed 10 mm/s.

Property investigations to assess the condition and/or structures may be commissioned following a request from a landowner concerned about dwelling damage that they consider may be related to mining activity. Dilapidation (structural) surveys of several privately owned dwellings located in the vicinity of the mine are routinely carried out by an independent structural engineer, at the request of Duralie Coal.

5.5.3 Review of Blast Monitoring Results

Airblast Overpressure

Monitoring locations for airblast and vibration are identified in EPL 11701 condition M9.1 as the Shultz, Hattam and Bailey properties. The Shultz, Bailey, and Hattam (and Holmes) properties have been purchased by Duralie Coal. A Variation to the EPL 11701 condition M9.1 has been submitted to OEH to have the blast monitoring locations revised to other privately owned properties. The Variation had not been advised to Duralie Coal at the date of this audit.

Date	Airblast Overpressure		Vibration	
	>115dB	>120dB	>5mm/s	>10mm/s
1 Sep 2010-31 Aug 2011	7 (ex-Hattam)	0	3 (ex-Hattam)	0
1 Sep 2009-31 Aug 2010	8 (ex-Hattam)	2 (1 ex-Holmes 131.8; 1 Hattam 120.3dB)	1 Hattam 5.9mm/s)	0
1 Sep 2008-31 Aug 2009	1 (2 ex-Holmes and 1 Doherty)	2 (ex-Holmes 122.4 and 121.1dB)	0	0
1 Sep 2007-31 Aug 2008	1 (Holmes 120.9dB)	1 (Holmes 120.9dB)	0	0

Blast overpressure results exceeding 120dB have not been recorded at any privately owned residences (the only exceedences have been recorded at Duralie Coal owned premises).

Vibration Results

No ground vibration results have exceeded 10 mm/s, and only four blasts have resulted in ground vibration exceeding 5 mm/s (three (3) events during 2010-2011 and one (1) event in 2009-2010 all at the ex-Hattam monitor, a mine owned premise).

Vibration monitoring has been conducted at Weismantels Inn and demonstrated that all ground vibration levels were less than 5mm/s.

Mammy Johnsons Grave is located more than 3 km south of the current mining operational area (that is in the north of Duralie lease area) and monitoring of this site has not yet been undertaken.

Recommendation: Vibration monitoring at Mammy Johnsons Grave should be undertaken to confirm that vibration impacts are not occurring at the site.

5.6 Heritage

[Project Approval MCoA Schedule 3 condition 38]

The Aboriginal Cultural Heritage Management Plan, was submitted to the Karuah LALC for information on 28 June 2002 and the final Aboriginal Cultural Heritage Management Plan, 22 December 2008 was submitted to DoP.

A Heritage Management Plan required under Project Approval (dated 26 November 2010) MCoA Schedule 3 condition 38, was submitted to DP&I 1 June 2011. No response had been received by Duralie Coal at the date of this audit.

Archaeological surveys conducted at the Duralie Mine site in the 1980's and 1990's identified one Aboriginal site referred to as the "honey tree". The "honey tree", an old ironbark, had had timber pieces inserted into the trunk in a spiral pattern to allow access to the crown of the tree possibly to collect honey. The "honey tree" was subsequently listed on the NPWS Aboriginal Heritage Information Management System (AHIMS) database. The "honey tree" is located between the

eastern extent of the mining excavation and the Main Northern Railway Line. The tree has been protected by erection of a painted post and rail fence about the tree. Signage on the fence directs persons not to enter the area.

The Duralie Aboriginal Heritage Management Protocol (AHMP) addresses the requirements to be implemented during topsoil disturbance, with construction and operation of the mine monitored utilising officers of the Karuah Local Aboriginal Land Council (KLALC).

During preparation of the Environmental Assessment for the proposed Duralie Mine Extension in 2009, two archaeological site inspections identified a total of nine Aboriginal heritage sites, some of which are located within the current Mining Lease area. These nine Aboriginal heritage sites/items have not been disturbed by the current mine operations:

Site Code (refer to the EA) [#]	Site Type
DM2	Isolated Artefact
DM3	Scarred Tree
DM4	Scarred Tree
DM5	Scarred Tree
DM6	Isolated Artefact
DM9	Open Artefact Scatter
DM10	Scarred Tree
DM11	Isolated Artefact
38-1-0033	Scarred Tree – Honey Tree

[#]“Environmental Assessment, Duralie Extension Project”, DCPL 2010.

In terms on non-indigenous heritage, during 2003/2004 and 2008/2009 former mine workings from mining activities conducted during the 1930's were uncovered. Items considered as having historical significance such as a steam boiler, timber pit props, rail and broken pieces of coal skip wheels were recovered and provided to the Stroud Historical Society.

5.7 Noise

[Project Approval MCoA Schedule 3 conditions 2 to 7]

5.7.1 Noise Management Plan and Noise Monitoring Program

A Noise Management Plan (NMP) initially produced in December 2002 (and supplemented by a Noise Monitoring Plan approved by the DoP in May 2007 and a further revision approved by the DoP in May 2010) developed procedures for the management of noise emissions during the construction and operation of the Duralie Coal Mine. The Noise Management Plan was provided to Great Lakes Council, EPA, Planning NSW and members of CCC. Subsequent revisions of the Noise Monitoring Plan have been provided to the Department of Planning and members of the CCC.

The 2006 Modification to Consent required quarterly noise monitoring and nominated $L_{eq} (15\text{minute})$ noise limits for nearby privately owned properties. The Noise Monitoring Plan approved in 2007 provided a framework for quarterly monitoring and addressed the requirements of the EPL with respect to noise monitoring. Noise Monitoring Program Version F submitted to the EPA for consultation on March 2007, was also submitted to the DoP on 11 May 2007 for approval.

A Noise Management Plan (including the Noise Monitoring Program), Version H was submitted to DoP on 12 April 2010. The Noise Monitoring Program Version H included Quarterly Noise Surveys, Instrumentation and Measurement Parameters, Plant and Equipment Schedule, Plant Noise Surveys, Presentation of Noise Information and Reporting, real-time noise monitoring and sound power level monitoring programs.

The Noise Management Plan May 2011 to satisfy Project Approval MCoA Schedule 3 condition 7 was submitted to DP&I for approval in May 2011. Real-time noise monitoring has not yet commenced as the program and monitoring locations are yet to be approved by DP&I. No response had been received by Duralie Coal at the date of this audit.

5.7.2 Noise Criteria

A Variation to EPL 11701 in April 2010 provided for changes to noise monitoring locations deemed necessary as a consequence of changes to property ownership. (EPA designated monitoring locations are “AAAS1 Woodley”, “AS2 Hattam” and “AAS3 Bailey”).

The scheduled properties referenced in Project Approval MCoA Schedule 3 conditions 1 and 2 have been updated to reflect the amended boundaries of the Duralie Extension Project. The noise survey report of February 2011 (the first quarterly report after the Project Approval) referenced the scheduled properties from the previous consent. The noise survey report of April 2011 used the updated list of properties for the noise monitoring and assessment.

5.7.3 Review of Noise Survey Results

Quarterly noise surveys have been conducted during February, April, July and October each year at the EPA nominated sites (EPL 11701 condition L6.1) to the south of the mine site (Woodley), east of the mine site (Hattam) and north of the mine site activities (Bailey). The Hattam and Bailey sites have been purchased by Duralie.

The results of the October 2010, February 2011, April 2011 and July 2011 surveys are.

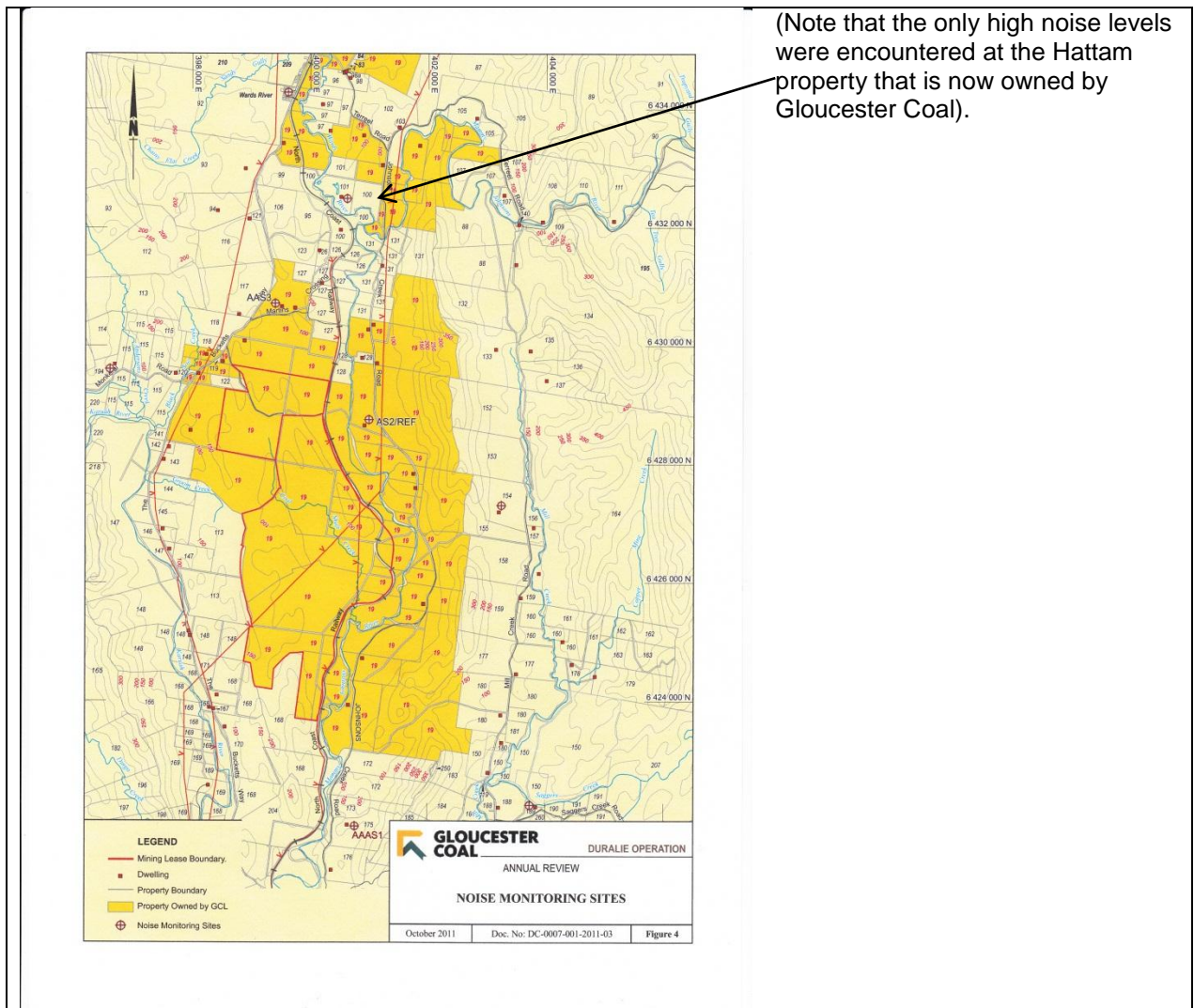
Table 5.7.3: 2010 to July 2011 Noise Survey Results

Monitoring Location	Mine Contribution to Noise Results			Noise Limits (Day/Evening/Night)
	Leq _{0eq(15 minute)} Day	Leq _{0eq(15 minute)} Evening	Leq _{0eq(15 minute)} Night	Leq _{0eq(15 minute)}
AAAS1 Woodley	Inaudible to <30	Inaudible to <32	26 to 32	35
AS2 GCL(ex Hattam)	<20 to 46	38 to 47	40 to 50	n.a.#
AAS3 GCL(ex Bailey)	Inaudible to 29	Inaudible	<20 to 37	36
Wards River Village	Inaudible	Inaudible to <26	24 to 28	35
Holloway	Inaudible to 34	Inaudible to 34	29 to 34	35
Kelleher	Inaudible to 34	Inaudible to 32	32 to 34	35
Gillard	Inaudible to 23	Inaudible to 24	20 to 33	35

Note that since this property is owned by GCL the noise limit does not apply.

Conclusion:

The noise surveys conducted during the 2009 - 2011 period demonstrated that the Duralie Mine is compliant with the EPL noise criteria at all privately owned properties monitored under prevailing atmospheric conditions.



5.7.4 Mobile Plant Noise Assessments

Key items of mobile plant at the Duralie Mine site are regularly assessed for noise emissions. Noise assessments of haul trucks occurred in December 2008, July 2009, January and July 2010 and February 2011. No significant deterioration of noise performance for any individual truck was detected.

The 2010 Environmental Assessment Duralie Extension Project, provided predictions on mine contributed noise emissions. Noise predictions for the three EPL monitoring locations (i.e. “Woodley”, “Bailey” and “Hattam”), predicted mine contributed noise emissions were consistent with monitored values for both the “Woodley” and “Bailey” locations. Mine contributed noise at the “Hattam” premise (the property is now owned by Gloucester Coal) were greater than predicted emissions due to proximity to mine operational areas.

5.7.5 Noise Complaints

The noise complaint procedures in the Noise Monitoring Program (November 2007) appear reasonable and robust. The number of noise complaints in each reporting period has been recorded in each AEMR. The complaints received by Duralie Coal (as reported in the AEMR's) were:

- 2010-2011 Twenty two (22) noise related complaints

- 2009-2010 Twenty two (22) noise related complaints
- 2008-2009 Nineteen (19) noise related complaints
- 2007-2008 Twenty three (23) noise related complaints

Noise complaints are the majority of all complaints received by Duralie Coal.

Recommendation:

Procedures be implemented and refined to establish the cause of noise complaints and review the mitigation measures taken to limit complaint re-occurrence where cause and effect relationships can be reliably demonstrated, and develop actions to reduce noise impact where practicable.

5.8 Site Water Management

[Project Approval MCoA Schedule 3 condition 25 to 29]

5.8.1 Site Water Management Plan

A Site Water Management Plan was developed in consultation with the DNR and DEC in November 2006 and June 2007. The Site Water Management Plan Version D was submitted to the DoP on 15 May 2008 and a revised document submitted to the DoP on 22 December 2008 for approval.

A Water Management Plan to satisfy Project Approval MCoA Schedule 3 condition 29 (dated 26 November 2010) was prepared and submitted to OEH for consultation and the DP&I in July 2011. No response from DP&I had been received by Duralie Coal at the date of this audit.

5.8.2 Water Management

Surface water management is achieved by separation of 'clean water' from undisturbed areas and 'dirty water' resulting from mining operation activities:

The Duralie water management system on the Duralie site:

- Minimise the generation of dirty water;
- Maximise re-use of dirty water;
- Provides secure water containment and disposal of collected water via irrigation on site;
- Manages dirty water to spill to the mine pit and not to the clean water catchments under extreme events in excess of design capacity; and
- Retains sediment laden water with elevated suspended solids onsite.

5.8.2.1 Mine Water ('dirty water')

Mine water is generated within the mine workings, waste rock emplacements, water storage areas and runoff from areas where coal is handled. Mine water is generally characterised by elevated EC, potentially elevated sulphate concentrations and low turbidity/TSS.

The principal 'dirty water' storage areas are:

- Main Water Dam;
- Main Pit;
- Auxiliary Dam 1 (AD1);
- Auxiliary Dam 2 (AD2);
- Sediment Dam VC1 (waste dump);
- Sediment Dams SD1 – SD5 (access road);
- Sediment Dams RS1 and RS6 (rail siding dams).

'Dirty water' management involves the control, collection and re-use of water that may be contaminated by mining operations and associated activities or which by its nature is considered to be undesirable for release to the environment. 'Dirty water' control is managed via on-site water storage to prevent escape to Coal Shaft Creek or Mammy Johnsons River. On-site management of the stored 'dirty water' occurs by irrigation and reuse on-site for dust mitigation.

Sediment laden water generated from surface runoff from internal haul roads, rainfall from areas stripped of topsoil (typically exposing clays), runoff from areas not adequately vegetated within sediment dam catchments and direct rainfall falling on water collection storages.

5.8.2.2 'Clean Water' Management

Clean water management is achieved with construction of diversion drains around disturbed areas (the source of 'dirty water') to reduce the volume of water collected in the mine water storages. The 'clean' surface water controls prevent clean runoff water from entering the open mining pit and overburden dump areas, where practicable. The main structures for 'clean' water management are:

- An extensive 'clean water' diversion drain established around the Main Water Dam (MWD) to the west of all mining activities ("Western Diversion Drain"). This drain intercepts runoff from the catchment above the MWD and delivers the clean water to Coal Shaft Creek;
- Clean water diversion bunds established around Auxiliary Dams 1 and 2;
- Diversion of Coal Shaft Creek undertaken in 2003 will remain in place until the creek can be re-established at the conclusion of mining;
- A culvert constructed under the Duralie internal Haul Road allows Coal Shaft Creek to flow through the site without receiving dirty water;
- Flood control embankments constructed to prevent inundation of mining areas from flooding of the ephemeral creeks/streams that flow in the vicinity of the mining operations area;
- Runoff control drains and bunds constructed to divert clean water runoff around the areas disturbed by mining activities.

5.8.3 Water Supply and Demand

The main water supply storage on-site is the Main Water Dam (MWD) located to the northwest of the mine site industrial area. The MWD and Auxiliary Dam 1 (AD1) are currently the principal permanent mine water storages on-site. Water from these dams comprises pit produced water (runoff /rainfall/seepage), water from specific sediment dams and surface water runoff from the Duralie Industrial area (that includes the Leighton workshops and general storage).

The MWD storage capacity is 1405 ML, Auxiliary Dam 1 462 ML and Auxiliary Dam 2 (when completed) will have a storage capacity of 2870 ML.

5.8.4 Site Water Balance

[Project Approval MCoA Schedule 3 condition 30a)]

Site Water Balance

Lindsay Gilbert (Gilbert & Associates Pty Limited) and Dr Noel Merrick (Heritage Computing) were approved by DP&I as suitably qualified and experienced persons for the preparation of the Water Management Plan on 18 February 2011. A simulated water balance was conducted by Gilbert & Associates Pty Limited in March 2011. The Site Water Balance document was prepared to address the requirements of this condition and submitted to DP&I in July 2011 as part of the Water Management Plan.

A review of the Main Water Dam (MWD) water balance for 2003 to May 2010 was conducted for the Duralie operations and demonstrated the following net water gain:

Inflows	(ML per annum)	Outflows	(ML per annum)
Pump from open cut pit to Mine Water Dam (MWD)	275	Irrigation	449
Pump from sediment dams	50	Evaporation	222
MWD rainfall-runoff	333	Haul Road (dust suppression)	77
MWD upstream seepage	170	Pump to Auxiliary Dam 1*	27
Western area irrigation “first flush” collection & Auxiliary Dam 1 seepage	120	Total Outflow	775
Total Inflow	948 MLpa	MWD Net Gain (MLpa)	173 MLpa

5.8.5 Surface Water

[Project Approval MCoA Schedule 3 condition 29(b)]

The Duralie site operates under a no-discharge policy. There were no indications from the site inspection conducted during this audit that the policy had been breached. At the time of inspection a new water storage dam (Auxilliary Dam 2) was under construction.

5.8.5.1 Surface Water Monitoring

Monitoring of surface water quality of streams and water storages on and surrounding the Duralie mine site is conducted in accordance with the Duralie Coal Mine “Surface and Groundwater Monitoring Plan” and EPL 11701 condition P1.2.

Surface water is sampled and analysed on a monthly and/or following a rainfall or release event. An “event” occurs when at least 20 mm of rainfall is received at the mine site within a 24 hour period.

Surface water samples collected are analysed for a suite of physical and chemical parameters by NATA registered laboratories.

Surface water monitoring results are compared with the Australian and New Zealand Environment and Conservation Council (ANZECC) *Guidelines for Fresh and Marine Water Quality (2000)* (Aquatic Ecosystems Table 3.4.1 (that apply to slightly to moderately disturbed systems) and EPL condition P1.2 and M2.1 requirements.

Use of the ANZECC Aquatic Ecosystems criteria is considered relevant, as water from Mammy Johnson River (the main receiving water body) is not used for human consumption, aquaculture and it is not a regular source of drinking water for livestock.

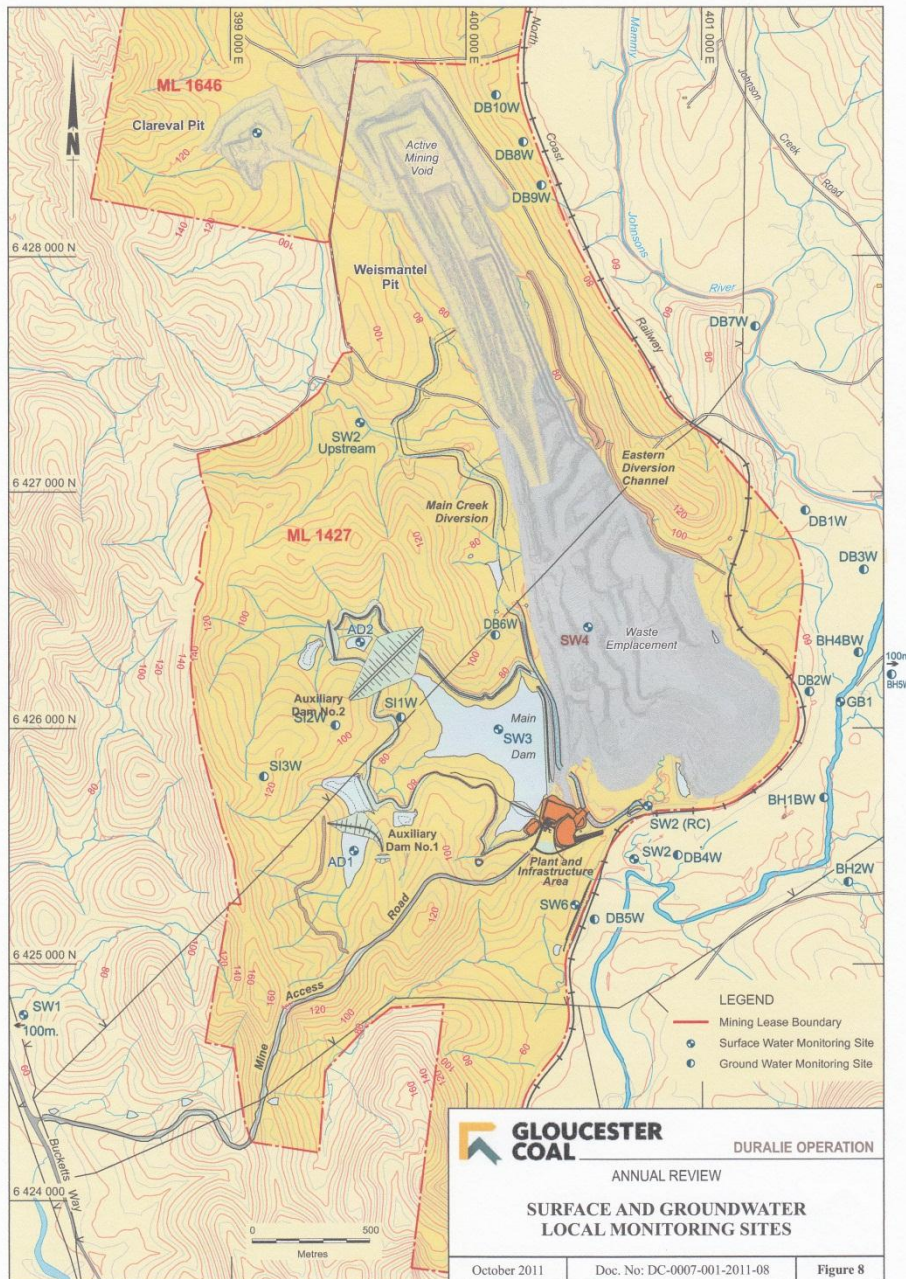
5.8.5.2 Review of Water Monitoring Results

Local Waterways

The Duralie Surface Water Monitoring Program sampling points and EPL 11701 approved points (condition P1.2) are:

EPA Point No	Duralie Monitoring Site No.	Description of Location
3	SW3	Main Water Dam
4	SW4	Open Cut
5	SW5	Coal Shaft Creek- near location of proposed Upland West Runoff Dam
6	SW6	The culvert bisecting sediment dams RS3 and RS4
10	SD1	Mine Site Access Road and Sediment Controls
11	SD2	Mine Site Access Road & Sediment Controls

12	SD3	Mine Site Access Road & Sediment Controls
13	SD4	Mine Site Access Road & Sediment Controls
14	SD5	Mine Site Access Road & Sediment Controls
15	RS1	Rail Siding Erosion & Sediment Controls
20	RS6	Rail Siding Erosion & Sediment Controls
27	VC1	Box Cut, Waste Emplacement & Mine Water Dam
29	SW1	Upstream of Karuah River (Local Monitoring Sites)
30	SW2	Coal Shaft Creek downstream (Local Monitoring Sites)
31	GB1	Gauging Board Mammy Johnsons River (local Monitoring Sites)
Duralie Monitoring Sites	Site 9 and 19 – Karuah River Site 11, 12, and 15 – Mammy Johnsons River	



The surface water monitoring results between 2008 and 2011 exhibited:

Parameter	Monitoring Results	Comment
pH	pH ranged from 6.3 (GB1 and Site 11, 24/1/11) to 8.4 (SW1, 27/6/11 and Site 19, 18/7/11).	pH ranged from 6.3 to 8.4. The pH values for the natural waterways has exhibited a average of 7.8 over the 2008-2011 period. (The ANZECC range for pH for lowland rivers is 6.5-8.0).
Electrical conductivity (EC)	Electrical conductivity (EC) across all sites ranged about the ANZECC nominated band of 200-300µS/cm.	EC values above the ANZECC range that occurred between 2008 and 2011 are attributed to low stream flows and groundwater influence under dry weather periods during the drought. The EC values have reduced in the latter part of the monitoring period (i.e. 2010-2011) EC was generally higher within Mammy Johnsons River than in the Karuah River. Also EC was generally higher within Coal Shaft Creek upstream of Duralie when compared to Mammy Johnsons River.
Turbidity	Turbidity readings were generally low at all sampling locations, except when first flush flows occurred after rainfall events.	The ANZECC range for turbidity for lowland rivers is 6-50 NTU).
Total suspended particulate (TSS)	Total suspended particulate (TSS) were similar within Mammy Johnsons River and Karuah River. Upstream of Coal Shaft Creek demonstrated the highest TSS results.	There is no stated ANZECC guideline for TSS. Elevated TSS results mirrored the turbidity data and were typically recorded during high flow events following rainfall.
Sulphate	Sulphate concentrations recorded at all sites were typically below 50mg/l with an average concentration of 35mg/l or lower.	An occasional high sulphate concentration was recorded for at Site SW2 and SW6 but these results were sporadic and did not exhibit a consistent high value that would be attributable to any specific activity source. There is no stated ANZECC guideline.
Manganese	Manganese concentrations recorded were generally low and within the ANZECC guideline of less than 1.9 mg/l.	However, concentrations above the ANZECC guideline were recorded in two samples taken from Site SW2 Upstream of the mine activities (30 December 2010 and 17 January 2011) both results being under low flow conditions.
Filtered iron	Filtered iron concentrations at all sites were typically low.	A filtered iron concentration of 23.1 mg/l was recorded for a sample collected at Site SW2 Upstream of the mine activities on 21 July 2011, the source was not identifiable. There is no stated ANZECC guideline for filtered iron.
Calcium (Ca), Magnesium (Mg) and chloride (Cl)	For calcium, magnesium and chloride concentrations there are no stated ANZECC guidelines.	Calcium and magnesium concentrations were not high at any site (maximum 94 mg/l and 59 mg/l respectively at Site SW6 on 15 September 2010 and SW2 Upstream on 15 August 2011). Chloride concentrations were variable across the monitored sites (between 12 and 370 mg/l – maximum chloride concentration occurring at Site SW2 Upstream (Coal Shaft Creek) on 15 August 2011). Higher chloride concentrations were observed under low stream flows.

Conclusion:

The surface water monitoring data has not demonstrated any significant changes in water quality in the natural waterways that would be attributable to the Duralie Mine operations and activities. The sporadic higher readings for parameters appeared to be related to periods of low rainfall and hence low flow conditions in the waterways, or following heavy rainfall where first flush waters conveyed suspended solids from upstream runoff.

Water Storage Monitoring

Monitoring for MWD site SW3 (major) indicated a moderate EC (2040 uS/cm), slightly alkaline pH (7.8) and low metals concentrations. Similar monitoring for the open cut site SW4 indicated an EC of approximately 4400 uS/cm, slightly acidic pH (6.2) and elevated sulphate, calcium and chloride concentrations. (These levels of sulphate are explained by the sulphides present within the pit rock and coal, calcium from liming of wastes to adjust pH, and chloride from the former marine environment).

No areas of low pH water were observed within the open pit during the reporting period. On the basis of mine water quality data for 2008-2011, no significant change in water quality from the mine has been exhibited.

5.8.3 Groundwater

[Project Approval MCoA Schedule 3 condition 29(c)]

5.8.3.1 Groundwater Management Plan

Groundwater management was included in the Duralie Site Water Management Plan (SWMP), section 7, initially prepared and approved in November 2006. The SWMP was revised and Version F was approved by DoP on 22 December 2008.

A Groundwater Management Plan, dated July 2011 was prepared to address requirements of Project Approval MCoA Schedule 3 condition 29(c) and submitted to the DP&I as Appendix 2 of the Water Management Plan required under the Project Approval (dated 26 November 2010). No response from DP&I had been received by DCPL at the date of this audit.

5.8.3.2 Groundwater Monitoring

Groundwater has been monitored in accordance with the Duralie SWMP (Section 7) dated 6 November 2006 (revised 22 December 2008) and Groundwater Management Plan July 2011:

Location	Monitoring Points	Frequency	Parameters Monitored
Mammy Johnsons River	DB3W2, BH4BW2 (Alluvium)	Daily	Water level
	DB11W3 (Deeper Groundwater)		
	DB3W2, BH4BW2 (Alluvium).		
	DB1W, DB2W, DB4W, DB5W, DB7W, DB9W, DB10W (Deeper Groundwater)	Quarterly	Water level, pH, EC, DO, TDS, Total Acidity, Total Alkalinity, Cl, SO ₄ , Ca, Mg, Na, Al, Fe, Mn, Zn.
	DB8W (Deeper Groundwater)		
	DB11W3 (Deeper Groundwater)		
Coal Shaft Creek	DB6W, SI1W, SI2W, SI3W (Deeper Groundwater)	Quarterly	Water level, pH, EC, DO, TDS, Total Acidity, Total Alkalinity, Cl, SO ₄ , Ca, Mg, Na, Al, Fe, Mn, Zn.
Open Cut Operations	Open pit sump(s)	During pumping	Volume of water extracted
		Weekly	Water level, pH, EC and Turbidity
		Monthly	Total Acidity, Total Alk., TSS, Cl, SO ₄ , Ca, Mg, Al, Fe, Mn, Zn.
In-pit Waste Rock Emplacement	WR13, WR23	Daily	Water level
		Quarterly	Water level, pH, EC, DO, TDS, Total Acidity, Total Alkalinity, Cl, SO ₄ , Ca, Mg, Na, Al, Fe, Mn, Zn

The construction and early mining groundwater bore network was expanded to ten (10) deep and shallow bores, to obtain samples from different aquifers. During 2004 the monitoring network was expanded by a further three (3) bores for the purpose of sampling groundwater within the proposed mine water irrigation area (identified as “SI” bores). In 2007 an additional piezometer (designated DB7W) was installed between the northern future mine workings and Mammy Johnsons River.

Comments on analysed parameters for groundwater monitoring conducted during 2010-2011 are:

Parameter	Monitoring Results	Comment
Water Depth	Depth to groundwater was comparable with recent historical data for most monitored bores.	Bores DB2W, DB4W and DB8W continued to show recovery from aquifer drawdown (refer to Groundwater Depressurisation below). Bore DB6W shows a rising of the water table during 2010-2011.
pH	pH is comparable with historical data.	pH in the reporting period varied from a slightly acidic 5.2 (DB10W in November 2010) to a slightly alkaline 7.8 (SI2W in February 2011).
Electrical conductivity	Electrical conductivity generally showed a high degree of variability across many of the bores as has historically been reported.	The variability of EC appears to reflect the cycle of dry and wet conditions over the 2010-2011 period. The shallow bores intercept generally low conductivity (fresher) aquifers that are more affected by wet weather conditions as have been experienced in the 2010-2011 period.
Calcium and magnesium	Calcium and magnesium concentrations across all bores generally exhibited consistent concentrations	No significant variation in concentrations of calcium and magnesium.
Sulphate	Sulphate concentrations varied between the bores.	The groundwater sulphate results although variable between bores did not demonstrate a wide range of concentrations in any particular bore except for Bore SI3W that exhibited a range of over 200 mg/l in the 2008 to 2011 period.
Aluminium	Aluminium concentrations are low in all the deep wells.	Aluminium concentrations were low (close to the limit of analytical detection) in all the deeper wells but slightly higher in the shallower bores. The highest concentration recorded was 158 mg/l (BH4BW in February 2011).
Dissolved iron	Dissolved iron concentrations showed no common trend with rises and falls in concentration across bores.	Dissolved iron results were highly variable with the highest concentration recorded was 158 mg/l (BH4BW in February 2011).
Manganese	Manganese concentrations in all bores were low with an exception being 5.94 mg/l in BH4BW in February 2011.	The occasional high manganese concentration encountered could be due to sample contamination as there was no consistent trend in results discernable.
Zinc	Zinc concentrations were essentially low and not inconsistent with available historical data.	Zinc concentrations showed a wide range from a low of <0.05 mg/l (several wells) to a high of 152 mg/l (BH4BW in February 2011). Zinc is notorious for high variability due to contamination of samples occurring during sampling.

The Duralie EIS described groundwater in the vicinity of the coal measures as being characterised by the pH – 6.3 to 6.6 and electrical conductivity – 1600 to 4000 $\mu\text{S}/\text{cm}$. The groundwater monitoring results have exhibited a slightly wider pH range of between 5.2 and 7.5 and electrical conductivity range of 1190 to 5680 $\mu\text{S}/\text{cm}$, but generally the groundwater quality is consistent with the background levels with variation probably attributable to effects on groundwater levels and flow from the drought conditions and recent rainfall events.

Conclusion:

Review of the groundwater data indicates that the groundwater quality is varying in a random manner from bore to bore, and is considered to be typical of a natural groundwater system.

5.8.5.3 Groundwater Depressurisation

Depth to water collected from piezometer monitoring shows that bore water levels are generally consistent between bores and with both EIS (1996) and EA (2010) predictions.

The four bores to the west of the open cut pit (SI1W, SI2W, SI3W & DB6W) are all above or close to maximum predicted levels.

Three bores (DB1W, DB2W & DB4W) located to the east and south of the Weismantel open cut pit previously exhibited water levels higher than the maximum predicted drawdown levels but by May 2011, bore DB1W and DB5W had fully recovered and similarly bores DB2W and DB4W had recovered 67% and 60% respectively of apparent drawdown observed since June 2003. This water

level recovery could also be attributed to the higher rainfall over the past 2 years with recharge of the water table.

5.8.4 Surface and Groundwater Response

[Project Approval MCoA Schedule 3 condition 29(c)]

The Groundwater Management Plan, Appendix 3 sections 7 and 8 (Table 8 Monitoring Against Performance Indicators and Measures) of the Water Management Plan, July 2011 provides response plans to offset any loss to base flows to Mammy Johnsons River and provide compensatory water supply to any land owner or privately owned land whose water licence entitlements are impacted as a result of the Duralie Extension Project.

5.8.5 Irrigation

5.8.5.1 Irrigation Management Plan

An Irrigation Management Plan for the Duralie site was prepared and approved by DoP on 23 August 2005. The Plan was revised and submitted to DoP on 15 December 2008.

The Water Management Plan prepared under the Project Approval MCoA Schedule 3 condition 29 (dated 26 November 2010) has the irrigation system and water usage incorporated into the Surface Water Management Plan Project Approval MCoA Schedule 3 condition 29(b). The Water Management Plan was submitted to the OEH, NOW and D&PI in July 2011. No response to the Water Management Plan had been received by Duralie Coal at the date of this audit.

5.8.5.2 Irrigation Methodology

The Duralie Coal Mine operates with a continual stored water surplus. There is only minimal requirement for process water on site (e.g. for dust suppression and fire fighting).

Irrigation is used to draw down water in the water storage dams and involves a network of fixed sprays supported by travelling irrigators. A fully automated, fixed spray irrigation system, operating on a trial basis, was installed, commissioned and run during 2010-2011, replacing some travelling irrigators.

To ensure irrigation of mine water does not have an unacceptable adverse impact on the environment monitoring includes evaluation of irrigation source water quality, automated soil moisture measurement and manual downloading of “Gbug” sensor/loggers, runoff water quality monitoring from areas under irrigation, and soil macro-invertebrate, plant species diversity and pasture biomass assessment of the irrigated areas.

Indicative soil sampling within irrigated areas is undertaken in August each year with soil tested for chloride, sulphate, bicarbonate alkalinity, sodium, calcium and magnesium concentrations to determine whether there was any significant salt accumulation within irrigated topsoils. Soil analysis results for 2005-07 and 2010-11 compared with non-irrigated sites indicated:

Run No.	Comparisons of soil analysis results for 2005-07 and 2010-11
10	An increase in electrical conductivity, bicarbonate alkalinity, sulphate, calcium, and sodium was exhibited in the soil, with comparative decreases in concentration of chloride and magnesium.
16	Increased electrical conductivity, sulphate, chloride and sodium was exhibited in the soil, with comparative decreases in bicarbonate alkalinity, and calcium and magnesium.

5.9 Erosion and Sediment Control

[Project Approval MCoA Schedule 3 condition 29(b)]

5.9.1 Erosion and Sediment Control Plan

An Erosion and Sediment Control Plan (ESCP) was prepared in June 2002. This plan formed part of the overall Site Water Management Plan (SWMP) Version F, approved by DoP on 22 December 2008. The ESCP provides generic details and concepts to control erosion and prevent sedimentation and references the Department of Housing publication *“Managing Urban Stormwater – Soils and Construction (1998)”* as the design guideline.

“Managing Urban Stormwater – Soils and Construction (1998)” has been revised as *“Managing urban storm water – Soils and Construction Volume 1”* Landcom, 2004 with a companion document known as *“Managing urban storm water – Soils and Construction Volume 2E”* (DECC 2008) that details specific erosion and sediment control requirements for mines and quarries.

Recommendation: That *“Managing urban storm water – Soils and Construction Volume 1”* Landcom, 2004 and *“Managing urban storm water – Soils and Construction Volume 2e”* (DECC 2008) be adopted as the relevant design guidelines for revision of the Erosion and Sediment Control Plan.

One specific difference between the old and new guidelines is the design method to size sediment basins. The ESCP requires sediment basins to be designed to capture the 20-year, 1-hour storm event (55 mm) with a coefficient of runoff of 0.8. The DECC Volume 2E Mines and Quarries 2008 requires sediment basins to be designed to the 90th Percentile, 5-day rainfall depth (at a minimum), with a volumetric coefficient of runoff of 0.7.

The Duralie ESCP requires sediment basins to be emptied within 10-days of a storm event (after treating the water if necessary). Therefore, the design volume for the Duralie site should be the 90th percentile, 10-day rainfall depth (about 70 mm), with a volumetric coefficient of runoff of 0.7. As it happens, the two are almost identical so the existing design methodology use for Duralie has been satisfactory. The allowance of an extra 10 percent for sediment retention is also acceptable providing that markers are installed in all sediment basins to show when that level is reached.

Recommendation: Markers be installed in each sediment basin to show the sediment-laden water storage depth to provide an indication when the retention volume maximum is exceeded.

5.9.2 Erosion and Sediment Control Management

The control of sediment generation and erosion for Duralie is primarily achieved by:

- Progressive rehabilitation and vegetation establishment on disturbed areas (e.g. completed sections of the overburden emplacements) to minimise the area exposed to erosion;
- Direction of runoff from disturbed areas into sediment dams; and
- The placement of silt fences, silt rolls (gravel filled), straw bales, geotextile fabric and/or rock in order to trap or restrict the generation of silt and/or to dissipate flow energy.

The elements of sediment control are regularly monitored at the Duralie site and maintenance of sediment control structures undertaken. Sediment dams are cleaned out when the storage volume is substantially reduced by sediment deposition (i.e. when 30% of storage volume is lost to sediment build up) and are inspected after major rainfall events (refer to recommendation for installation of markers).

Sloping areas of the overburden emplacements that are under rehabilitation are stabilised by structural controls such as bench drains and contour banks to break up the effective slope length exposed to erosion. Final slopes will generally not exceed 14 degrees that aid in the control of erosion and sediment generation.

5.9.3 Erosion and Sediment Control Status

The Duralie mine had the following erosion and sediment control structures in use during the audit inspection:

- Five (5) internal haul road sediment dams – designated as SD1 to SD5
- Two (2) rail siding sediment dams – designated as RS1 and RS6
- One (1) waste dump sediment dam – designated as VC1

The Duralie sediment dams are inspected following rainfall events and particularly if the rainfall has been sufficient to result in the dams having the potential to spill. Dam overflows occurred following heavy rainfall events between 2007 and 2011:

Date	Rainfall Events Resulting in a spill	Comments
2008-2009	75 mm September 2008 128 mm February 2009 116 mm March 2009 53 mm May.	Spills occurred from four (4) separate dams – SD2, SD3, SD5 and RS1 (each 4 occasions).
2009-2010	57mm November 2009 74mm June 2010 20mm July 2010 43mm August 2010	Spills occurred from three (3) separate dams – SD2, SD3 and SD5 (4 occasions).
2010-2011	170mm November 2010, 93mm December 2010, 108mm April 2011, 151mm June 2011, 123mm July 2010 62mm August 2011.	Spills occurred from five (5) separate dams – SD1-SD5 (inclusive).

Water quality from the sediment dam overflows had an average suspended solids concentration of 94 mg/l.

If water trapped in a sediment basin is not re-used on site, the Duralie ESCP (Surface Water Management Plan section 7.1, July 2011) allows water collected in the sediment dams to be applied to “*well-grassed areas where sufficient grassed buffer exists to prevent the migration of sediments to watercourses*”. This is not best practice. Unless those lands drain back to a sediment capture system the water should be treated before being released from the site to achieve:

- pH 6-8
- <50 mg/L of suspended solids, and
- no oil and grease

The ESCP recommends that diversion drains be designed for the 1 in 10 year critical rainfall event. That is sufficient for structures that will have a design life of no more than three years. However, if the drain is designed to last more than that it should be designed for the 1 in 20-year storm (“*Managing urban storm water – Soils and Construction Volume 2e*” (DECC 2008)).

Recommendation: Check the design of all drainage lines for adequacy against “*Managing urban storm water – Soils and Construction Volume 2e*” (DECC 2008).

An addendum to the ESCP was prepared in 2008 (ESCP-Aux Dam-A) to accompany the construction of two new dams. The largest of those new dams was under construction when the site was inspected in November 2011. Dirty water from the construction activities was effectively being trapped by the Main Water Dam with no release of turbid water from the site.

Conclusion:

The erosion and sediment control measures, and the separation of clean and dirty water, were noted during the audit site inspection to have been implemented in a satisfactory manner. The site was successfully implementing a “no-discharge” policy.

5.10 Rehabilitation

[Project Approval MCoA Schedule 3 conditions 47 to 49]

5.10.1 Rehabilitation Management Plan

A Rehabilitation Management Plan was submitted to the DoP on 10 May 2007 for review and approval and the Final Rehabilitation Management Plan Revision B was submitted to DoP on 5 September 2007. This Rehabilitation Management Plan was developed taking account of the NSW Minerals Council (NSWMC) Rehabilitation Design Practice Notes. The site operates under this approved Rehabilitation Plan Version B dated 5 September 2007.

A Rehabilitation Management Plan (dated 25 May 2011) prepared to satisfy the Project Approval MCoA Schedule 3 condition 49 was prepared in consultation with the DEH, OoW, GLC and DP&I and submitted to the DITRIS. No response from DITIS had been received by Duralie Coal at the date of this audit.

The primary objectives of the Duralie rehabilitation program are stated to be:

- Production of a landform that is stable and consistent with the local surrounding landscape;
- Minimisation of erosion;
- Re-instatement of pre-mining land capability for the final land uses of grazing, woodland habitat and/or other appropriate land use;
- Tree and shrub establishment, mounding or bunding to provide visual amenity and to re-establish flora and fauna corridors and habitats; and
- Minimising the amount of disturbed land awaiting rehabilitation.

5.10.2 Rehabilitation Progress

An estimated 236,000 cubic metres of topsoil resource is held in various stockpiles on the Duralie site for reuse in rehabilitation of the disturbed areas. On the basis of areas currently disturbed by mining and overburden emplacement the available topsoil from the stockpiles is adequate to provide a nominal 100 to 150mm cover over all areas that will be prepared for revegetation.

Rehabilitation has been completed along the shoulders of the site haul road, western mine water dam, clean water diversion drain, rail siding embankments, storage dam embankments and the Coal Shaft Creek diversion.

The establishment of revegetation on disturbed areas at Duralie site has been:

Year	Location	Status
2006	Eastern waste emplacement	95% ground cover (pasture area), kikuyu and Rhodes grass dominant. Scattered acacia to 3m in height.
2007/8	Southern waste	80% ground cover, acacia to 3m in height, eucalypts to 5m, (western

	emplacement	facing). Plateau area and eastern facing side exhibited substantial ground cover – predominantly Rhodes and paspalum grass species.
2009	Southern waste emplacement	70% ground cover, largely Rhodes grass and paspalum. Scattered acacia establishment to 2m. Occasional emerging eucalypt noted.
2010	Eastern flank of Weismantel Pit	Revegetation planting occurred within drains occurred towards end of 2010.
2011	Eastern waste emplacement	20% ground cover (Rhodes grass), eucalypt/acacia tree establishment. Tree species juvenile established.

The rehabilitation target for 2011-2013 has provision for 52.8 hectares of rehabilitated area by end 2013.

5.10.3 Rehabilitation Status (November 2011)

An area of the overburden waste rock emplacement was being rehabilitated at the time of the audit inspection (i.e. November 2011). Part of the overburden emplacement had been seeded, and part was just being completed with contouring and drains established, and topsoil being spread (Plates 7 and 8 respectively). The slopes of the emplacement areas are long and relatively steep (about 25 percent). There is some ground cover in the form of rock fragments, although the rock slakes quickly to a sandy soil. It is possible that the slope lengths exceed those recommended in Figure 4.2 of Landcom, 2004.

Recommendation: That the slopes lengths of rehabilitated waste rock are confined to those recommended in *“Managing urban storm water – Soils and Construction Volume 1” Landcom, 2004*. This will require an understanding of the erodibility of the soils (K-Factor).

Plate 1 shows an area of the overburden emplacement that was direct-seeded. Ultimately this has proved successful but, *“Managing urban storm water – Soils and Construction Volume 1” Landcom, 2004* and *“Managing urban storm water – Soils and Construction Volume 2e” DECC 2008* requires satisfactory ground cover to be achieved in a shorter time frame. A minimum ground cover of 50 percent should be achieved within 20 days from final surface profiling and 70 percent should be achieved within 60 days. Direct seeding cannot achieve that.

Recommendation: That the groundcover requirements of *“Managing urban storm water – Soils and Construction Volume 1” Landcom, 2004* be adopted in any revised Rehabilitation Plan. Groundcover could be achieved in the required timeframes by the use of hydro-mulching and/or applying bonded fibre matrix. Consider also the use of a sterile crop to provide ground cover while natives germinate and grow. In general, the ESCP and SWMP concentrate mainly on sediment control, when, in fact, more emphasis should be placed on erosion control.

The rehabilitated slopes are linear in nature, with small benches to break up the slope. The latest guideline for *“Mine Rehabilitation”* (Department of Industry, Tourism and Resources, 2006) recommends that slopes are left concave, without benches. Slope length may be reduced using windrows of mulch, rock or using straw/coir wattles. Slope length is most important until required ground cover is achieved.

Recommendation: Consider revising rehabilitation planning to adopt a concave profile for rehabilitated slopes where practicable.



Plate 2: Established rehabilitation on the southern face of the overburden emplacement above the Coal Creel Diversion.



Plate 3: Overburden emplacement eastern side with recent seed germination in the foreground and contoured slopes behind ready for topsoil placement.



Plate 4: Contoured slope on the overburden emplacement with rock fragments used on the surface for stabilisation prior to topsoil placement.

6. Conclusions and Recommendations

The Duralie Coal Mine operations generally demonstrate a high degree of compliance with the implementation of their environmental management plans.

The Management Plans prepared to satisfy the Project Approval dated 26 November 2010 improve the management and mitigation measures for the project. The Management Plans had been submitted to the relevant authorities in accordance with the MCoA requirements, but Duralie Coal had not received a response from DP&I in relation to approval of the Plans at the date of this audit.

Environmental Management Strategy

The Environmental Management Strategy provides a sound basis for an environmental management system for the Duralie Coal Mine operations and documentation. The EMS addresses the elements of ISO 14001.

As this is the latest revision of the EMS comments included in this audit in relation to the Environmental Management Strategy have been based on this document.

Environmental Monitoring Programs

The monitoring programs for each environmental aspect (i.e. noise, blast and vibration, air quality, surface water, groundwater, irrigation, rehabilitation, heritage, rail movements and waste) are considered adequate to provide data for the assessment of the operations in relation to the MCoA and EPL requirements and to assess consistency with the predictions in the environmental impact assessments and statements of environmental effects.

Air Quality

The latest Air Quality and Greenhouse Gas Management Plan, as required under Project Approval (MCoA Schedule 3 condition 23) was submitted to DP&I on 7 April 2011. No response from DP&I in relation to the Air Quality and Greenhouse Gas Management Plan had been received by Duralie Coal at the date of this audit.

Dust deposition levels recorded from all gauges had an annual average value of 1.8 g/m²/month for all gauges (excluding contaminated results), which is less than the *total impact* criteria of 4 g/m²/month. Dust gauge D1 high results (shaded grey) are attributed to the location of the gauge and close proximity of the gauge to on-site vehicular traffic. The HVAS PM₁₀ and TSP monitoring results demonstrated compliance with the air quality criteria at all sites during the 2008-2011 period.

Biodiversity

As part of Duralie Coal's environmental monitoring program twice yearly biological monitoring of the streams near the Duralie mine has been conducted with an initial environmental assessment of the aquatic ecosystems of Mammy Johnsons River and the Karuah River above the junction with Mammy Johnsons River carried out prior to the commencement of mining operations in 2003. The September 2010 and March 2011 surveys found that *"there has been a consistent level in ecosystem condition compared to previous years and show no evidence of any adverse effects on the aquatic macroinvertebrate community. Therefore, there appears to no adverse effects on the aquatic ecosystem as a result of the mine's operations."*

Blasting

Conclusion:

Blast overpressure results have complied with the MCoA and EPL criteria, with the only results exceeding 120dBL recorded at Duralie Coal owned premises.

Vibration

No ground vibration results have exceeded 10 mm/s at any of the monitoring sites between 2008 and 2011, with only four blasts have results of ground vibration exceeding 5 mm/s (three (3) events during 2010-2011 and one (1) event in 2009-2010, all at a mine owned premise. Vibration monitoring at Weismantels Inn also demonstrated that all ground vibration levels were less than 5mm/s.

Vibration Recommendation:

V1 - No vibration monitoring of Mammy Johnsons Grave located south of the current mining operational area has yet occurred. Monitoring of this site should be undertaken to satisfy MCoA.

Noise

Conclusion:

The noise surveys conducted during the 2008 to 2011 period demonstrate that the Duralie Mine is compliant with the EPL noise criteria at all privately owned monitored locations under the prevailing atmospheric conditions. (Note that the only high noise levels were encountered at the Hattam property that is owned by Gloucester Coal).

Noise Recommendation:

N1 - Procedures be implemented and refined to establish the cause of noise complaints and review the mitigation measures taken to limit complaint re-occurrence where cause and effect relationships can be reliably demonstrated, and develop actions to reduce noise impact where practicable

Surface Water Quality

Conclusion:

The surface water monitoring did not demonstrate any significant changes in water quality in the natural waterways that would be attributable to the Duralie Mine operations and activities during the 2008 to 2011 period. Sporadic higher readings for parameters appeared to be related to periods of low rainfall and hence low flow conditions in the waterways, or following heavy rainfall where first flush waters conveyed suspended solids from upstream runoff.

Groundwater

Review of the data indicates that the groundwater quality results exhibit variations between bores in a random manner. This is not considered unusual for a natural groundwater system. On this basis, no mine operational activities are believed to have influenced groundwater quality. Depth to water collected from piezometer monitoring demonstrates that bore water levels are generally consistent within bores and consistent with the EIS (1996) and EA (2010) predictions.

Erosion and Sediment Control

Conclusion:

The erosion and sediment control measures, and the separation of clean and dirty water, were noted during the audit site inspection to have been implemented in a satisfactory manner. The site was successfully implementing a “no-discharge” policy.

Recommendations in relation to the Duralie Erosion and Sediment Control Plan suggest revision should occur to update the Plan in accordance with “*Managing urban storm water – Soils and Construction Volume 1*” Landcom, 2004. A companion document known as “*Managing urban storm water – Soils and Construction Volume 2E*” (DECC 2008).

Erosion and Sediment Control Recommendations:

ESC1 - “*Managing urban storm water – Soils and Construction Volume 1*” Landcom, 2004 and “*Managing urban storm water – Soils and Construction Volume 2e*” (DECC 2008) be adopted as the relevant design guidelines for any revision of the Erosion and Sediment Control Plan

ESC2 - Markers be installed in each sediment basin to show the sediment-laden water storage depth, to provide an indication when the retention volume maximum is exceeded.

ESC3 - Check the design of all drainage lines for adequacy against “*Managing urban storm water – Soils and Construction Volume 2e*” (DECC 2008).

Rehabilitation

Conclusion:

Overburden waste rock emplacement inspected during this audit was being rehabilitated with the part of the overburden emplacement topsoiled and seeded showing good vegetated cover, and part being completed with contouring and establishment of drains, and topsoil being spread. The slopes of the emplacement areas are long and relatively steep (about 25 percent) but appeared stable at the time of the audit. Rock fragments as ground cover had been used in some areas providing some temporary surface stability, although the rock was observed to slake quickly to a sandy soil. Establishment of seeded groundcover was progressing in these areas.

Rehabilitation Recommendations:

R1 - Slope lengths of rehabilitated waste rock be confined to those recommended in “*Managing urban storm water – Soils and Construction Volume 1*” Landcom, 2004. This will require an understanding of the erodibility of the Duralie soils (K-Factor).

R2 - Groundcover requirements of “*Managing urban storm water – Soils and Construction Volume 1*” Landcom, 2004 be adopted in any revised Rehabilitation Plan. Groundcover could be achieved in the required timeframes by the use of hydro-mulching and/or applying bonded fibre matrix. Consider also the use of a sterile crop to provide ground cover while natives germinate and grow. In general, the ESCP and SWMP concentrate mainly on sediment control, when, in fact, more emphasis should be placed on erosion control.

R3 - Consider revising rehabilitation planning to adopt a concave profile for rehabilitated slopes where practicable.

Attachment A

Project Approval Duralie Extension Project

Minister's Conditions of Approval 26 November 2010

MCoA	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.		Noted	
	TERMS OF APPROVAL			
2/2	<p>The Proponent shall carry out the project generally in accordance with the:</p> <ul style="list-style-type: none"> (a) EA; (b) statement of commitments; and (c) conditions of this approval. <p>Notes: <i>The general layout of the project is shown in Appendix 2; and The statement of commitments is reproduced in Appendix 9.</i></p>	<p>DA 168/99; <i>Proposed Alterations to Duralie Coal Development</i>, Oct 1998, Modification application MOD-13-3-2003-I, 29 Nov 2002; Modification application MOD-92-9-2003-I, 21 Aug 2003; SEE <i>Duralie Extended Modification</i>, Mar 2006 Modification application DA 168-99 MOD 4, 27 Oct 2008 Modification application MOD 6 Environmental Assessment Duralie Extension Project, Jun 2009</p>	C	The Duralie Coal Mine has been developed generally in accordance with the Environmental Assessments and Modifications submitted to the project approved between 1998 and 2010.
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.	Modification application MOD 6 Environmental Assessment Duralie, Jun 2009	Noted	
2/4	<p>The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:</p> <ul style="list-style-type: none"> (a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with this approval; and (b) the implementation of any actions or measures contained in these documents. 		Noted	

MCoA	Condition	Verification	Compliance	Comments															
	LIMITS ON APPROVAL																		
2/5	The Proponent may carry out mining operations on site until 31 December 2021.		Noted																
2/6	The Proponent shall not extract more than 3 million tonnes of coal from the site in a calendar year.		C	<div>Total ROM coal production is compliant with this condition:</div> <table><tr><th>Annual Production Period</th><th>Production</th></tr><tr><td>Sep 2010 to Aug 2011</td><td>1.71mtpa</td></tr><tr><td>Sep 2009 to Aug 2010</td><td>1.727 mtpa</td></tr><tr><td>Sep 2008 to Aug 2009</td><td>1.60 mtpa</td></tr><tr><td>Sep 2007 to Aug 2008</td><td>1.77 mtpa</td></tr></table>	Annual Production Period	Production	Sep 2010 to Aug 2011	1.71mtpa	Sep 2009 to Aug 2010	1.727 mtpa	Sep 2008 to Aug 2009	1.60 mtpa	Sep 2007 to Aug 2008	1.77 mtpa					
Annual Production Period	Production																		
Sep 2010 to Aug 2011	1.71mtpa																		
Sep 2009 to Aug 2010	1.727 mtpa																		
Sep 2008 to Aug 2009	1.60 mtpa																		
Sep 2007 to Aug 2008	1.77 mtpa																		
2/7	<div>The Proponent shall ensure that:</div> <div><div>(a) all coal is transported from the site by rail;</div><div>(b) no more than 5 laden trains leave the site each day; and</div><div>(c) no more than 4 laden trains leave the site each day, when averaged over a 12 month period</div></div>		C	<div><div>(a) All ROM coal is transported from Duralie Mine to Stratford Mining Complex by rail with transport restricted to between 7am and 10pm.</div><div>(b) Train movements (Duralie-Stratford-Duralie circuit) per annum have been:</div></div> <table><tr><th>Annual Period</th><th>Total Trains/yr</th><th>Daily Average</th></tr><tr><td>Sep 2010 to Aug 2011</td><td>821</td><td>4</td></tr><tr><td>Sep 2009 to Aug 2010</td><td>904</td><td>4</td></tr><tr><td>Sep 2008 to Aug 2009</td><td>852</td><td>4</td></tr><tr><td>Sep 2007 to Aug 2008</td><td>932</td><td>4</td></tr></table>	Annual Period	Total Trains/yr	Daily Average	Sep 2010 to Aug 2011	821	4	Sep 2009 to Aug 2010	904	4	Sep 2008 to Aug 2009	852	4	Sep 2007 to Aug 2008	932	4
Annual Period	Total Trains/yr	Daily Average																	
Sep 2010 to Aug 2011	821	4																	
Sep 2009 to Aug 2010	904	4																	
Sep 2008 to Aug 2009	852	4																	
Sep 2007 to Aug 2008	932	4																	
2/8	<div>The Proponent shall only receive trains on site or dispatch trains from the site between 7am and 10pm.</div> <div>However, with the written approval of the D-G these hours may be extended up to 2am, but only for a maximum period of 3 years at any one time. In seeking this approval, the Proponent must:</div> <div><div>(a) provide evidence to demonstrate that there are insufficient train paths between 7am and 10pm to transport the coal produced on site, and that all reasonable and feasible measures to reduce the number of train trips generated by the project have been exhausted; and</div><div>(b) describe the measures that would be implemented to reduce the potential amenity impacts of extended train operating hours.</div></div>		Not triggered	No request to extend the hours of rail movements has occurred.															
	SURRENDER OF CONSENTS																		
2/9	By the end of December 2011, or as otherwise agreed by the D-G, the Proponent shall surrender all existing development consents for the site in accordance with Section 104A of the	Determination of Application (DA 168/99), 3 Dec 2008	Noted	As the surrender of the existing consents is not due until the end of December 2011, comments in this audit are provided taking account of the existing consent															

MCoA	Condition	Verification	Compliance	Comments
	EP&A Act.	Notice of Modification (DA 168/99) 28 Oct 2009		requirements where relevant.
2/10	Prior to the surrender of these consents, the conditions of this approval shall prevail to the extent of any inconsistency with the conditions of these consents.			
	STRUCTURAL ADEQUACY			
2/11	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.	Duralie Construction Certificate No. 211/11– Bath-house and Sanitary Facilities, Dix Gardner 25 Jul 2011 Duralie Occupation Certificate No. 244/11 – Bath-house and Sanitary Facilities, Dix Gardner 20 Jul 2011 Fire Safety Certificate – Bath-house and Sanitary Facilities, Great Lakes Council Jul 2011	C	The only new construction of buildings on the Durlaie Mine site has been the bath house and sanitary facilities for the Leighton Contractor area.
	DEMOLITION			
2/12	The Proponent shall ensure that all demolition work is carried out in accordance with Australian Standard AS 2601-2001: The Demolition of Structures, or its latest version.		Noted	No demolition work carried out during the 2008-2011 period.
	OPERATION OF PLANT AND EQUIPMENT			
2/13	The Proponent shall ensure that all the plant and equipment used on site, or to transport coal from the site, is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.		Noted	The mining activities are conducted at the Duralie Mine site by Leighton Contractors and all equipment and plant is managed and maintained to operate in an efficient manner, in the onsite workshops.
	STAGED SUBMISSION OF ANY STRATEGY, PLAN OR PROGRAM			
2/14	With the approval of the D-G, the Proponent may submit any strategy, plan or program required by this approval on a progressive basis. <i>Note: While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the operations on site are covered by suitable strategies, plans or programs at all times.</i>		Noted	
2/15	Until they are replaced by an equivalent strategy, plan or program approved under this approval, the Proponent shall continue to implement the existing strategies, plans or programs that apply to any development on site.	Environmental Management Strategy 2011 Waste Management Plan 2011	In progress	Documents submitted and approved by DP&I in 2011 in accordance with Project Approval Duralie Extension Project, 26 November 2010, were: <ul style="list-style-type: none"> • Duralie Environmental Management Strategy; and • Duralie Waste Management Plan; • Other documentation required under the Project Approval is commented on under the specific conditions.

MCoA	Condition	Verification	Compliance	Comments						
	CONTRIBUTIONS TO COUNCIL									
2/16	<p>From the end of December 2010 until the completion of mining operations on site, the Proponent shall pay GLC the following contributions each year:</p> <p>(a) \$59,688.09 for the maintenance of The Bucketts Way;</p> <p>(b) \$11,022.58 for a structural inspection of the bridges on The Bucketts Way (between its intersection with Clarence Town Road and the mine access road);</p> <p>(c) \$120,000 for the Karuah Catchment Management Program; and</p> <p>(d) \$100,000 for the provision of community infrastructure.</p> <p>These contributions must be indexed according to the CPI at the time of each payment.</p> <p>If no mining operations occur on site in a calendar year, then the Proponent is not required to pay these contributions.</p>	Duralie Transaction Inquiry Report – Great Lakes Council, 1 Jul 2010 to 30 Jun 2011	C	<p>Provision of contribution to Great Lakes Council, that occurred during 2011 were:</p> <p>(a) \$59,688.09 for the maintenance of The Bucketts Way;</p> <p>(b) \$11,022.58 for structural inspection of bridges on The Bucketts Way;</p> <p>(c) \$120,000 to the Karuah Catchment Management Program; and</p> <p>(d) \$100,000 for the provision of community infrastructure.</p> <p>The quarterly payments had been indexed according to the CPI at the time for each payment.</p>						
2/17	<p>From the end of December 2010 until the completion of mining operations on site, the Proponent shall pay GSC the following contributions each year:</p> <p>(a) \$15,000 for specified community works that have been agreed to between GSC and the Proponent;</p> <p>(b) \$15,000 for the GSC Community Education Fund for an annual trade apprenticeship, traineeship, scholarship or equivalent; and</p> <p>(c) \$10,000 for the provision of community infrastructure.</p> <p>These contributions must be indexed according to the CPI at the time of each payment. If no mining operations occur on site in a calendar year, then the Proponent is not required to pay these contributions.</p>	Duralie Transaction Inquiry Report – Gloucester Shire Council, 1 Jul 2010 to 30 Jun 2011	C	<p>Payments made to Gloucester Shire Council (GSC) during 2011 were:</p> <p>(a) \$15,000 for specified community works agreed to between GSC and DCPL;</p> <p>(b) \$15,000 for the GSC Community Education Fund; and</p> <p>(c) \$10,000 for the provision of community infrastructure.</p> <p>The payments made quarterly had been indexed according to the CPI at the time for each payment</p>						
	SCHEDULE 3 ENVIRONMENTAL PERFORMANCE CONDITIONS									
	ACQUISITION UPON REQUEST									
3/1	<p>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 5 - 6 of Schedule 4.</p> <p>Table 1: Land subject to acquisition upon request</p> <table><tr><td>104 - Mudford</td><td>118 - Moylan</td></tr><tr><td>117 - Holmes</td><td>122 - White</td></tr><tr><td>125 (1) - Zulumovski</td><td>128 – Hare Scott</td></tr></table>	104 - Mudford	118 - Moylan	117 - Holmes	122 - White	125 (1) - Zulumovski	128 – Hare Scott		Not triggered	<p>A number of the properties have been acquired by Duralie Coal following consultation and negotiation, but no written requests for acquisition had been received by Duralie Coal during the period 2008 to 2011.</p>
104 - Mudford	118 - Moylan									
117 - Holmes	122 - White									
125 (1) - Zulumovski	128 – Hare Scott									

MCoA	Condition				Verification	Compliance	Comments																																																																											
	125 (2) - Zulumovski		131 (2) - Relton																																																																															
	Note: To identify the locations referred to in Table 1, see the figure in Appendix 3.																																																																																	
	NOISE																																																																																	
	Noise Criteria																																																																																	
3/2	<p>Except for the land referred to in Table 1, the Proponent shall ensure that the noise generated by the project does not exceed the criteria in Table 2 at any residence on privately-owned land or on more than 25% of any privately-owned land.</p> <p>Table 2: Noise criteria dB(A)</p> <table><tr><th>Location</th><th>Day</th><th>Evening</th><th colspan="2">Night</th></tr><tr><td></td><th colspan="2">L_{Aeq}(15 minute)</th><th colspan="2">L_{A1}(1 minute)</th></tr><tr><td>172 Lyall</td><td>35</td><td>39</td><td>40</td><td>45</td></tr><tr><td>126 Hamann Pixalu PL</td><td>35</td><td>35</td><td>39</td><td>45</td></tr><tr><td>123 Oleksluk & Camody</td><td>35</td><td>35</td><td>39</td><td>45</td></tr><tr><td>173 Trigg & Holland</td><td>35</td><td>36</td><td>37</td><td>45</td></tr><tr><td>116 Weismantel</td><td>35</td><td>36</td><td>37</td><td>45</td></tr><tr><td>127 Fisher-Webster</td><td>35</td><td>35</td><td>37</td><td>45</td></tr><tr><td>131(1) Relton</td><td>35</td><td>35</td><td>37</td><td>45</td></tr><tr><td>180(1) Thompson</td><td>35</td><td>36</td><td>36</td><td>45</td></tr><tr><td>95 Smith and Ransley</td><td>35</td><td>35</td><td>36</td><td>45</td></tr><tr><td>144 Wlelgosinski</td><td>35</td><td>35</td><td>35</td><td>45</td></tr><tr><td>169 Williams</td><td>35</td><td>36</td><td>35</td><td>45</td></tr><tr><td>177 Thompson</td><td>35</td><td>35</td><td>35</td><td>45</td></tr><tr><td>Other ptely owned land</td><td>35</td><td>35</td><td>35</td><td>45</td></tr></table> <p>Notes:</p> <p>To identify the locations referred to in Table 2, see the figure in Appendix 3; and</p> <p>Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy.</p> <p>However, these criteria do not apply if the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the</p>				Location	Day	Evening	Night			L _{Aeq} (15 minute)		L _{A1} (1 minute)		172 Lyall	35	39	40	45	126 Hamann Pixalu PL	35	35	39	45	123 Oleksluk & Camody	35	35	39	45	173 Trigg & Holland	35	36	37	45	116 Weismantel	35	36	37	45	127 Fisher-Webster	35	35	37	45	131(1) Relton	35	35	37	45	180(1) Thompson	35	36	36	45	95 Smith and Ransley	35	35	36	45	144 Wlelgosinski	35	35	35	45	169 Williams	35	36	35	45	177 Thompson	35	35	35	45	Other ptely owned land	35	35	35	45	<p>Compliance Noise Survey and Assessment – Duralie Coal Mine (Vipac): October 2007, January 2008, April 2008, July 2008</p> <p>Duralie Annual Environmental Management Report 2008 (Noise Section) 4 Sep 2008</p> <p>Compliance Noise Survey and Assessment – Duralie Coal Mine (Vipac): October 2008, Jan 2009, Apr 2009, Jul 2009</p> <p>Duralie Annual Environmental Management Report 2009 (Noise Section) 4 Sep 2009</p> <p>Compliance Noise Survey and Assessment – Duralie Coal Mine (Vipac): Oct 2009, Jan 2010, Apr 2010 and Jul 2010</p> <p>Duralie Annual Environmental Management Report 2010 (Noise Section)4 Sep 2009</p> <p>Compliance Noise Survey and Assessment – Duralie Coal Mine (Vipac): Oct 2010, Feb 2011, Apr 2011</p>	C	<p>The scheduled properties referenced in this Condition have been updated to reflect the amended boundaries of the Duralie Coal Mine operations. The noise survey report of February 2011 (the first quarterly report after the new Conditions) references the scheduled properties from the previous consent (1999 and Modified 2006 and 2008). The Noise Survey Report of April 2011 correctly references the Project Approval updated list of properties.</p> <p>Monitoring locations in the Noise Survey Reports, in most instances, are not at the locations scheduled in MCoA 3/ 2, rather assessment at other nominated locations is used to determine (or infer)compliance at the scheduled locations.</p>
Location	Day	Evening	Night																																																																															
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MCoA	Condition	Verification	Compliance	Comments								
	Department in writing of the terms of this agreement.											
	Noise Acquisition Criteria											
3/3	<p>If the noise generated by the project exceeds the criteria in Table 3 at any residence on privately-owned land or on more than 25% of any privately-owned land, then upon receiving a written request for acquisition from the landowner, the Proponent shall acquire the land in accordance with the procedures in Conditions 5 - 6 of Schedule 4.</p> <p>Table 3: Noise acquisition criteria dB(A) LAeq (15min)</p> <table><tr><th>Location</th><th>Day</th><th>Evening</th><th>Night</th></tr><tr><td>All privately owned land</td><td>40</td><td>40</td><td>40</td></tr></table> <p>Notes:</p> <p>Noise generated by the project is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy; and</p> <p>For this condition to apply, the exceedences of the criteria must be systemic.</p>	Location	Day	Evening	Night	All privately owned land	40	40	40		Not triggered	<p>No written requests for acquisition have been received by Duralie Coal during the period 2008 to 2011.</p> <p>There are no reported instances of mine-related noise events that have activated this Condition. All mine related noise events of 40 dB LAeq or greater that have been reported are due to noise-enhancing significant temperature inversions that are excluded from assessment according to Consent Condition 2 table notes.</p>
Location	Day	Evening	Night									
All privately owned land	40	40	40									
	Additional Noise Mitigation Measures											
3/4	<p>Upon receiving a written request from the owner of any residence:</p> <p>(a) on the land listed in Table 1;</p> <p>(b) on the land listed as 123, 126, and 172 on the figure in Appendix 3; or</p> <p>(c) on privately-owned land where subsequent noise monitoring shows that the noise generated by the project is greater than or equal to LAeq(15 minute) 38 dB(A),</p> <p>the Proponent shall implement additional noise mitigation measures (such as double glazing, insulation, and/or air conditioning) at the residence in consultation with the owner. These measures must be reasonable and feasible.</p> <p>If within 3 months of receiving this request from the owner, the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.</p>	Noise Management Plan , May 2011	C As required	<p>Section 6.2.2 of the Noise Management Plan addresses additional noise mitigation measures to be implemented in relation to the mine operations to reduce noise emissions from the equipment/vehicles/plant, progressively over time. Section 6.3 states that Duralie Coal “will implement reasonable and feasible mitigation measures at noise affected receivers, in consultation with the owners”.</p> <p>Holmes (2) property owners submitted a written request for additional noise mitigation measures to be provided for their residence. Vipac assessed the request and provided comments that were accepted by Duralie Coal and Holmes and noise mitigation measures were agreed during 2011.</p>								
	Rail Noise											
3/5	By the end of December 2011, or as otherwise agreed by the D-		In progress	The provision of locomotives for the transport of coal from								

MCoA	Condition	Verification	Compliance	Comments																																																	
	effectiveness of any attenuation.			audit. (b) Noise Management Measures are addressed in section 6 of the 2011 draft plan. (c) Section 7 Noise Monitoring Program addresses proposed attended noise monitoring, real-time noise monitoring and sound power level monitoring programs.																																																	
	BLASTING - Blasting Criteria																																																				
3/8	<p>The Proponent shall ensure that the blasting on the site does not cause exceedances of the criteria in Table 4.</p> <p><i>Table 4: Blasting criteria</i></p> <table><tr><th>Location</th><th>Airblast overpressure (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 total number of blasts over a 12 mth period</td></tr><tr><td>120</td><td>10</td><td>0%</td></tr><tr><td>Mammy Johnson's Grave</td><td>-</td><td>5</td><td>0%</td></tr><tr><td>Former Weismantel's Inn</td><td>-</td><td>10</td><td>0%</td></tr></table> <p>However, these criteria do not apply if the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.</p>	Location	Airblast overpressure (dB (Lin Peak))	Ground vibration (mm/s)	Allowable exceedance	Residence on privately owned land	115	5	5% of the total number of blasts over a 12 mth period	120	10	0%	Mammy Johnson's Grave	-	5	0%	Former Weismantel's Inn	-	10	0%		C	<p>Airblast Overpressure</p> <p>The Shultz, Bailey, Hattam and Holmes properties have been purchased by Duralie Coal.</p> <p>Relocation of the blast monitors to privately owned properties to address this condition has been submitted to OEH for a Variation of the EPL condition M9.1 nominated sites.</p> <table><tr><th>Date</th><th colspan="2">Airblast Overpressure</th><th colspan="2">Vibration</th></tr><tr><td></td><td>>115dB</td><td>>120dB</td><td>>5mm/s</td><td>>10mm/s</td></tr><tr><td>2010-11</td><td>7 (Hattam)</td><td>0</td><td>3 (Hattam)</td><td>0</td></tr><tr><td>2009-10</td><td>8 (93 Blasts)</td><td>2 (Holmes 131.8 and Hattam 120.3dbL)</td><td>1 (Hattam 5.9mm/s)</td><td>0</td></tr><tr><td>2008-09</td><td>1 (2-ex-Holmes and 1 Doherty)</td><td>2(Holmes 122.4 and 121.1dBL)</td><td>0</td><td>0</td></tr><tr><td>2007-08</td><td>0</td><td>1 (Holmes 120.9dBL)</td><td>0</td><td>0</td></tr></table> <p>NB: The exceedances of the 120dB occurred at privately owned properties. Hattam and Holmes properties are owned by Duralie Coal.</p> <p>Vibration monitoring has been conducted at Weismantels Inn and demonstrated that all levels have been < 5mm/s.</p> <p>Mammy Johnsons Grave is located south of the current mining operational area (that is in the north of Duralie lease area) and monitoring of this site has not yet been undertaken.</p>	Date	Airblast Overpressure		Vibration			>115dB	>120dB	>5mm/s	>10mm/s	2010-11	7 (Hattam)	0	3 (Hattam)	0	2009-10	8 (93 Blasts)	2 (Holmes 131.8 and Hattam 120.3dbL)	1 (Hattam 5.9mm/s)	0	2008-09	1 (2-ex-Holmes and 1 Doherty)	2(Holmes 122.4 and 121.1dBL)	0	0	2007-08	0	1 (Holmes 120.9dBL)	0	0
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	Blasting Hours																																																				
3/9	<p>The Proponent shall only carry out blasting on site between 9am and 5pm Monday to Saturday inclusive.</p> <p>No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Director-General.</p>		C	<p>Blasting only occurs on site between 9am and 5pm Monday to Saturday.</p>																																																	
	Blasting Frequency																																																				

MCoA	Condition	Verification	Compliance	Comments
3/10	The Proponent shall not carry out more than: (a) 1 blast a day on site, unless an additional blast is required following a blast misfire; and (b) 3 blasts a week on site, averaged over any 12 month period.		C	Only a single blast is carried out on any day and there have been no more than 3 blasts per week between 2007 and 2011.
	Property Inspections			
3/11	If the Proponent receives a written request for the owner of any privately-owned land within 2 kilometres of the approved open cut mining pit on site for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection report updated, then within 2 months of receiving this request the Proponent shall: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the D-G, to: • establish the baseline condition of the buildings and/or structures on the land, or update the previous property inspection report; • identify any measures that should be implemented to minimise the potential blasting impacts of the project on these buildings and/or structures; and (b) give the landowner a copy of the new or updated property inspection report.		Not triggered	No requests have been received from owners of privately owned properties.
	Property Investigations			
3/12	If the owner of any privately-owned land claims that the buildings and/or structures on his/her land have been damaged as a result of blasting on site, then within 2 months of receiving this claim the Proponent shall: (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 damages 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.		Not triggered	

MCoA	Condition	Verification	Compliance	Comments
	Operating Conditions			
3/13	<p>The Proponent shall:</p> <ul style="list-style-type: none"> (a) implement best blasting practice on site to: <ul style="list-style-type: none"> • protect the safety of people and livestock in the surrounding area; • protect public or private property in the surrounding area; and • minimise the dust and fume emissions from blasting on site; and (b) operate a suitable system to enable the public to get up-to-date information on the proposed blasting schedule on site, <p>to the satisfaction of the Director-General.</p>	<p>Blast/Vibration Management Plan, May 2011</p> <p>Blast Monitoring Program, Version C 12 Apr 2007</p>	C	<p>(a) The Blast Monitoring Program addressed each of the condition requirements:</p> <ul style="list-style-type: none"> • Section 3.14 Protection of Persons during Blasting • Section 3.2 Blast Management Mitigation Measures <p>(b) Section 3.12 Blast Notification</p>
3/14	<p>The Proponent shall not carry out any blasting within 500 metres of:</p> <ul style="list-style-type: none"> (a) a public road without the approval of Council; and (b) the North Coast Railway without the approval of ARTC. 	<p>Blast/Vibration Management Plan, May 2011</p> <p>Blast Monitoring Program, Version C 12 Apr 2007</p>	C	<p>No blasts have been conducted within 500m of a public road or the North Coast Railway:</p> <ul style="list-style-type: none"> (a) section Blast Management - Blasting within 500m of Cheerup Road (b) section 3.6 Blast Management – Blasting within 500m of the North Coast Railway Line
3/15	<p>The Proponent shall not carry out blasting within 500 metres of any privately-owned land or land not owned by the Proponent unless:</p> <ul style="list-style-type: none"> (a) the Proponent has a written agreement with the relevant landowner to allow blasting to be carried out closer to the land, and the Proponent has advised the Department in writing of the terms of this agreement; or (b) the Proponent has: <ul style="list-style-type: none"> • demonstrated to the satisfaction of the D-G that the blasting can be carried out without compromising the safety of the people or livestock on the land, or damaging the buildings and/or structures on the land; and • updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the land 		C	<p>Blasting at the Duralie Mine site has not been conducted within 500 metres of privately owned land,</p>
	Blast Management Plan			
3/16	<p>The Proponent shall prepare and implement a Blast Management Plan for the project to the satisfaction of the D-G. This plan must:</p> <ul style="list-style-type: none"> (a) be prepared in consultation with DECCW, and 	<p>Blast Monitoring Program, Version C, 12 Apr 2007</p>	C	<p><i>Blast Monitoring Program, Version C, 2007:</i></p> <p>(a) Blast Monitoring Program, Version C was submitted to the DEC for consultation on 9 and 27 March 2007, and DoP for review and approval on 27 March 2007;</p>

MCoA	Condition	Verification	Compliance	Comments						
	<p>submitted to the D-G for approval by the end of May 2011;</p> <p>(b) describe the blast mitigation measures that would be implemented to ensure compliance with the relevant conditions of this approval;</p> <p>(c) describe the measures that would be implemented to ensure the public can get up-to-date information on the proposed blasting schedule on site or any road closures; and</p> <p>(d) include a blast monitoring program to evaluate the performance of the project.</p>	<p>Blast Management Plan, March 2011</p> <p>Letter to DP&I re Blast Management Plan, 30 March 2011</p>	<p>Not yet approved</p>	<p>(b) section 3.1 Compliance Standards and section 3.2 Mitigation Measures;</p> <p>(c) section 3.12 Blast Notification ;</p> <p>(d) Blast Monitoring Program Version C 12 April 2007.</p> <p>Blast Management Plan, March 2011:</p> <p>(a) The draft Blast Management Plan was submitted to DP&I on 30 March 2011. No response had been received by Duralie Coal at the date of this audit.</p> <p>(b) Section 3.1 Compliance Standards and section 3.2 Mitigation Measures</p> <p>(c) Section 3.8 Blast Notification</p> <p>(d) Sections 3.4 and 3.5 Blast Management - Monitoring</p>						
	AIR QUALITY & GREENHOUSE GAS Odour									
3/17	The Proponent shall ensure that no offensive odours are emitted from the site, as defined under the POEO Act.		C	No odorous emissions occur from the Duralie Coal Mine operations.						
	Greenhouse Gas Emissions									
3/18	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 D-G.		C Ongoing	<p>An Electrical Energy Savings Action Plan (EESAP) was produced for Duralie in 2006 to benchmark the previous one (or two) years production (feed tonnes) and energy / demand consumption and greenhouse gas allocation. In 2009 installation of 200 kilo volt amp reactive (kVAr) reduced the maximum demand at the Duralie Mine by 83kVA (10%).</p> <p>Timer operated plant lighting (ROM coal handling is limited at night) has been installed. Night lighting is restricted to areas where lighting is necessary to ensure safety and security such as the car park, train loading bin and electrical control areas.</p> <p>The new bath house facility built in 2010 has energy efficient heat pump hot water systems.</p>						
	Air Quality Assessment Criteria									
3/19	<p>The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that particulate matter emissions generated by the project do not exceed the criteria listed in Tables 5, 6 or 7 at any residence on privately-owned or on more than 25% privately-owned land.</p> <p><i>Table 5: Long term criteria for particulate matter</i></p> <table><tr><th>Pollutant</th><th>Averaging</th><th>Criterion</th></tr><tr><td></td><td></td><td></td></tr></table>	Pollutant	Averaging	Criterion				<p>Appendix II Environmental Monitoring Data:</p> <p>2007-2008 AEMR</p> <p>2008-2009 AEMR</p> <p>2009-2010 AEMR</p> <p>2010-2011 AEMR</p>	C	
Pollutant	Averaging	Criterion								

MCoA	Condition			Verification	Compliance	Comments	
		Period				The HVAS PM ₁₀ and TSP monitoring results demonstrated compliance with the air quality criteria at all sites during the 2008-2011 period.	
	Total Suspended Particulate (TSP) matter	Annual	90 µg/m ³				
	Particulate Matter <10µm (PM ₁₀)	Annual	30 µg/m ³				
	Table 6: Short term criterion for particulate matter						
	Pollutant	Averaging Period	Criterion				
	Particulate Matter <10µm (PM ₁₀)	24 hour	50 µg/m ³				
	Table 7: Long term criteria for deposited dust						
	Pollutant	Averaging Period	Max increase in DD level				Max total DD level
	Deposited Dust	Annual	2g/m ² /mth				4g/m ² /mth
	Notes to Tables 5-7:						
<ul style="list-style-type: none">• Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations due to all other sources);• Incremental impact (i.e. incremental increase in concentrations due to the project on its own);• Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.• 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.							
Air Quality Acquisition Criteria							
3/20	If particulate matter emissions generated by the project exceed the criteria in Tables 8, 9 or 10 at any residence on privately-owned land or on more than 25% of any privately-owned land, then upon receiving a written request for acquisition from the landowner the Proponent shall acquire the land in accordance with the procedures in Conditions 5-6 of Schedule 4.			Not triggered	No requests for acquisition were received by Duralie in relation to particulate matter emissions during the 2008 to 2011 period.		
Table 8: Long term acquisition criteria for particulate matter.							
Pollutant	Averaging	^d Criterion					

MCoA	Condition	Verification	Compliance	Comments																										
	<table><tr><td></td><td>Period</td><td></td></tr><tr><td>Total Suspended Particulate (TSP) matter</td><td>Annual</td><td>^a90 µg/m³</td></tr><tr><td>Particulate Matter <10µm (PM₁₀)</td><td>Annual</td><td>^a30 µg/m³</td></tr></table> <p>Table 9: Short term acquisition criterion for particulate matter</p> <table><tr><td>Pollutant</td><td>Averaging Period</td><td>Criterion</td></tr><tr><td>Particulate Matter <10µm (PM₁₀)</td><td>24 hour</td><td>^a150 µg/m³</td></tr><tr><td>Particulate Matter <10µm (PM₁₀)</td><td>24 hour</td><td>^b50 µg/m³</td></tr></table> <p>Table 10: Long term criteria for deposited dust</p> <table><tr><td>Pollutant</td><td>Averaging Period</td><td>Max increase in DD level</td><td>Max total DD level</td></tr><tr><td>Deposited Dust</td><td>Annual</td><td>^b2g/m²/mth</td><td>^a4g/m²/mth</td></tr></table> <p>Notes to Tables 8-10:</p> <p><i>a Total impact (i.e. incremental increase in concentrations due to the project plus background concentrations due to all other sources);</i></p> <p><i>b Incremental impact (i.e. incremental increase in concentrations due to the project on its own);</i></p> <p><i>c Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.</i></p> <p><i>d Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Director-General in consultation with DECCW.</i></p>		Period		Total Suspended Particulate (TSP) matter	Annual	^a 90 µg/m ³	Particulate Matter <10µm (PM ₁₀)	Annual	^a 30 µg/m ³	Pollutant	Averaging Period	Criterion	Particulate Matter <10µm (PM ₁₀)	24 hour	^a 150 µg/m ³	Particulate Matter <10µm (PM ₁₀)	24 hour	^b 50 µg/m ³	Pollutant	Averaging Period	Max increase in DD level	Max total DD level	Deposited Dust	Annual	^b 2g/m ² /mth	^a 4g/m ² /mth			
	Period																													
Total Suspended Particulate (TSP) matter	Annual	^a 90 µg/m ³																												
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Pollutant	Averaging Period	Max increase in DD level	Max total DD level																											
Deposited Dust	Annual	^b 2g/m ² /mth	^a 4g/m ² /mth																											
	Additional Dust Mitigation Measures																													
3/21	Upon receiving a written request from the owner of any residence: <div><div>(a) on the land listed as 125(1) and 125(2) in the figure in Appendix 3; or</div><div>(b) on privately-owned land where subsequent air quality monitoring shows that the dust generated by the</div></div>		Not triggered	No requests for acquisition were received by Duralie in relation to particulate matter emissions during the 2008 to 2011 period.																										

MCoA	Condition	Verification	Compliance	Comments
	<ul style="list-style-type: none"> evaluate the performance of the project; and includes a protocol for determining exceedances with the relevant conditions of this approval. 		approved	<p>(a) An Air Quality and Greenhouse Gas Management Plan was prepared in April 2011 and submitted to the OEH for consultation and DP&I for review and approval, in May 2011. No response had been received from OEH or DP&I at the date of this audit.</p> <p>(b) section 6 Management Measures address MCoA 3/23(b).</p> <p>(c) section 7.1 Dust Deposition, section 7.2 HVAS and section 7.3 Real-time Monitoring address the requirements of this condition.</p>
	METEOROLOGICAL MONITORING			
3/24	<p>During the life of the project, the Proponent shall ensure that there is a suitable meteorological station operating in the vicinity of the site that:</p> <ul style="list-style-type: none"> (a) complies with the requirements in Approved Methods for Sampling of Air Pollutants in New South Wales guideline; and (b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the NSW Industrial Noise Policy. 	<p>Air Quality Monitoring Program, section 4.1, 11 May 2007</p> <p>Draft Air Quality and Greenhouse Gas Management Plan, April 2011</p>	C	<p>Wind speed and direction, rainfall, evaporation and temperature. are monitored at the automated meteorological monitoring station on the Duralie site</p> <p>Wind speed and wind direction data is used in conjunction with all dust monitoring data, to minimise the potential for dust and noise emissions.</p>
	SOIL AND WATER			
	Water Discharges			
3/25	The Proponent shall ensure that all surface water discharges from the site comply with the discharge limits (both volume and quality) set for the project in any EPL.	Environment Protection Licence No. 11701	Noted	
	Base flow Offsets			
3/26	<p>The Proponent shall offset the loss of any base flow to the surrounding watercourses and/or associated creeks caused by the project to the satisfaction of the Director-General.</p> <p><i>Notes:</i></p> <p><i>This condition does not apply in the case of losses of base flow which are negligible; and</i></p> <p><i>Offsets should be provided via the retirement of adequate water entitlements to account for the loss attributable to the project.</i></p>		Not triggered	Monitoring of surrounding water courses and streams, and groundwater have not indicated loss of base flow, to the date of this audit.
	Compensatory Water Supply			
3/27	The Proponent shall provide compensatory water supply to any landowner of privately-owned land whose water licence entitlements are impacted (other than an impact that is negligible) as a result of the project, in consultation with NOW, and to the satisfaction of the Director-General.		Not triggered	

MCoA	Condition	Verification	Compliance	Comments
	<p>The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributed to the project. Equivalent water supply must be provided (at least on an interim basis) within 24 hours of the loss being identified.</p> <p>If the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.</p> <p>If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alternative compensation to the satisfaction of the Director-General.</p>			
	Irrigation			
3/28	The Applicant shall only carry out irrigation in the irrigation area.	<p>Irrigation Management Plan, 15 Dec 2008</p> <p>Surface Water Management Plan July 2011</p>	C	<p>Irrigation of mine water occurs in areas the Duralie site with fixed irrigation sprays and soil moisture and electric conductivity monitoring probes. Travelling spray irrigators have also been used where practicable.</p> <p>Section 8 of the Surface Water Management Plan July 2011 provides the irrigation program for the Duralie Mine area.</p>
	Water Management Plan			
3/29	<p>The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in consultation with DECCW and NOW by suitably qualified and experienced persons whose appointment has been approved by the Director-General, and submitted to the Director-General by the end of May 2011.</p> <p>In addition to the standard requirements for management plans (see Condition 2 of Schedule 5), this plan must include:</p>	<p>Site Water Management Plan, Version F, 22 Dec 2008</p> <p>Letter from DP&I re Approval of Suitably Qualified Consultants, 18 Feb 2011</p> <p>Water Management Plan, dated Jul 2011</p> <p>Letter from DP&I re Approval of Water Management Plan, 7 Apr 2011</p>	Not yet approved	<p>A Site Water Management Plan was developed in consultation with the Department of Natural Resources on 6 November 2006 and 26 June 2007, and DEC on 6 November 2006. The Site Water Management Plan Version D was submitted to the relevant authorities and DoP on 15 May 2008 and Version F was submitted to the DoP on 22 December 2008.</p> <p>Mr Lindsay Gilbert (Gilbert & Associates Pty Limited) and Dr Noel Merrick (Heritage Computing) were approved as suitably qualified and experienced persons for the preparation of the Water Management Plan on 18 February 2011.</p> <p>A Water Management Plan was prepared and submitted to OEH for consultation and submitted to the DP&I in July 2011.</p>
3/30	<p>(a) a Site Water Balance that includes details of:</p> <ul style="list-style-type: none"> • sources of water supply; • water use on site; • water management on site; and • reporting procedures; and 	<p>Site Water Management Plan, Version F, 22 Dec 2008</p> <p>Site Water Management Plan, Version F, Appendix C Site Water Balance review, 22 Dec 2008</p> <p>Water Management Plan – Site</p>	C Not yet approved	<p>The Site Water Balance was prepared to address the requirements of this condition and submitted to DP&I in July 2011 as part of the Water Management Plan.</p> <p>(a) Site Water Balance Appendix 1:</p> <ul style="list-style-type: none"> • Section 5 Sources of Water • Section 6 Water Use on Site

MCoA	Condition	Verification	Compliance	Comments
	<ul style="list-style-type: none"> describes what measures would be implemented to minimise potable water use on site. 	Water Balance, July 2011		<ul style="list-style-type: none"> Section 8 Water Management on Site Section 9 and 10 Annual Review and SWB and Reporting Systems There is no potable water supply available to the site. Potable water is obtained from a contractor who transports the water by road tanker as required from Mid-Coast Water supply at Stroud.
3/30	<p>(b) a Surface Water Management Plan, that includes:</p> <ul style="list-style-type: none"> a detailed description of the water management system on site, including the: <ul style="list-style-type: none"> - clean water diversion systems; - erosion and sediment controls; - water storages; and - irrigation system; a plan for identifying, extracting, handling, and the long-term storage of potentially acid forming material on site; detailed plans, including design objectives and performance criteria, for: <ul style="list-style-type: none"> - the reconstruction of Coal Shaft Creek; - design and management of the final voids; - reinstatement of drainage lines on the rehabilitated areas of the site; and - control of any potential water pollution from the rehabilitated areas of the site; performance criteria for the following, including trigger levels for investigating any potentially adverse impacts: <ul style="list-style-type: none"> - the water management system; - surface water quality of the Unnamed Tributary, Coal Shaft Creek and Mammy Johnsons River; - the stream and vegetation health of the Unnamed Tributary, Coal Shaft Creek and Mammy Johnsons River; and - channel stability of the re-constructed Coal Shaft Creek; a program to monitor: <ul style="list-style-type: none"> - the effectiveness of the water management system; - surface water flows and quality in the Unnamed Tributary, Coal Shaft Creek and Mammy Johnsons River; - the stream and riparian vegetation health of the unnamed Tributary, Coal Shaft Creek and Mammy Johnsons River; 	<p>Site Water Management Plan, Version F, 22 Dec 2008</p> <p>Erosion and Sediment Control Plan, May 2002</p> <p>Irrigation Management Plan, 15 Dec 2008</p> <p>Potentially Acid Forming Material Management Plan, Sep 2003</p>	<p>C</p> <p>C Not yet approved</p>	<p>(b) Surface Water Management Plan:</p> <ul style="list-style-type: none"> Site Water Management Plan Version F 2008: <ul style="list-style-type: none"> - Section 4.3 Water Use on Site - Section 4.4. Water Management on Site - Section 5 Erosion and Sediment Control and Erosion and Sediment Control Plan May 2002 - ? water storages - Irrigation Management Plan 15 December 2008 Surface Water Management Plan July 2011: <ul style="list-style-type: none"> - Section 7.3 Development of Coal Shaft Creek Reconstruction - Section 7.5 Management of Final Void Water - Section 7.4 Management of Rehabilitation Area Runoff Section 9 Assessment of Performance Indicators and Measures Section 5 Water Management System Section 8.2 Water Management System Monitoring Section 8.6 Stream and Riparian Vegetation Health Monitoring Program Section 8.2 Water Management System Monitoring Section 10 Contingency Plan

MCoA	Condition	Verification	Compliance	Comments
	and - channel stability of the reconstructed Coal Shaft Creek; • a plan to respond to any exceedances of the performance criteria, and mitigate and/or offset any adverse surface water impacts of the project; and			
3/30	(c) a Groundwater Management Plan, which includes: • groundwater assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts; • a program to monitor : - groundwater inflows to the open cut mining operations; - the impacts of the project on: o the alluvial aquifers; o base flows to Mammy Johnsons River; o any groundwater bores on privately-owned land; and - the seepage/leachate from water storages or backfilled voids on site; and • a program to validate the groundwater model for the project, and calibrate it to site specific conditions; and • a plan to respond to any exceedances of the performance criteria, and offset the loss of any base flow to Mammy Johnsons River caused by the project.	Site Water Management Plan, Version F 22 Dec 2008 Water Management Plan, July 2011 Groundwater Management Plan, July 2011	C Not yet approved	(c) Groundwater Management Plan prepared and submitted to DP&I in July 2011; • Section 7 Assessment of Performance Indicators • Section 6 Monitoring Program - Section 6.1 Groundwater Inflows - Section 6.2 Alluvial Aquifers - Section 6.3 Connectivity and Base-flows to Mammy Johnsons River - Section 6.4 Landholder Bores - Section 6.5 Water Storages and Groundwater Seepage • Section 5.2 Groundwater Model Verification • Section 8 Surface and Groundwater Response Plan • The Groundwater Management Plan, Appendix 3 sections 7 and 8 of the Water Management Plan, July 2011 provides response plans to offset any loss to base flows to Mammy Johnsons River and provide compensatory water supply to any land owner or privately owned land whose water licence entitlements are impacted as a result of the Duralie Extension Project.
	BIODIVERSITY			
	Giant Barred Frog			
3/31	The Proponent shall ensure that the project has no more than a negligible impact on the local Giant Barred Frog population. By the end of May 2011, the Proponent shall prepare a Giant Barred Frog Study, in consultation with DECCW, and to the satisfaction of the Director General. This study must: (a) investigate the extent of the Giant Barred Frog population in the Mammy Johnson River Catchment; (b) assess the condition of the Giant Barred Frog habitat where it is recorded within the Catchment, including the presence of any Chytrid fungus; (c) analyse the age structure of the frog population and	Giant Barred Frog Study - Giant Barred Frog Monitoring Program, 28 July 2010 Giant Barred Frog Management Plan May 2011	C	DCPL proposed a monitoring program be implemented for the Giant Barred Frog. The Program was designed in consultation with Dr Arthur White and Professor David Goldney to verify the impact assessment for the Giant Barred Frog. The monitoring program would specifically seek to determine the distribution, relative abundance, breeding success and local status of the Giant Barred Frog in the Mammy Johnsons River, above and below the confluence of Coal Shaft Creek. (a) Section 4.1 Extent of Giant Barred Frog Population (b) Section 5.2 Baseline Data Condition of the GBF

MCoA	Condition	Verification	Compliance	Comments
	the health of tadpoles; and (d) document the relevant hydrological conditions both prior to and during the study, including rainfall, water flows and quality in Mammy Johnsons River, both upstream and downstream of the confluence of Mammy Johnsons River and Coal Shaft Creek, and in Coal Shaft Creek			Habitat (c) Section 4.5 Analysis of Health of GBF Tadpoles (d) Section 5.4 Hydrological Conditions
3/32	The Proponent shall prepare and implement a Giant Barred Frog Management Plan to the satisfaction of the D-G. This plan must: (a) be prepared in consultation with DECCW by a suitably qualified and experienced person, whose appointment has been endorsed by the Director-General; (b) be submitted to the Director-General for approval by the end of May 2011; (c) include a summary of the Giant Barred Frog Study; (d) establish performance measures for evaluating the impact of the project on the local Giant Barred Frog population; (e) describe the measures that would be implemented to minimise the potential spread of Chytrid fungus, including training of staff in site hygiene management in accordance with the NPWS Hygiene Protocol for the Control of Disease in Frogs 2001; (f) include a program to monitor the potential impact of the project on the local frog population, which includes: <ul style="list-style-type: none"> detailed performance indicators for the project, with reference to the performance measures established in (d) above; annual monitoring of the frog population and its habitat during the breeding season along Mammy Johnson River both upstream and downstream of the confluence of Mammy Johnsons River and Coal Shaft Creek; trigger levels for further investigation; and (g) a contingency plan that would be implemented if monitoring suggests the frog population downstream of the confluence of Mammy Johnsons River and Coal Shaft Creek is declining due to the project, which may include a revision of the first flush salinity trigger or the implementation of additional water quality controls.	Giant Barred Frog Monitoring Program, 28 Jul 2010 Giant Barred Frog Management Plan May 2011	C	<i>Giant Barred Frog Monitoring Program</i> , 28 July 2010: (a) A monitoring program was implemented for the Giant Barred Frog. The Program was designed in consultation with Dr. Arthur White and Professor David Goldney to verify the impact assessment for the Giant Barred Frog. (b) The Giant Barred Frog Management Plan was prepared and submitted to the Director-General in May 2011; (c) Appendix A and B of the Plan; (d) Section 7 Assessment and Performance Measures (e) Section 9 Contingency Measures (f) Section 6 Giant Barred Frog Monitoring Program <ul style="list-style-type: none"> Section 7 Assessment and Performance Measures Section 6.2 Survey Timing Section 7 Assessment and Performance Measures (g) Section 9 Contingency Measures

MCoA	Condition	Verification	Compliance	Comments
	Biodiversity Offsets			
3/33	The Proponent shall implement the offset strategy to the satisfaction of the Director-General.		In progress	
	Long Term Security of Offset			
3/34	By the end of December 2011, the Proponent shall make suitable arrangements to provide appropriate long term security for the offset strategy area to the satisfaction of the Director-General.		In progress	The requirements of this condition were being addressed at the date of this audit. Decisions are not required until 31 December 2011.
	Biodiversity Management Plan			
3/35	<p>The Proponent shall prepare and implement a Biodiversity Management Plan for the project to the satisfaction of the Director-General. This plan must:</p> <ul style="list-style-type: none"> (a) be prepared in consultation with DECCW, and submitted to the Director-General for approval by the end of December 2011; (b) describe how the implementation of the offset strategy would be integrated with the overall rehabilitation of the site (see below); (c) include: <ul style="list-style-type: none"> • detailed performance and completion criteria for the implementation of the offset strategy; • a description of the measures that would be implemented over the next 3 years to implement the offset strategy and manage the remnant vegetation and habitat on site, including the procedures to be implemented for: <ul style="list-style-type: none"> - implementing revegetation and regeneration within the offset areas, including establishment of canopy, sub-canopy (if relevant), understorey and ground strata; - 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; - undertaking pre-clearance surveys; - managing impacts on fauna; - landscaping the site, and particularly the 		In progress	The Biodiversity Management Plan was being developed at the date of this audit. Greening Australia has been commissioned to inspect the areas proposed for the offset strategy, in November 2011. The draft Plan is scheduled for finalisation in early December and submission to the Director-General by end December 2011.

MCoA	Condition	Verification	Compliance	Comments
	<p>land adjoining public roads, to minimise visual and lighting impacts;</p> <ul style="list-style-type: none"> - collecting and propagating seed; - salvaging and reusing material from the site for habitat enhancement; - controlling weeds and feral pests; - managing grazing and agriculture; - controlling access; and - bushfire management; <ul style="list-style-type: none"> • a program to monitor the effectiveness of these measures, and evaluate progress against the detailed performance and completion criteria; and • details of who would be responsible for monitoring, reviewing, and implementing the plan 			
	Conservation Bond			
3/36	<p>Within 6 months of the approval of the Biodiversity Management Plan, the Proponent shall lodge a conservation 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:</p> <ul style="list-style-type: none"> (a) calculating the full cost of implementing the offset strategy; and (b) employing a suitably qualified quantity surveyor to verify the calculated costs, to the satisfaction of the Director-General. <p>If the offset strategy is completed to the satisfaction of the Director-General, the Director-General will release the conservation bond.</p> <p>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 implementation of the offset strategy.</p>		Noted	The Biodiversity Management Plan is due for submission to the Director-General by end December 2011. The calculations for the Conservation Bond will be undertaken following approval of the Biodiversity Management Plan by the Director-General.
3/37	After each Independent Environmental Audit (see Condition 8 of Schedule 5), the Proponent shall review and adjust the sum of the bond to the satisfaction of the Director-General.		Noted	
	HERITAGE			
3/38	<p>The Proponent shall prepare and implement a Heritage Management Plan for the project to the satisfaction of the Director-General. This plan must:</p> <ul style="list-style-type: none"> (a) be prepared in consultation with DECCW, the 	<p>Aboriginal Cultural Heritage Management Plan, Revision D 22 Dec 2008</p> <p>Heritage Management Plan, May</p>	C	<p>Aboriginal Cultural Heritage Management Plan, Revision D 22 Dec 2008:</p> <ul style="list-style-type: none"> (a) The Aboriginal Cultural Heritage Management Plan, Revision B was submitted to the Karuah LALC for

MCoA	Condition	Verification	Compliance	Comments
	<p>Aboriginal community, Heritage Branch, Council, and any local historical organisations;</p> <p>(b) be submitted to the Director-General for approval by the end of May 2011;</p> <p>(c) describe the program/procedures that would be implemented for:</p> <ul style="list-style-type: none"> recording, salvaging and/or managing the Aboriginal sites and potential archaeological deposits within the project disturbance area; conserving, managing and monitoring Aboriginal sites DM2, DM4, DM6, DM 9, DM 10 and 38-1- 0033; minimising the potential impacts of the project on Aboriginal site 38-1-0034, DM7 and DM8; responding to the discovery of any new Aboriginal objects or skeletal remains during the project; enabling the Aboriginal community to access the archaeological sites on site; and involve the Aboriginal community in the conservation and management of Aboriginal cultural heritage on the site. <p>(d) include the following for the Weismantel Inn:</p> <ul style="list-style-type: none"> a baseline dilapidation survey; photographic and archival recording; a program to monitor the effects of the project on the inn; and a contingency plan that would be implemented if the monitoring indicates that the project is adversely affecting the condition of the inn. <p><i>Note: To identify the heritage sites referred to in this condition, see the figure in Appendix 6.</i></p>	<p>2011</p> <p>Letter to OEH re draft Heritage Management Plan, 3 Jun 2011</p>		<p>information on 28 June 2002 and the final Aboriginal Cultural Heritage Management Plan, Revision D 22 December 2008 was submitted to DoP.</p> <p>(b) Heritage Management Plan required under this MCoA 3/38 was submitted to DP&I 1 June 2011. No response had been received by Duralie Coal at the date of this audit.</p> <p>(c) Programs and procedures-</p> <ul style="list-style-type: none"> Section 5 Known Aboriginal and European Heritage Sites (2011) section 6 Aboriginal and European Heritage Site Management and Monitoring of (2011) section 6 Management of Previously Unidentified Relics (2008) section 8 Cultural Dissemination (2008) section 3 Consultation Process and section 8 Cultural Dissemination (2008) and Section 4 Consultation (2011) <p>(d) Section 6.2 European Heritage Sites; section 7 Contingency Plan (2011).</p> <p>Heritage Management Plan May 2011 (draft):</p> <p>(a) The heritage Management Plan was submitted to the relevant authorities in May 2011. No responses form the authorities had been received by Duralie Coal at the date of this audit.</p> <p>(b) The draft Heritage Management Plan was submitted to DP&I in May 2011. No responses form the authorities had been received by Duralie Coal at the date of this audit.</p> <p>(c) Section 6 Aboriginal and European Heritage Site Management</p> <p>Section 6.2 European Heritage Sites</p>
	TRANSPORT			
	Access			
3/39	Prior to the closure of Cheerup Road and the portion of Duralie Road within the project area, the Proponent shall construct a suitable access road to property No. 143 (Madden) to the satisfaction of the Director-General. However, this condition does not apply if the Proponent purchases the property.		Not Applicable	Duralie have purchased an area of Property No. 143 (Madden) to the west of the ML boundary that was affected by Cheerup Road and Duralie Road. Consequently the requirement to construct a suitable access road to this property has been eliminated.
	Monitoring of Coal Transport			
3/40	<p>The Proponent shall:</p> <p>(a) keep accurate records of the:</p>	Coal Transportation Management Plan, 25 May 2011	C Ongoing	(a) All ROM coal is transported from the Duralie site to Stratford Mining Complex by rail. Railing to the Stratford site in restricted to between 7am and

MCoA	Condition	Verification	Compliance	Comments
	<ul style="list-style-type: none"> amount of coal transported from the site (on a monthly basis); and the date and time of each train movement to and from the site; and (b) make these records publically available on its website at the end of each calendar year. 	Weekly Train Loading and Unloading Records, Duralie Coal, Oct 2011		<p>10pm.</p> <p>Duralie records the date of each train start time and end time for the Duralie-Stratford and Stratford-Duralie trip, and volume of coal transported.</p> <p>The number of train movements and volume/weight of coal transported is reported in the Annual Review.</p> <p>(b) Records will be loaded to the Duralie website in December 2011 to conform with this condition.</p>
	VISUAL			
	Visual Amenity and Lighting			
3/41	<p>The Proponent shall:</p> <ul style="list-style-type: none"> (a) Minimise visual impacts, and particularly the off-site lighting impacts, of the project; and (b) ensure that all external lighting on site complies with Australian Standard AS4282 (INT) 1995 - Control of Obtrusive Effects of Outdoor Lighting, <p>to the satisfaction of the D-G.</p>	Lighting Management Plan, December 2002	C	<p>(a) Mitigation Measures to reduce potential light impacts on the surrounding area have included:</p> <ul style="list-style-type: none"> Lighting of operational areas occurs with directional lighting only; Lighting screened (shielded) where necessary to limit spillage to adjacent residences and eliminate driver glare along Johnson Creek Road; Haul trucks will operate with dipped headlights; No trains leaving site after 9pm or before 6am; Limited use of fixed lighting within the train load out bin area during night time due to the restriction on trains leaving the site; <p>(b) External lighting on the Duralie site complies with AS4282 (INT) 1995 - Control of Obtrusive Effects of Outdoor Lighting.</p>
	Additional Visual Mitigation Measures			
3/42	<p>Upon receiving a written request from the owner of:</p> <ul style="list-style-type: none"> (a) the land listed as 125(1), 125(2), and 116 on the figure in Appendix 3; or (b) any residence on privately-owned land which has, or would have, significant direct views of the mining operations on site, the Proponent shall implement visual mitigation measures (such as landscaping treatments or perimeter bunding) on the land in consultation with the owner. These measures must be reasonable and feasible, and directed toward minimising the visibility of the mining operations from the residence on the land. <p>If within 3 months of receiving this request from the owner, the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.</p>		Ongoing	<p>Duralie Coal now owns the residences that had significant views of the mine operations.</p> <p>Landscape treatment or bunding for the Wards River Station property (now owned by Duralie Coal) will have significant direct views of the mine workings as the mining progresses north. Amelioration of the view of the mine workings will be addressed by Duralie to reduce the visual effects at the property and from Bucketts Way.</p>

MCoA	Condition	Verification	Compliance	Comments				
3/43	Unless the Director-General agrees otherwise, the Proponent shall: <div><div>(a)</div>screen the views of the project as far as is practicable from the section of Bucketts Way marked in red on the figure in Appendix 7 by the end of December 2011, in consultation with the RTA, Council and any relevant landowners; and <div>(b)</div>maintain the screen during the life of the project, to the satisfaction of the Director-General</div>		Ongoing	Activity related to the screening of views from The Bucketts Way had not commenced at the date of this audit due to the pending Land and Environment hearing on MOD 6 Duralie Extension Project.				
	WASTE							
3/44	The Proponent shall: <div><div>a)</div>minimise the waste generated by the project; and <div>b)</div>ensure that the waste generated by the project is appropriately stored, handled and disposed of, to the satisfaction of the Director-General.</div>	Waste Management Plan, Mar 2011	C	The Waste Management Plan addresses the requirements of this condition: <div><div>(a)</div>section Waste Reduction <div>(b)</div>section 4 Management and Mitigation Measures</div>				
3/45	The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must be submitted to the Director-General by the end of March 2011.	Waste Management Plan, Mar 2011 Letter from DP&I re Approval of Waste Management Plan, 30 Mar 2011	C	The Waste Management Plan was prepared by Duralie Coal and submitted to the DP&I on 28 March 2011 and approved on 30 March 2011.				
	BUSHFIRE MANAGEMENT							
3/46	The Proponent shall: <div><div>(a)</div>ensure that the project is suitably equipped to respond to any fires on site; and <div>(b)</div>assist the Rural Fire Service and emergency services as much as possible if there is a fire in the surrounding area.</div>		C	Bushfire management related activities/works include: <ul style="list-style-type: none">Improved access to sections of the DCPL landholdings have been created;Leightons can make available an off road water cart for bushfire fighting purposes;Duralie Coal routinely undertakes hazard reduction burns, in consultation with neighbouring property owners/occupiers and the local Rural Fire Service unit.Fuel loads on cleared pastures area on the mine site are reduced by cattle agistment and/or periodic slashing.				
	REHABILITATION							
	Rehabilitation Objectives							
3/47	The Proponent shall rehabilitate the site to the satisfaction of the Director-General of I&I NSW. This rehabilitation must be generally consistent with the proposed rehabilitation strategy described in the EA (and depicted conceptually in the figures in Appendix 7), and comply with the objectives in Table 11. Table 11: Rehabilitation Objectives	Environmental Assessment “Duralie Extension Project” 2010 Rehabilitation Management Plan, 2011 Mining Operation Plan for Duralie Open Cut Coal Mine, Mining Lease	Ongoing	The rehabilitation of the Duralie Mine site is occurring progressively in accordance with the principles outlined in the Rehabilitation Management Plan and the Mining Operations Plan (MOP). The MOP and Rehabilitation Management Plan generally provide for the rehabilitation of the site to be consistent				
	<table><tr><th>Feature</th><th>Objective</th></tr><tr><td></td><td></td></tr></table>	Feature	Objective					
Feature	Objective							

MCoA	Condition		Verification	Compliance	Comments
	Mine site (as a whole)	Safe, stable & non-polluting	(ML) 1427 and Mining Lease Application (MLA) 359, 2 Dec 2010,		with the proposed rehabilitation strategy outlined in the Environmental Assessment "Duralie Extension Project" 2010.
	Surface infrastructure	To be decommissioned and removed unless the D-G agrees otherwise			
	Coal Shaft Creek Diversion	Hydraulically and geomorphologically stable, with riparian vegetation that is the same or better than prior to mining			
	Other land affected by the project	Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of local native plant species; and a landform consistent with the surrounding environment			
	Final void	Safe, stable and non-polluting			
	Community	Minimise the adverse socio-economic effects associated with mine closure			
	Progressive Rehabilitation				
3/48	The Proponent shall carry out the rehabilitation of the site progressively, that is, as soon as reasonably practicable following disturbance.		Rehabilitation Management Plan, Revision B, Sep 2007 Rehabilitation Management Plan, 23 May 2011	Ongoing	
	Rehabilitation Management Plan				
3/49	The Proponent shall prepare and implement a Rehabilitation Management Plan for the project to the satisfaction of the Director-General of DI&I NSW. This plan must: <ul style="list-style-type: none"> (a) be prepared in consultation with the Department, DECCW, NOW, Council and the CCC; (b) be prepared in accordance with any relevant I&I NSW guideline; (c) build, to the maximum extent practicable, on the other management plans required under this approval; and (d) be submitted to the Director-General of I&I NSW for approval by the end of May 2011. 		Rehabilitation Management Plan, Revision B, Sep 2007 <i>Rehabilitation by Design – Practice Notes</i> - New South Wales Minerals Council (NSWMC), 2007 Rehabilitation Management Plan, 23 May 2011 Letter to DP&I re draft Rehabilitation Management Plan, 25 May 2011	C C Not yet approved	Rehabilitation Management Plan, Revision B September 2007: (a) the Rehabilitation Management Plan was submitted to the DoP on 10 May 2007 for review and approval. The Final Rehabilitation Management Plan Revision B was submitted to DoP on 5 September 2007. (b) The Rehabilitation Management Plan was developed taking account of the NSWMC rehabilitation Design Practice Notes. (c) Noted Rehabilitation Management Plan 25 May 2011: (a) The Rehabilitation Plan was prepared in consultation with the DEH, OoW, GLC and DP&I. (b) The Plan was prepared with reference to the NSWMC practice notes;

MCoA	Condition	Verification	Compliance	Comments
				(c) The plan was prepared to complement and supplement other relevant Duralie Coal management plans; (d) The Rehabilitation Management Plan was submitted to the Director-General on 23 May 2011. No response from the Director-General had been received by Duralie Coal at the date of this audit
	SCHEDULE 4 ADDITIONAL PROCEDURES			
	NOTIFICATION OF LANDOWNERS			
4/1	By the end of December 2010, the Proponent shall notify in writing the owners of: <ul style="list-style-type: none"> (a) the land listed in 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) any residence on the land listed in Table 1 or in Condition 4(b) of Schedule 3 that they are entitled to ask for additional noise mitigation measures to be implemented at their residence at any stage during the project; (c) any privately-owned land within 2 kilometres of the approved open cut mining pit on site that they are entitled to ask for an inspection to establish the baseline condition of any buildings or structures on their land, or to have a previous inspection report updated; (d) any residence on the land listed as 125(1) and 125(2) on the figure in Appendix 3 that they are entitled to ask for additional dust mitigation measures to be implemented at their residence at any stage during the project; and (e) the owner the land listed as 125(1), 125(2), and 116 on the figure in Appendix 3; or any residence on privately-owned land which has (or would have) significant direct views of the mining operations on site, that they are entitled to ask for additional visual mitigation measures to be implemented on their land at any stage during the project. 	Letters to Property Owners in Table 1 Schedule sent February 2011: Property No.104 - Mudford Property No.117 - Holmes Property No.125 (1) - Zulumovski Property No.125 (2) – Zulumovski Property No.118 - Moylan Property No.122 - White Property No.128 – Hare Scott Property No.131 (2) - Relton	C	Letter of notification to landowners of their right to require Duralie to purchase their land were sent on 2 February 2011. Although this was beyond the date of the requirement of the condition the intent has been met <ul style="list-style-type: none"> (a) the letter addressed the matter of acquisition upon request for relevant properties listed in Table 1 Schedule 3. (b) The letter included mention of additional noise mitigation measures (c) The letter addressed the provision of a baseline building inspection by Duralie, if requested by the landowner. (d) Additional dust mitigation measures were addressed for relevant properties, (e) Additional visual mitigation measures were addressed for relevant properties,
4/2	Within 2 weeks of obtaining monitoring results showing: <ul style="list-style-type: none"> (a) an exceedance of the relevant criteria in Schedule 3, the Proponent shall notify the affected landowner and tenants in writing of the exceedance, and provide 		Noted	

MCoA	Condition	Verification	Compliance	Comments
	<p>monitoring results to each of these parties until the project is complying with the relevant criteria again;</p> <p>(b) an exceedance of the relevant criteria in Condition 4(c) of Schedule 3, the Proponent shall notify the relevant owner in writing that they are entitled to ask for additional noise mitigation measures to be installed at their residence;</p> <p>(c) an exceedance of the relevant air quality criteria in Schedule 3, the Proponent shall send the affected landowners and tenants (including the tenants of any mine-owned land) a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time); and</p> <p>(d) an exceedance of the relevant criteria in Condition 20 of Schedule 3, the Proponent shall notify the relevant owner in writing that they are entitled to ask for additional dust mitigation measures to be implemented at their residence.</p>			
	INDEPENDENT REVIEW			
4/3	<p>If an owner of privately-owned land considers the project to be exceeding the relevant 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.</p> <p>If the Director-General is satisfied that an independent review is warranted, then within 2 months of the Director-General's decision the Proponent shall:</p> <p>(a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to:</p> <ul style="list-style-type: none"> consult with the landowner to determine his/her concerns; conduct monitoring to determine whether the project is complying with the relevant criteria in Schedule 3; and if the project is not complying with these criteria, then identify the measures that could be implemented to ensure compliance with the relevant criteria; and <p>(b) give the Director-General and landowner a copy of the independent review.</p>		Not triggered	
4/4	<p>If the independent review determines that the project is complying with the relevant criteria in Schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.</p>		Not triggered	

MCoA	Condition	Verification	Compliance	Comments
	<p>If the independent review determines that the project is not complying with the relevant criteria in Schedule 3, then the Proponent shall:</p> <ul style="list-style-type: none"> (a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent person, 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 criteria, to the satisfaction of the Director-General. <p>If the independent review determines that the project is not complying with the relevant acquisition criteria in Schedule 3, 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 5-6 below</p>			
	LAND ACQUISITION			
4/5	<p>Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on:</p> <ul style="list-style-type: none"> (a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the project, having regard to the: <ul style="list-style-type: none"> • existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and • presence of improvements on the land and/or any approved building or structure which has been physically commenced on the land 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 any additional noise mitigation measures under Condition 4 of Schedule 3; (b) the reasonable costs associated with: <ul style="list-style-type: none"> • relocating within the Great Lakes or Gloucester local government areas, 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. 		Not triggered	

MCoA	Condition	Verification	Compliance	Comments
	<p>However, if at the end of this period, the Proponent and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.</p> <p>Upon receiving such a request, the Director-General will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to:</p> <ul style="list-style-type: none"> (a) consider submissions from both parties; (b) 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; (c) prepare a detailed report setting out the reasons for any determination; and (d) provide a copy of the report to both parties. <p>Within 14 days of receiving the independent valuer's report, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.</p> <p>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 D-G will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report disputing the independent valuer's determination, and any other relevant submissions.</p> <p>Within 14 days of this determination, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the Director-General's determination.</p> <p>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.</p>			
4/6	<p>The Proponent shall pay all reasonable costs associated with the land acquisition process described in Condition 5 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration</p>		Not triggered	

MCoA	Condition	Verification	Compliance	Comments
	of this plan at the Office of the Registrar-General			
	SCHEDULE 5 ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING			
	ENVIRONMENTAL MANAGEMENT			
	Environmental Management Strategy			
5/1	<p>The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. This strategy must:</p> <ul style="list-style-type: none"> (a) be submitted to the Director-General for approval by the end of May 2011; (b) provide the strategic framework for the 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: <ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the operation and environmental performance of the project; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the project; • respond to any non-compliance; • respond to emergencies; and (f) include: <ul style="list-style-type: none"> • copies of any strategies, plans and programs approved under the conditions of this approval; and • a clear plan depicting all the monitoring required to be carried out under the conditions of this approval. 	<p>Environmental Management Strategy, 12 Apr 2007</p> <p>Environmental Management Strategy, June 2011</p> <p>Letter from DP&I re Approval of Environmental Management Strategy, 27 July 2011</p>	C	<p>Environmental Management Strategy May 2011:</p> <ul style="list-style-type: none"> (a) The Environmental Management Strategy was revised and submitted to DP&I on 26 May 2011. (b) section 5 Environmental Objectives and section 6 Environmental Impacts and Mitigation Strategies outline the strategic framework for the environmental management of the project (c) section 3 Compliance with the Development Consent and section 3 Relevant Statutory Obligations (d) section 4 Site Environmental Management Structure (e) Procedures – <ul style="list-style-type: none"> • section 8 Community Objectives • section 9 Complaints, Consultation and Conflict Resolution • section 10 Compliance • section 6.1 Environmental Emergencies (f) Table 3 Summary of Environmental Management, Strategies and/or Monitoring Plans provides reference to the relevant documents. <ul style="list-style-type: none"> • Copies of the documents were referenced in the EMS but hard copies were not attached to the EMS document. • Environmental monitoring required under the MCoA are collated and presented in an Environmental Monitoring Program document.
	Management Plan Requirements			
5/2	<p>The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:</p> <ul style="list-style-type: none"> (a) detailed baseline data; (b) a description of: <ul style="list-style-type: none"> • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; 	<p>Noise Management Plan</p> <p>Blast Management Plan</p> <p>Air Quality & Greenhouse Gas Management Plan (AQGGMP)</p> <p>Water Management Plan including:</p> <p>Site Water Balance</p> <p>Surface Water Management Plan</p>	C	<p>The Management Plans developed for the Duralie Mine under Project Approval (dated 26 November 2010) reference this MCoA condition in Table 1 and provides a cross reference of the requirements and the section where they are addressed within each plan.</p> <p>The Plans prepared to address these requirements are: MCoA Schedule 3 condition 7</p>

MCoA	Condition	Verification	Compliance	Comments
	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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. 	<p>Groundwater Management Plan Giant Barred Frog Management Plan Biodiversity Management Plan Heritage Management Plan Waste Management Plan Rehabilitation Management Plan incorporating:</p> <ul style="list-style-type: none"> Final Void Management Plan Mine Closure Plan 		<p>Noise Management Plan (NMP) MCoA Schedule 3 condition 16 Blast Management Plan MCoA Schedule 3 condition 23 Air Quality & Greenhouse Gas Management Plan (AQGGMP) MCoA Schedule 3 condition 27 to 29 Water Management Plan (WMP), including:</p> <ul style="list-style-type: none"> Site Water Balance (condition 29(a)) Surface Water Management Plan (condition 29(b)) Groundwater Management Plan (condition 29) <p>MCoA Schedule 3 condition 32 Giant Barred Frog Management Plan MCoA Schedule 3 condition 35 Biodiversity Management Plan MCoA Schedule 3 condition 38 Heritage Management Plan MCoA Schedule 3 condition 45 Waste Management Plan MCoA Schedule 3 condition 49 Rehabilitation Management Plan incorporating:</p> <ul style="list-style-type: none"> Final Void Management Plan Mine Closure Plan
	Annual Review			
5/3	<p>By the end of December 2011, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Director-General. This review must:</p> <ul style="list-style-type: none"> (a) describe the development (including any rehabilitation) that was carried out in the past year, and the development that is 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 the relevant statutory requirements, limits or performance measures/criteria; (c) the monitoring results of previous years; and the relevant predictions in the EA; (d) identify any non-compliance over the past year, and 	Draft Annual Review, 2010-2011	C Ongoing	<p>The Annual Review (titled Annual Environmental Management Report) for 1 September 2010 to 30 August 2011 was being prepared at the date of this audit. The draft Annual Review addressed the requirements of MCoA 5/3:</p> <ul style="list-style-type: none"> (a) Summary of Operations provided in the Resource Utilisation, Open Cut Mining, Coal Handling and Beneficiation and Mine Development sections. (b) to (f) Management and Monitoring Plans, PPrograms and Protocols – Water, Erosion and Sediment control, Air, Noise, Vibration and Blasting, Waste Management and Recycling, Hazardous and Explosive Materials and Rehabilitation. (g) Quality Improvement and Target Initiatives section

MCoA	Condition	Verification	Compliance	Comments
	<p>describe what actions were (or are being) taken to ensure compliance;</p> <p>(e) identify any trends in the monitoring data over the life of the project;</p> <p>(f) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and</p> <p>(g) describe what measures will be implemented over the next year to improve the environmental performance of the project.</p>			
	Revision of Strategies, Plans and Programs			
5/4	<p>Within 3 months of:</p> <p>(a) the submission of an annual review under Condition 3 above;</p> <p>(b) the submission of an incident report under Condition 6 below;</p> <p>(c) the submission of an audit under Condition 8 below; and</p> <p>(d) any modification to the conditions of this approval (unless the conditions require otherwise), the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General.</p> <p><i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.</i></p>		Noted	
	Community Consultative Committee			
5/5	<p>The Proponent shall establish and operate a new Community Consultative Committee (CCC) for the project in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007, or its latest version), and to the satisfaction of the Director-General. This CCC must be operating by the end of March 2011.</p> <p><i>Note:</i></p> <p><i>The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval;</i></p> <p><i>In accordance with the guideline, the Committee should be comprised of an independent chair and appropriate</i></p>	<p>Letter from DP&I re Approval of Independent Chairperson of CCC, 10 Mar 2011</p> <p>CCC Meeting Minutes</p> <p>22 June 2011</p> <p>3 February 2011</p> <p>5 August 2010</p> <p>4 February 2010</p> <p>5 February 2009</p> <p>7 May 2009</p> <p>6 August 2009</p> <p>5 November 2009</p> <p>6 November 2008</p>	C	<p>The CCC was formed in accordance with Schedule 5, Condition 5 of the Project Approval for the Duralie Extension Project. The Committee operates in such a manner as to generally satisfy the <i>Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects</i> (Department of Planning, 2007) as well as satisfy the Director-General of the Department of Planning & Infrastructure.</p> <p>The CCC had its first meeting for 2011 in February and dissolution of the current Committee was discussed with formation of new Committee under this Project Approval Schedule 5 condition 5 to occur by the end of March 2011.</p> <p>The new CCC met on the 22 June 2011 with the following</p>

MCoA	Condition	Verification	Compliance	Comments
	<i>representation from the Proponent, Council, recognised environmental groups and the local community; and With the approval of the Director-General, this CCC may be combined with the current CCC for the Stratford coal mine.</i>	Newsletters August 2009 June 2009 May 2009 February 2009 October 2008		representatives: Chairman: Hon Milton Morris AO CCC Members: David Carroll, Brian Eastoe, Alan Fisher-Webster, Rod Williams, Tony Tersteeg Council Representatives: Cr Karen Hutchison Gloucester Shire Council Lisa Schiff Great Lakes Council Government Agency Representatives: Colin Phillips Department of Planning and Infrastructure David Kitto (Apology) Dept of Planning and Infrastructure Gloucester Coal Representatives: Tony Dwyer – Manager Approval for Gloucester Coal Mike Smith - General manager Operations Chris Ford FordComm
	REPORTING			
	Incident Reporting			
5/6	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 the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.		C	Duralie Coal maintain an Incident Register and the relevant agencies are notified in the event of a reportable incident.
	Regular Reporting			
5/7	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.		C	Relevant Duralie Coal documentation has been placed on the website – www.gloucestercoal/Duralie/Environment . The website is being updated as part of the Gloucester Coal Group website and will conform with the NSW Planning Guideline for Establishing and Maintaining Websites for Mining Projects.
	INDEPENDENT ENVIRONMENTAL AUDIT			
5/8	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;	Letter from DP&I re Independent Environmental Audit, 14 Oct 2011	C	This Independent Environmental Audit was conducted on 31 October 2011 to 5 November 2011 by Trevor Brown & Associates: (a)The Independent Environmental Audit team was approved by the Director-General on 14 October 2011:

MCoA	Condition	Verification	Compliance	Comments
	(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.			<ul style="list-style-type: none"> Trevor Brown (Lead Auditor) Mark Passfield and Andrew McLeod (Soil, sediment control, water and rehabilitation) Thomas Cockings, Matthew Verth/Renzo Arango (Noise) Stephen Periera (Air Quality) Site inspections were conducted on 31 October and 1 November and document review and discussions held with the relevant Duralie and Gloucester Coal personnel on the 1-5 November 2011. Additional information required by the auditors was provided by Duralie during November 2011.
5/9	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			
5/10	From the end of December 2010, the Proponent shall: (a) make copies of the following publicly available on its website: <ul style="list-style-type: none"> the documents referred to in Condition 2 of Schedule 2; all relevant statutory approvals for the project; all approved strategies, plans and programs required under the conditions of this approval; the monitoring results of the project, reported in accordance with the specifications in any approved plans or programs required under the conditions of this or any other approval; a complaints register, which is to be updated on a monthly basis; minutes of CCC meetings; the annual reviews required under this approval; any independent environmental audit of the project, 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.		C Ongoing	Relevant Duralie Coal documentation has been placed on the website – www.gloucestercoal.com.au/Duralie/Environment . The website is being updated as part of the Gloucester Coal Group website and will conform with the NSW Planning Guideline for Establishing and Maintaining Websites for Mining Projects.

Attachment B

Environment Protection Licence 11701 – Duralie Coal Pty Ltd

EPL	Condition	Verification	Compliance	Comments																
1	Administrative conditions																			
A1	What the licence authorises and regulates																			
A1.1	Not applicable																			
A1.2	<p>This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.</p> <p>Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.</p> <table><tr><th colspan="2">Scheduled Activity</th></tr><tr><td colspan="2">Mining for coal</td></tr><tr><td colspan="2">Coal works</td></tr><tr><td colspan="2">Extractive activities</td></tr><tr><th>Fee Based Activity</th><th>Scale</th></tr><tr><td>Land-based extractive activity</td><td>0 - 30000 T obtained</td></tr><tr><td>Coal works</td><td>0 - 2000000 T loaded</td></tr><tr><td>Mining for coal</td><td>> 500000 - 2000000 T produced</td></tr></table>	Scheduled Activity		Mining for coal		Coal works		Extractive activities		Fee Based Activity	Scale	Land-based extractive activity	0 - 30000 T obtained	Coal works	0 - 2000000 T loaded	Mining for coal	> 500000 - 2000000 T produced		C	Duralie Coal was compliant with the scheduled activity and fee based activities referred to in this condition at the date of this audit.
Scheduled Activity																				
Mining for coal																				
Coal works																				
Extractive activities																				
Fee Based Activity	Scale																			
Land-based extractive activity	0 - 30000 T obtained																			
Coal works	0 - 2000000 T loaded																			
Mining for coal	> 500000 - 2000000 T produced																			
A1.3	Not applicable																			
A2	Premises to which this licence applies																			
A2.1	<p>The licence applies to the following premises:</p> <table><tr><th>DURALIE COAL MINE</th></tr><tr><td>EAST OF THE BUCKETTS WAY, BETWEEN THE VILLAGES OF STROUD ROAD AND WARDS RIVER, STROUD ROAD NSW 2415</td></tr></table> <p>Department of Mineral Resources Mining Lease No. 1427 issued</p>	DURALIE COAL MINE	EAST OF THE BUCKETTS WAY, BETWEEN THE VILLAGES OF STROUD ROAD AND WARDS RIVER, STROUD ROAD NSW 2415		Noted															
DURALIE COAL MINE																				
EAST OF THE BUCKETTS WAY, BETWEEN THE VILLAGES OF STROUD ROAD AND WARDS RIVER, STROUD ROAD NSW 2415																				

EPL	Condition	Verification	Compliance	Comments																				
	on 6 April 1998																							
A3	Other activities																							
A3.1	Not applicable																							
A4	Information supplied to the EPA																							
A4.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: (a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and (b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.		Noted																					
2	Discharges to air and water and applications to land																							
P1	Location of monitoring/discharge points and areas																							
P1.1	<div><div>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.</div><table><tr><th>EPA Point no</th><th>Type of Discharge Point</th><th>Description of Location Figure 1 Duralie Coal Mine Environmental Monitoring Sites</th></tr><tr><td>8</td><td rowspan="2">PM₁₀ - High volume sampler</td><td>Hi-Vol 1</td></tr><tr><td>9</td><td>Hi-Vol 2</td></tr><tr><td>22</td><td rowspan="4">Dust deposition monitoring</td><td>D1</td></tr><tr><td>23</td><td>D2</td></tr><tr><td>24</td><td>D3</td></tr><tr><td>25</td><td>D4</td></tr><tr><td>26</td><td></td><td>D5</td></tr></table></div>	EPA Point no	Type of Discharge Point	Description of Location Figure 1 Duralie Coal Mine Environmental Monitoring Sites	8	PM ₁₀ - High volume sampler	Hi-Vol 1	9	Hi-Vol 2	22	Dust deposition monitoring	D1	23	D2	24	D3	25	D4	26		D5	Air Quality Monitoring Program (incorporating Air Quality Management Plan), 11 May 2007 Draft Air Quality and Greenhouse Gas Management Plan, April 2011	C	The air quality monitoring program for Duralie includes each of the EPA Points(see Air Quality section 5.3.
EPA Point no	Type of Discharge Point	Description of Location Figure 1 Duralie Coal Mine Environmental Monitoring Sites																						
8	PM ₁₀ - High volume sampler	Hi-Vol 1																						
9		Hi-Vol 2																						
22	Dust deposition monitoring	D1																						
23		D2																						
24		D3																						
25		D4																						
26		D5																						
P1.2	The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.																							
	<div><div>Water and land</div><table><tr><th>EPA Point no</th><th>Type of Discharge Point</th><th>Description of Location Figure 2Duralie Coal Mine Environmental Monitoring Sites</th></tr><tr><td>3</td><td>Discharge</td><td>Mine Water Dam - as shown as</td></tr></table></div>	EPA Point no	Type of Discharge Point	Description of Location Figure 2Duralie Coal Mine Environmental Monitoring Sites	3	Discharge	Mine Water Dam - as shown as	Site Water Management Plan, Version F, 22 Dec 2008 Water Management Plan– Appendix 2 Surface Water Management Plan, Jul 2011	C	The surface water monitoring program for the Duralie Mine operations includes the nominated EPA Points 3, 4, 5, 6, 10 -15, 20, 27, and 29 – 31.														
EPA Point no	Type of Discharge Point	Description of Location Figure 2Duralie Coal Mine Environmental Monitoring Sites																						
3	Discharge	Mine Water Dam - as shown as																						

EPL	Condition			Verification	Compliance	Comments
		quality monitoring	"SW3"			
	4		Open Cut - as shown as "SW4"			
	5		Coal Shaft Creek- near location of proposed Upland West Runoff Dam			
	6		The culvert bisecting sediment dams RS3 and RS4			
	10		SD1 as shown in drawing Figure 2 (Mine Site Access Road and Sediment Controls)			
	11		SD2 - as shown in drawing Figure 2 (Mine Site Access Road & Sediment Controls)			
	12		SD3 - as shown in drawing Figure 2 Mine Site Access Road and Sediment Controls)			
	13	Discharge quality monitoring	SD4 - as shown in drawing Figure 2 (Mine Site Access Road Erosion & Sediment Controls) in Duralie Coal Mine Erosion and Sediment Control Plan May 2002			
	14		SD5 - as shown in drawing Figure 2 (Mine Site Access Road Erosion and Sediment Controls)			
	15		RS1 - as shown in drawing Figure 1 (Rail Siding Erosion & Sediment Controls)			
	20		RS6 - as shown in drawing Figure 1 (Rail Siding and Sediment Controls)			
	27		VC1 - as shown in drawing Figure 1 (Box Cut, Waste Emplacement & Mine Water Dam)			
	29		Upstream of Karuah River - as shown as "SW1"			
	30	Ambient Water Monitoring	Coal Shaft Creek downstream - as shown as "SW2" in Figure 2 (Local Monitoring Sites)			
	31		Gauging Board Mammy Johnsons River - as shown as "GB1"			

EPL	Condition			Verification	Compliance	Comments
P1.3	The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.				NA	No utilisation areas nominated.
3	Limit condition					
L1	Pollution of waters					
L1.1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.				Noted	
L2	Load limits					
L2.1	Not applicable				NA	
L2.2	Not applicable				NA	
L3	Concentration limits					
L3.1-3.3	Not applicable				NA	
L4	Volume and mass limits					
L4.1	Not applicable				NA	
L5	Waste					
L5.1	The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.				C	No waste generated outside of the Duralie Mine premises are received at the premises.
L5.2	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.				Noted	
L5.3	Except as provided by any other condition of this licence, only the hazardous waste listed below may be generated at and/or stored at the premises. Waste oil generated at and stored on the premises not exceeding 6000 litres at any time.				C	Waste oil is generated by Leightons, mining contractors for the Duralie Mine activities, from the maintenance of vehicles and equipment at the Duralie Workshop. Waste oil does not exceed 6000 litres on site at any time.
L6	Noise Limits					
L6.1	Operational noise from the premises must not exceed:			<ul style="list-style-type: none">Noise Monitoring Program, Version H, 12 Apr 2010Draft Noise Management Plan May 2011<i>Duralie Annual Environmental</i>	C	
	Location	Period	Intrusive Criteria			
	SOUTHERN SITE (Woodley) shown as AAAS1 - Figure 1, dated Dec 2009, titled	Day, Evening	35 L _{eq(15min)} dB(A)			

EPL	Condition			Verification	Compliance	Comments
	<div>“Blasting & Noise Monitoring Sites”. Located near southern boundary of Duralie Coal Mine and Johnson Creek Rd.</div> <div>& Night</div>			<div>Management Report 2008 (Noise Section) 4 Sep 2008</div> <ul style="list-style-type: none"> • Compliance Noise Survey and Assessment – Duralie Coal Mine (Vipac): Oct 2008, Jan 2009, Apr 2009, Jul 2009 • Duralie Annual Environmental Management Report 2009 (Noise Section) 4 Sep 2009 • Compliance Noise Survey and Assessment – Duralie Coal Mine (Vipac): Oct 2009, Jan 2010, Apr and Jul 2010 • Duralie Annual Environmental Management Report 2010 (Noise Section) 4 Sep 2009 • Compliance Noise Survey and Assessment – Duralie Coal Mine (Vipac): Oct 2010, Feb 2011, • Apr 2011 		
	EASTERN SITE (Hattam) shown as AS2 - Figure 1, dated Dec 2009, titled “Blasting & Noise Monitoring Sites”.	Day, Evening & Night	35 L _{eq(15min)} dB(A)			
	NORTHERN SITE (Bailey) shown as AAS3 - Figure 1, dated Dec 2009, titled “Blasting & Noise Monitoring Sites”.	Day Evening & Night	36 L _{eq(15min)} dB(A)			
	<p><i>Note: The plan titled “Blasting and Noise Monitoring Sites” and dated December 2009 is filed on EPA file LIC07/10-06.</i></p>					
L6.2	Noise from the premises is to be measured at a distance within 30 metres of the locations identified in L6.1 to determine compliance with this condition.				Noted	Noise monitoring reports identify the site and location of attended and unattended monitoring. The noise surveys comply with this condition.
L6.3	<p>The noise emission limits identified in L6.1 apply for prevailing meteorological conditions (winds up to 3m/s), except under conditions of temperature inversions. Noise impacts that may be enhanced by temperature inversions must be addressed by:</p> <p>(a) Documenting noise complaints received to identify any higher level of impacts or patterns of temperature inversions.</p> <p>(b) Where levels of noise complaints indicate a higher level of impact then actions to quantify and ameliorate any enhanced impacts under temperature inversions conditions should be developed and implemented.</p>			Vipac Compliance Noise Survey and Assessment Reports, section 3.4	Noted	Meteorological conditions are recorded at the time of any attended noise monitoring conducted at and around the Duralie site. The weather conditions are reported in the noise monitoring reports.
L7	Blasting					
L7.1	Blasting in or on the premises must only be carried out between daylight 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.				C	Any blasting at the Duralie site is carried out during daylight hours between 9am and 5pm, Monday to Saturday, with no blasts conducted on Sundays or public holidays.
L7.2	<p>The overpressure level from blasting operations carried out in or on the premises must not:</p> <p>(a) exceed 115 dB(L) for more than 5% of the total number of</p>			<p>2007-2008 AEMR</p> <p>2008-2009 AEMR</p> <p>2009-2010 AEMR</p>	C	<p>Airblast Overpressure</p> <p>The Shultz, Bailey, Hattam and Holmes properties have been purchased by Duralie Coal.</p>

EPL	Condition	Verification	Compliance	Comments																														
	blasts carried out on the premises within the 12 months annual reporting period; and (b) exceed 120 dB(L) at any time at any residence or noise sensitive location (such as a 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.	2010-2011 AEMR		Relocation of the blast monitors to privately owned properties to address this condition has been submitted to OEH for a Variation of the EPL condition M9.1 nominated sites. <table border="1"> <thead> <tr> <th>Date</th><th colspan="2">Airblast Overpressure</th><th colspan="2">Vibration</th></tr> <tr> <th></th><th>>115dBL</th><th>>120dBL</th><th>>5mm/s</th><th>>10mm/s</th></tr> </thead> <tbody> <tr> <td>9/10-8/11</td><td>7 (ex-Hattam)</td><td>0</td><td>3 (ex-Hattam)</td><td>0</td></tr> <tr> <td>9/09-8/10</td><td>8 (ex-Hattam)</td><td>2 (1 ex-Holmes 131.8 and Hattam 120.3dBL)</td><td>1 Hattam 5.9mm/s</td><td>0</td></tr> <tr> <td>9/08-8/09</td><td>1 (2 ex-Holmes and 1 Doherty)</td><td>2(ex-Holmes 122.4 and 121.1dBL)</td><td>0</td><td>0</td></tr> <tr> <td>9/07-8/09</td><td>1 (Holmes 120.9dBL)</td><td>1 (Holmes 120.9dBL)</td><td>0</td><td>0</td></tr> </tbody> </table> Blast overpressure exceeding 120dBL has only occurred at mine owned premises. No vibration over 5mm/s has occurred at any monitoring site from the Duralie blasts.	Date	Airblast Overpressure		Vibration			>115dBL	>120dBL	>5mm/s	>10mm/s	9/10-8/11	7 (ex-Hattam)	0	3 (ex-Hattam)	0	9/09-8/10	8 (ex-Hattam)	2 (1 ex-Holmes 131.8 and Hattam 120.3dBL)	1 Hattam 5.9mm/s	0	9/08-8/09	1 (2 ex-Holmes and 1 Doherty)	2(ex-Holmes 122.4 and 121.1dBL)	0	0	9/07-8/09	1 (Holmes 120.9dBL)	1 (Holmes 120.9dBL)	0	0
Date	Airblast Overpressure		Vibration																															
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9/07-8/09	1 (Holmes 120.9dBL)	1 (Holmes 120.9dBL)	0	0																														
4	Operating conditions																																	
O1	Activities must be carried out in a competent manner																																	
O1.1	Licensed activities must be carried out in a competent manner. This includes: (a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and (b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.		Noted																															
O1.2	The licensee must ensure any hazardous and/or industrial and/or Group A waste is not mixed with any other type of waste or with any other material.		Noted	All waste on site is segregated and collected by contractor for recycling or reuse.																														
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.		Noted	All vehicles and equipment used on the Duralie site is operated by Leighton Contractors and is maintained in the onsite workshop to ensure efficient and operation.																														
O3	Dust																																	
O3.1	Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emission from the		C	Dust emissions are managed on site with the use of water carts on internal haul roads and management of																														

EPL	Condition	Verification	Compliance	Comments
	premises, of wind-blown or traffic generated dust.			activities during high wind periods.
O4	Emergency response			
O4.1	Within 3 months of the date of the issue of this licence, the licensee must develop, or update, an emergency response plan which documents the procedures to deal with all types of incidents (e.g. spill, explosions or fire) that may occur at the premises or outside of the premises (e.g. during transfer) which are likely to cause harm to the environment.	Project Emergency Response Plan (ERP) Leighton (M0052-SH-202) Emergency Management Plan, 8 Apr 2010	C	Gloucester Coal has an Emergency Management Plan dated 8 April 2010 that applies to response to all activities under the control of Gloucester Coal on its sites. Leighton mining contractors are responsible for response to emergencies in the Duralie mine operations area and have a Project Emergency Response Plan and Environmental Management Plan for the site operations.
O5	WATER AND CHEMICAL MANAGEMENT			
O5.1	Wastewater management			
O5.2	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.	Irrigation Management Plan, 15 Dec 2008 Surface Water Management Plan July 2011	C	Irrigation of waste water occurs in areas the Duralie site with fixed irrigation sprays and soil moisture and electric conductivity monitoring probes. Travelling spray irrigators have also been used where practicable. Section 8 of the Surface Water Management Plan July 2011 provides the irrigation program for the Duralie Mine area.
O5.3	A wastewater management system must be constructed and utilised to manage the collection, storage, treatment, use and disposal of sewage effluent and other wastewater		C	Sewerage effluent and other wastewater from the bath house is treated in a septic system and irrigated to a dedicated area to the south of the administrative building and contractor car park. The irrigation system for the treated effluent is consistent with the EPA Guideline.
O5.4	An area must be provided for the use of effluent from the sewage treatment plant. The design of the system must be in accordance with the EPA's Guideline "Utilisation of Treated Effluent by Irrigation."	Use of Effluent by Irrigation, DEC Oct 2004		
O6	Bunding			
O6.1	All above ground tanks containing material that is likely to cause environmental harm must be banded or have an alternative spill containment system in-place.		C	The bulk fuel and oil storage areas, adjacent to the Leighton workshop, is banded in accordance with AS1940 to contain 110% of the largest storage vessel.
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	All monitoring records and reports are maintained in the Environment Section files. The monitoring files are retained for a minimum of 4 years and are available on

EPL	Condition	Verification	Compliance	Comments																												
	(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.			request from the Environment Manager.																												
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: (a) the date(s) on which the sample was taken; (b) the time(s) at which the sample was collected; (c) the point at which the sample was taken; and (d) the name of the person who collected the sample		C	All monitoring records include the date, time, sampling point and name of the person who collected the samples.																												
M2	Requirement to monitor concentration of pollutants discharged																															
M2.1	<div>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:</div> <table><tr><th colspan="4">Points 8 and 9</th></tr><tr><th>Pollutant</th><th>Unit of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>PM10</td><td>µg/m³</td><td>Every 6 days</td><td>24hr composite</td></tr></table> <div>Points 10, 11, 12, 13, 14, 15, 20, 27</div> <table><tr><th>Pollutant</th><th>Unit of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>Total Suspended Solids (TSS)</td><td>mg/L</td><td>Each overflow event</td><td>Grab sample</td></tr></table> <div>Points 22, 23, 24, 25, 26</div> <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/m²/mth</td><td>Once a month (min. of 4 weeks)</td><td>AM-19</td></tr></table>	Points 8 and 9				Pollutant	Unit of Measure	Frequency	Sampling Method	PM10	µg/m ³	Every 6 days	24hr composite	Pollutant	Unit of Measure	Frequency	Sampling Method	Total Suspended Solids (TSS)	mg/L	Each overflow event	Grab sample	Pollutant	Unit of Measure	Frequency	Sampling Method	Particulates – Deposited Matter	g/m ² /mth	Once a month (min. of 4 weeks)	AM-19	Environmental Monitoring Program, May 2008	C	The Duralie Environmental Monitoring Program includes the requirements for each of the EPA monitoring Points for air and surface water quality.
Points 8 and 9																																
Pollutant	Unit of Measure	Frequency	Sampling Method																													
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EPL	Condition				Verification	Compliance	Comments																
	<table><tr><th colspan="4">Points 29, 30, 31</th></tr><tr><th>Pollutant</th><th>Unit of Measure</th><th>Frequency</th><th>Sampling Method</th></tr><tr><td>Conductivity (EC)</td><td>µS/cm</td><td rowspan="3">Special Frequency 1</td><td rowspan="3">Grab sample</td></tr><tr><td>Total Suspended Solids (TSS)</td><td>mg/L</td></tr><tr><td>pH</td><td>pH units</td></tr></table> <p>Note: For the purposes of the tables above: Special frequency 1 means: (a) A sample taken monthly; and (b) A sample taken during any discharges (overflows) from monitoring points specified in the table after condition P1.3 of this licence; and (c) A maximum of 1 sample taken in any 21 day period during a runoff-producing rainfall event (20mm or greater of rainfall in a 24 hour period)</p>				Points 29, 30, 31				Pollutant	Unit of Measure	Frequency	Sampling Method	Conductivity (EC)	µS/cm	Special Frequency 1	Grab sample	Total Suspended Solids (TSS)	mg/L	pH	pH units			
Points 29, 30, 31																							
Pollutant	Unit of Measure	Frequency	Sampling Method																				
Conductivity (EC)	µS/cm	Special Frequency 1	Grab sample																				
Total Suspended Solids (TSS)	mg/L																						
pH	pH units																						
M3	Testing methods - concentration limits																						
M3.1	<p>Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:</p> <p>(a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or</p> <p>(b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or</p> <p>(c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.</p> <p><i>Note: The Protection of the Environment Operations (Clean Air) Regulation 2002 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".</i></p>					C	Analysis of samples collected for the monitoring programs are analysed in accordance with approved testing methods/protocols.																
M3.2	<p>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.</p>					C	Analysis of water samples collected for the monitoring programs are analysed by NATA registered laboratories in accordance with Approved Methods/protocols.																

EPL	Condition	Verification	Compliance	Comments
M4	Recording of pollution complaints			
M4.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.		C	A Complaints Register is maintained by Duralie Coal for all complaints received.
M4.2	The record must include details of the following: (a) the date and time of the complaint; (b) the method by which the complaint was made; (c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; (d) the nature of the complaint; (e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and (f) if no action was taken by the licensee, the reasons why no action was taken.	Annual Return EPL 11701 for 4 Sep 2009 to 3 September 2010 Annual Return EPL 11701 for 4 Sep 2008 to 3 September 2009 Annual Return EPL 11701 for 4 Sep 2007 to 3 September 2008 2007-2008 AEMR 2008-2009 AEMR 2009-2010 AEMR 2010-2011 AEMR	C	The Complaints Register records the time and date of the complaint, nature of complaint and actions implemented. All complaints received are reported in the AEMR's /Annual Review documents prepared under the MCoA.
M4.3	The record of a complaint must be kept for at least 4 years after the complaint was made		C	All complaints are recorded and maintained for a minimum of 4 years.
M4.4	The record must be produced to any authorised officer of the EPA who asks to see them		Noted	
M5	Telephone complaints line			
M5.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.		C	A dedicated complaints telephone number 02 4994 0123 operates 24 hours a day.
M5.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.		C	The number is advertised within the Sensis <i>White Pages Directory</i> , a local telephone directory (<i>Pink Pages</i>) and in the local newspapers (<i>Gloucester Advocate and Dungog Chronicle</i>) on a six monthly basis.
M5.3	Conditions M5.1 and M5.2 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 under clause 10 of that regulation.		Noted	
M6	Requirement to monitor volume or mass			

EPL	Condition				Verification	Compliance	Comments
M6.1	Not applicable.						
M7	Requirement to monitor weather						
M7.1	The licensee must monitor (by sampling and obtaining results by analysis) each weather parameter specified in Column1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:					C	The Duralie meteorological station located on a high point west of the Main Water Dam, has continuous monitoring of air temperature, wind speed and direction, and rainfall.
	Parameter	Units of measure	Frequency	Sampling Method			
	Air temperature	0C	Continuous	instrumental			
	Wind direction		Continuous	instrumental			
	Wind speed or run	m/sec	Continuous	instrumental			
	Rainfall	mm	Daily	instrumental			
M8	Requirement to monitor noise						
M8.1	The licensee must carry out noise monitoring at six (6) monthly intervals to measure and assess operational mine related noise levels at those locations identified in condition L6.1.				Compliance Noise Survey and Assessment Reports - Duralie Coal Mine, Vipac	C	Duralie Coal has commissioned 6 monthly noise surveys, conducted by Vipac for the locations identified in EPL condition L6.1.
M9	Requirement to monitor blasting						
M9.1	The licensee must monitor overpressure level and ground vibration peak particle velocity from blasting undertaken in or on the premises at each of the following locations in Figure 1 "Blasting and Noise Monitoring Sites" December 2009: <div><div>Land owned by E and V Shultz shown as AB1</div><div>Land owned by Mr. R Hattam shown as AB2</div><div>Land owned by A and R Bailey shown as AB3</div></div>					C	Airblast Overpressure The Shultz, Bailey, Hattam and Holmes properties have been purchased by Duralie Coal. Blast monitoring is undertaken for each blast event at the Duralie Coal Mine. The blast and vibration monitoring equipment has recorded results at the nominated residences. Gloucester Coal has proposed a Variation to the EPL condition M9.1 to relocated the monitors to the nearest privately owned properties to meet the intent of the MCoA Schedule 3 condition 8.
6	Reporting conditions						
R1	Annual return documents						
R.1.1	What documents must an Annual Return contain? The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: <div>(a) a Statement of Compliance; and</div> <div>(b) a Monitoring and Complaints Summary.</div> A copy of the form in which the Annual Return must be supplied to					Noted	

EPL	Condition	Verification	Compliance	Comments
	the EPA accompanies this licence. Before the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.			
R1.2	Period covered by Annual Return An Annual Return must be prepared in respect of each reporting period, except as provided below. <i>Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.</i>	Annual Return EPL 11701 for 4 Sep 2009 to 3 September 2010 Annual Return EPL 11701 for 4 Sep 2008 to 3 September 2009 Annual Return EPL 11701 for 4 Sep 2007 to 3 September 2008	C	The Duralie Annual Return is prepared for the period 4 September to 3 September the following year.
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. <i>Note: An application to transfer a licence must be made in the approved form for this purpose.</i>		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	
R1.5	Deadline for Annual Return 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 EPL 11701 for 4 Sep 2009 to 3 September 2010 Annual Return EPL 11701 for 4 Sep 2008 to 3 September 2009 Annual Return EPL 11701 for 4 Sep 2007 to 3 September 2008	C	The EPL 11701 Annual Returns have been submitted to the EPA within 60 days of the end of each reporting period.
R.16	Notification where actual load cannot be calculated Not applicable.		NA	
R1.7	Licensee must retain copy of Annual Return 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		C	A copy of each Annual Return is retained in the Environment Section files at the Duralie Coal offices.

EPL	Condition	Verification	Compliance	Comments
	was due to be supplied to the EPA.			
R1.8	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 EPL 11701 for 4 Sep 2009 to 3 September 2010 Annual Return EPL 11701 for 4 Sep 2008 to 3 September 2009 Annual Return EPL 11701 for 4 Sep 2007 to 3 September 2008	C	The Statement of Compliance in the Annual Return has been signed by Directors of Duralie Coal.
R1.9	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 <i>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.</i>			
R2.1	Notifications must be made by telephoning the Environment Line service on 131 555.		Noted	
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.		Noted	
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: (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		Noted	

EPL	Condition	Verification	Compliance	Comments
	<p>employees or agents of the licensee, or a specified class of them, who witnessed the event;</p> <p>(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;</p> <p>(e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;</p> <p>(f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and</p> <p>(g) any other relevant matters.</p>			
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	
	General conditions			
G1	Copy of licence kept at the premises			
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 administration Office at Duralie Mine site and with the Environment Approvals Manager Gloucester Coal Office Stratford Mining Complex.
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	
	Pollution studies and reduction programs			
U1	Not applicable			
	Special conditions			
E1	Not applicable.			

Attachment C

Duralie Coal Mine Mining Lease 1646 4 January 2011

ML No.	Condition	Verification	Compliance	Comments
1	Notice to Landholders (a) Within a period of three months from the date of grant of renewal of this lease or within such further time as the Minister may allow, the lease holder must serve on each landholder of the land a notice in writing indicating that this lease has been granted/renewed and whether the lease includes the surface. An adequate plan and description of the lease area must accompany the notice. (b) If there are ten or more landholders affected, the lease holder may serve the notice by publication in a newspaper circulating in the region where the lease area is situated. The notice must indicate that this lease has been granted/renewed; state whether the lease includes the surface and must contain an adequate plan and description of the lease area.		Noted	
2	Environmental Harm (a) The lease holder must implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of any activities under this lease. (b) For the purposes of this condition: (i) environment means components of the earth, including: land, air and water, and any layer of the atmosphere, and any organic or inorganic matter and any living organism, and human-made or modified structures and areas, and includes interacting natural ecosystems that include components referred to in paragraphs (A)—(C). (ii) harm to the environment includes any direct or indirect alteration of the environment that has the effect of degrading the environment and, without limiting the generality of the above, includes any act or omission that results in pollution, contributes to the extinction or degradation of any threatened species, populations or ecological communities and their habitats and causes impacts to places, objects and features of significance to Aboriginal people.		Noted	
3	Mining Operations Plan (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. (b) The MOP must: (i) identify areas that will be disturbed by mining operations;	Mining Operations Plan, Dec 2010 to 31Dec 2021	C	Duralie Mining Operations Plan: (a) Mining Operation Plan was prepared for the Duralie Open Cut Coal Mine, Mining Lease (ML) 1427 and Mining Lease Application (MLA) 359 on 1 December 2010, and submitted to DII on 2 December

	<p>(ii) detail the staging of specific mining operations;</p> <p>(iii) identify how the mine will be managed to allow mine closure;</p> <p>(iv) identify how mining operations will be carried out in order to prevent and or minimise harm to the environment;</p> <p>(v) reflect the conditions of approval under:</p> <ul style="list-style-type: none"> • the Environmental Planning and Assessment Act 1979 • the Protection of the Environment Operations Act 1997 • and any other approvals relevant to the development including the conditions of this lease; and • have regard to any relevant guidelines adopted by the Director-General. <p>(c) The leaseholder may apply to the Director-General to amend an approved MOP at any time.</p> <p>(d) It is not a breach of this condition if:</p> <p>(i) the operations constituting the breach were necessary to comply with a lawful order or direction given under the Mining Act 1992, the Environmental Planning and Assessment Act 1979, Protection of the Environment Operations Act 1997, Mine Health and Safety Act 2004 / Coal Mine Health and Safety Act 2002 and Mine Health and Safety Regulation 2007 / Coal Mine Health and Safety Regulation 2006 or the Occupational Health and Safety Act 2000; and</p> <p>(ii) the Director-General had been notified in writing of the terms of the order or direction prior to the operations constituting the breach being carried out.</p> <p>(e) A MOP ceases to have effect 7 years after date of approval or other such period as identified by the Director-General</p>			<p>2010.</p> <p>(b) The MOP addresses each of the requirements of condition 3(b).</p> <p>(c) Amended Plans for the mining operations have been submitted to the Director-General when changes to the mine are proposed (e.g. Duralie Extension Project).</p>
4	<p>Environment Management Report</p> <p>(a) The lease holder must lodge Environmental Management Reports (EMR) with the Director-General annually or at dates otherwise directed by the Director-General.</p> <p>(b) The EMR must:</p> <ul style="list-style-type: none"> • report against compliance with the MOP; • report on progress in respect of rehabilitation completion criteria; • report on the extent of compliance with regulatory requirements; and • have regard to any relevant guidelines adopted by the Director-General. 	<p>2008-2009 AEMR</p> <p>2009-2010 AEMR</p> <p>2010-2011 AEMR</p>	C	<p>The Annual Environmental Management Report has been prepared by Duralie and submitted annually to address the requirements of this condition and the Minister for Planning conditions of Approval (MCoA).</p>
5	<p>Environmental Incident Report</p> <p>(a) The lease holder must report any environmental incidents. The report must:</p> <p>be prepared according to any relevant Departmental guidelines;</p> <p>be submitted within 24 hours of the environmental incident occurring;</p> <p>(b) For the purposes of this condition, environmental incident includes:</p> <ul style="list-style-type: none"> • any incident causing or threatening material harm to the environment • any breach of Conditions 1 to 9 and 11 to 24; 		C	

	<ul style="list-style-type: none"> any breach of environment protection legislation; or, a serious complaint from landholders or the public. <p>(c) For the purposes of this condition, harm to the environment is material if:</p> <p>(i) it involves actual or potential harm to the health or safety of human beings, or to ecosystems that is not trivial, or</p> <p>(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding \$10,000, where loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment</p>			
6	Additional Environmental Reports Additional environmental reports may be required from time to time as directed in writing by the Director-General and must be lodged as instructed.		Noted	
7	Rehabilitation Any disturbance as a result of activities under this lease must be rehabilitated to the satisfaction of the Director-General.	Duralie Mine MOP and Amendments	Noted	Duralie Coal report s annually on the status of rehabilitation and the proposed rehabilitation plan for the next 12 months.
	Subsidence Management			
8	(a) The lease holder shall prepare a Subsidence Management Plan prior to commencing any underground mining operations which will potentially lead to subsidence of the land surface. (b) Underground mining operations which will potentially lead to subsidence include secondary extraction panels such as longwalls or miniwalls, associated first workings (gateroads, installation roads and associated main headings, etc), and pillar extractions, and are otherwise defined by the Applications for Subsidence Management Approvals guidelines (EDG17). (c) The lease holder must not commence or undertake underground mining operations that will potentially lead to subsidence other than in accordance with a Subsidence Management Plan approved by the Director-General, an approval under the Coal Mine Health & Safety Act 2002, or the document New Subsidence Management Plan Approval Process — Transitional Provisions (EDP09). (d) Subsidence Management Plans are to be prepared in accordance with the Guideline for Applications for Subsidence Management Approvals. (e) Subsidence Management Plans as approved shall form part of the Mining Operations Plan required under Condition 3 and will be subject to the Environmental Management Report process as set out under Condition The SMP is also subject to the requirements for subsidence monitoring and reporting set out in the document New Approval Process for Management of Coal Mining Subsidence - Policy	Applications for Subsidence Management Approvals guidelines (EDG17) New Subsidence Management Plan Approval Process — Transitional Provisions (EDP09) Guideline for Applications for Subsidence Management Approvals New Approval Process for Management of Coal Mining Subsidence - Policy	NA	There is no underground mining currently undertaken at the Duralie Mine.
9	Working Requirement The lease holder must:		Noted	

	<p>(a) ensure that at least eight (8) competent people are efficiently employed in relation to the mining process or mining operations on the lease area</p> <p>OR</p> <p>(b) expend on operations carried out in the course of prospecting or mining the lease area, an amount of not less than \$140,000 per annum whilst the lease is in force. The Minister may at any time or times, by instrument in writing served on the lease holder, increase or decrease the expenditure required or the number of people to be employed</p>																																
10	<p>Blasting</p> <p>(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, Climate Change and Water.</p> <p>(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, Climate Change and Water.</p>			<p>Ground Vibration No vibration over 5mm/s has occurred at any site from the Duralie blasts between 2007 and 2011.</p> <p>Airblast Overpressure The Shultz, Bailey, Hattam and Holmes properties have been purchased by Duralie Coal. Relocation of the blast monitors to privately owned properties to address this condition has been submitted to OEH for a Variation of the EPL condition M9.1 nominated sites.</p> <table border="1"> <thead> <tr> <th rowspan="2">Date</th><th colspan="2">Airblast Overpressure</th><th colspan="2">Vibration</th></tr> <tr> <th>>115dB</th><th>>120dB</th><th>>5mm/s</th><th>>10mm/s</th></tr> </thead> <tbody> <tr> <td>9/10-8/11</td><td>7 (ex-Hattam)</td><td>0</td><td>3 (ex-Hattam)</td><td>0</td></tr> <tr> <td>9/09-8/10</td><td>8 (ex-Hattam)</td><td>2 (1 ex-Holmes 131.8 and Hattam 120.3dB)</td><td>1 Hattam 5.9mm/s</td><td>0</td></tr> <tr> <td>9/08-8/09</td><td>1 (2 ex-Holmes and 1 Doherty)</td><td>2(ex-Holmes 122.4 and 121.1dB)</td><td>0</td><td>0</td></tr> <tr> <td>9/07-8/09</td><td>1 (Holmes 120.9dB)</td><td>1 (Holmes 120.9dB)</td><td>0</td><td>0</td></tr> </tbody> </table> <p>Blast overpressure exceeding 120dB has only occurred at mine owned premises.</p>	Date	Airblast Overpressure		Vibration		>115dB	>120dB	>5mm/s	>10mm/s	9/10-8/11	7 (ex-Hattam)	0	3 (ex-Hattam)	0	9/09-8/10	8 (ex-Hattam)	2 (1 ex-Holmes 131.8 and Hattam 120.3dB)	1 Hattam 5.9mm/s	0	9/08-8/09	1 (2 ex-Holmes and 1 Doherty)	2(ex-Holmes 122.4 and 121.1dB)	0	0	9/07-8/09	1 (Holmes 120.9dB)	1 (Holmes 120.9dB)	0	0
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11	<p>Safety Operations must be carried out in a manner that ensures the safety of persons or stock in the vicinity of the operations. All drill holes shafts and excavations must be appropriately protected, to the satisfaction of the Director-General, to ensure that access to them by persons and stock is restricted. Abandoned shafts and excavations opened up or used by the lease holder must be notified in writing to the Department and filled in or otherwise rendered safe to a standard acceptable to the Director-General</p>		Noted																														
12	<p>Prevention of soil erosion and pollution Prospecting operations must be carried out in a manner that does not</p>	Exploration Licence 311 and 315 Audit , Trevor Brown & Associates,	C	Exploration activities conducted on behalf of Duralie Coal have been conducted in compliance with the																													

	cause or aggravate air pollution, water (including groundwater) pollution, soil contamination or erosion, unless otherwise authorised by a relevant approval, and in accordance with an accepted Mining Operations Plan	October 2011		exploration Licence conditions.
13	Transmission lines, Communication lines and Pipelines 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 stipulated.		Noted	
14	Roads and Tracks (a) The lease holder must pay to the relevant roads authority in control of the road or track the reasonable costs incurred by the roads authority in making good any damage to roads or tracks caused by operations carried out under this lease less any amount paid or payable from the Mine Subsidence Compensation Fund. (b) During wet weather the use of any road or track must be restricted so as to prevent damage to the road or track. (c) Existing access tracks should be used for all operations where reasonably practicable. New access tracks must be kept to a minimum and be positioned in order to minimise damage to the land, watercourses or vegetation. (d) Temporary access tracks must be rehabilitated and revegetated to the satisfaction of the Director-General as soon as reasonably practicable after they are no longer required under this lease	Project Approval – Duralie Extension Project, Application No. 08-0203, dated 26 Nov 2010	Noted	Contributions to the Great Lakes Council and Gloucester Shire Council have been made in accordance with the requirements of the conditions of approval schedule 2 numbers 16 and 17 issued by the Minister for Planning in Project Approval granted on 26 November 2010.
15	Trees and Vegetation (a) The lease holder must not fell trees, strip bark or cut timber on any land subject of this lease without the consent of the landholder who is entitled to the use of the timber. (b) The lease holder must contact Forests NSW and obtain any required permit, licence or approval before taking timber from any Crown land within the lease area. <i>Note: Any clearing not authorised under the Act must comply with the requirements of the Native Vegetation Act 2003. Any clearing or taking of timber on Crown land is subject to the requirements of the Forestry Act 1916.</i>	Vegetation Clearance Protocol, Sep 2002	C	Any vegetation clearance on the Duralie Mine site is conducted under the Duralie Coal Vegetation Clearance Protocol. The protocol requires assessment of any area to be cleared for threatened flora and fauna and sign-off by the Environment Manager.
17	Resource Recovery (a) Notwithstanding any description of mining methods and their sequence or of proposed resource recovery contained within the Mining Operations Plan, if at any time the Director-General is of the opinion that minerals which the lease entitles the lease holder to mine and which are economically recoverable at the time are not being recovered from the lease area, or that any such minerals which are being recovered are not being recovered to the extent which should be economically possible or which for environmental reasons are necessary to be recovered, notice in writing to the lease holder may be given requiring the holder to recover such minerals.		Noted	DCPL exploration activities located immediately adjacent to Mining Lease 1427 commenced in July 2008. This exploration focused on delineating the Weismantel and Clareval seams in the North West Duralie area and data obtained was utilised for mine planning as part of the Environmental Assessment (EA) for the Duralie Extension Project (DEP). Under the Project Approval 26 November 2010 mining of coal is permissible until 31 December 2021.

	<p>(b) The notice shall specify the minerals to be recovered and the extent to which they are to be recovered, or the objectives in regard to resource recovery, but shall not specify the processes the lease holder shall use to achieve the specified recovery.</p> <p>(c) The lease holder must, when requested by the Director-General, provide such information as the Director-General may specify about the recovery of the mineral resources of the lease area</p>			<p>Mining losses and dilutions are expected to be minimal due to relatively simple geological structure, the thickness of the seam (10-12m normal thickness) and the bulk nature of the mining operation. The long term trend of coal losses of less than 2% and dilutions of less than 5% is expected to continue.</p>
18	<p>Indemnity The lease holder must indemnify and keep indemnified the Crown from and against all actions, suits, claims and demands of whatsoever nature and all costs, charges and expenses which may be brought against the lease holder or which the lease holder may incur in respect of any accident or injury to any person or property which may arise out of the construction, maintenance or working of any workings now existing or to be made by the lease holder within the lease area or in connection with any of the operations notwithstanding that all other conditions of this lease shall in all respects have been observed by the lease holder or that any such accident or injury shall arise from any act or thing which the lease holder may be licensed or compelled to do</p>		Noted	
19	<p>Security A security in the sum of \$500,000 must be given and maintained with the Minister by the lease holder for the purpose of ensuring the fulfilment by the lease holder of obligations under this lease.</p>	Letter re Rehabilitation Security Deposit, 20 Dec 2010	C	The Summary Rehabilitation Cost Calculation submitted to DII on 20 December 2010 was for \$3,938,170.62 based on the anticipated mining disturbance as at June 2013 proposed in the MOP.
23	<p>Suspension of Mining Operations The holder of a mining lease may not suspend mining operations in the mining area other than in accordance with the consent of the Minister.</p>		Noted	
24	<p>Cooperation Agreement The lease holder must make every reasonable attempt, and be able to demonstrate their attempts, to enter into a cooperation agreement with the holder(s) of any overlapping title(s). The cooperation agreement should address but not be limited to issues such as:</p> <ul style="list-style-type: none"> • access arrangements • operational interaction procedures • dispute resolution • information exchange • well location • timing of drilling • potential resource extraction conflicts and • rehabilitation issues. 		Noted	