



# Final Report

## Independent Environmental Audit: Tarrawonga Coal Mine, Boggabri, NSW

MAY 2009

Prepared for  
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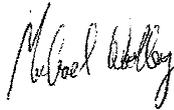


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## Introduction

### 1.1 Background

URS Australia Pty Ltd (URS) was engaged by Tarrawonga Coal Pty Ltd to undertake an independent environmental audit of the open cut coal mining operation at Tarrawonga Coal mine, in Boggabri, NSW.

Tarrawonga Coal are required to undertake an independent environmental audit against the requirements of DA 88-4-2005 (dated 9 November 2005), within three years of commencing the development and every three years thereafter. The audit is necessary to meet the requirements of DA 88-4-2005 Schedule 6, D Condition of Consent No. 6).

The audit has been completed according to the Condition of Consent (CoC) No.6 requirements as detailed in URS' proposal dated 11 November 2008 (Ref: Env\_415) and as described in Section 1.3 below.

This is the first independent audit to be undertaken at Tarrawonga Coal mine and is for the period 9 November 2005 (date the consent was issued) to 26 March 2009 (the date of the site visit as part of this audit). This report presents the findings of the audit.

A review of environmental monitoring data has generally been limited to that undertaken between May 2007 (commencement of most recent Annual Environmental Management Report reporting period) to March 2009 (the date of the site visit as part of this audit). This timeframe is considered by URS to be indicative of current site operations.

### 1.2 Scope of Work

The audit was conducted in accordance with the requirements set out in the DA 88-4-2005 Schedule 6 Condition No. 6, which required the following be undertaken:

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*“Within 3 years of commencement of development, and every three years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the Development. This audit must:*

- a) be conducted by a suitably qualified, experienced and independent person whose appointment has been endorsed by the Director-General;*
  - b) be consistent with ISO 19011:2002- Guidelines for Quality and/or Environmental Systems Auditing or the equivalent updated version of these guidelines;*
  - c) assess the environmental performance of the development, and its effects on the surrounding environment;*
  - d) assess whether the development is complying with the relevant standards, performance measures, and statutory requirements;*
  - e) review the adequacy of the Applicant's Environmental Management Strategy and Environmental Monitoring Program; and*
  - f) if necessary, recommend measures or actions to improve the environmental performance of the development, and/or the environmental management and monitoring systems.”*
-

## 1 Introduction

### 1.3 Audit Methodology

The audit methodology comprised:

- a site inspection and interviews with key site personnel nominated by Tarrawonga Coal, on 25 and 26 March 2009;
- review of relevant documentation provided by Tarrawonga Coal;
- submission of a Draft Report to Tarrawonga Coal outlining the audit finding; and
- submission of a Final Report to Tarrawonga Coal following comments made by Tarrawonga Coal on the draft.

### 1.4 Personnel and Timing

Michael Woolley, Principal Environmental Engineer and Helen Pieris, Senior Environmental Scientist, both with URS Australia Pty Ltd (URS), were approved as auditors by the DoP and conducted the audit.

Site visits for the audit were conducted at Tarrawonga Coal open cut operations on 25 and 26 March 2009.

Michael is registered by RABQSA as a Certified Lead Auditor for Environmental Management, Site Contamination Assessment and Compliance Auditing.

Personnel interviewed comprised:

- Danny Young, Whitehaven Environmental Manager - Whitehaven Coal Mining Pty Ltd; and
- Jason Conomos, Project Manager - Tarrawonga Coal Pty Ltd.

### 1.5 Format of Report

The format of this report is as follows:

- Section 1 is introductory and defines the scope and nature of the audit;
- Section 2 describes the Tarrawonga Coal operations as observed during the site inspection;
- Section 3 provides an update on the outcomes of the DoP's site inspection (on 30 January 2008) and provides a review of the implementation of subsequent action plans issued by Tarrawonga Coal to the DoP;
- Section 4 provides an assessment of the environmental performance of the development and its effects on the surrounding environment;
- Section 5 provides an assessment against the relevant standards, performance measures and statutory requirements. Where findings were found to be in non-compliance, these results have been summarised in this Section (Appendix A provides the results of the assessment against the Conditions of Consent); and
- Section 6 provides a review of the adequacy of the Environmental Management Strategy and Environmental Monitoring Program.
- Recommended measures or actions to improve the environmental performance of the development, and/or the environmental management and monitoring systems are provided in Sections 3 to 5 above.

## Overview of Operations at Tarrawonga Coal Mine

This section provides a brief overview of the operations undertaken at Tarrawonga Coal mine.

### 2.1 Site Description and Development

The Tarrawonga Coal mine is located within Narrabri Shire, approximately 15 kilometres (km) north east of Boggabri town centre and 10 km north of the Whitehaven mine in central northern New South Wales (NSW). The mine lies within a 726 hectare (ha) area covered by Mining Lease 1579 (ML 1579).

Tarrawonga Coal Pty Ltd is a joint venture between Whitehaven Coal Mining Pty Ltd (70%) and Idemitsu Boggabri Coal Ltd (IBC) (30%).

The Department of Planning (DoP) provided approval to the development via Development Consent (DA-88-4-2005) on the 9<sup>th</sup> November 2005. The development consent provided for the extraction of approximately 12.4 million tonnes of Run of Mine (ROM) coal, at a maximum rate of 2 million tonnes per year.

The current Mining Operations Plan (MOP) is of 6 years duration and commenced on the 1 May 2006 for the period 1 May 2006 to 1 February 2012.

Operations at the open cut mine site include:

- vegetation removal;
- separation of topsoil and subsoil;
- removal of friable overburden by scraper ;
- drilling and blasting competent overburden;
- removal of overburden and interburden by bulldozers, excavators and dump trucks;
- coal extraction by excavator loading into haul trucks for transport to the ROM stockpile;
- coal crushing to <200 mm; and
- coal transport to the Whitehaven Coal Handling and Preparation Plant.

The Environment Protection Licence for the mine (No. 12365, anniversary date 9 January, review date 9 January 2009) was issued by the NSW Department of Environment and Climate Change (DECC) to Tarrawonga Coal for the following fee based activity:

- Coal mining (>500,000 – 2,000,000 T).



## Review of Implementation of Action Plans

This Section provides a review of the implementation of actions identified in Tarrawonga's action plans to address issues identified by the Department of Planning (DoP) and the Department of Primary Industries (DPI).

### 3.1 Summary of History of Communication With DPI and DoP (August 2007 to August 2008)

An Annual Environmental Inspection by DPI was held on site at Tarrawonga Coal on 29 August 2007 to review compliance with environmental requirements and relevant approval instruments including the Mining Lease, MOP and the Annual Environmental Management Report (AEMR). During this inspection DPI reported that there was general compliance with the relevant statutory approval instruments administered by DPI and the DPI commended Tarrawonga Coal on the AEMR, the figure depicting the coal movement and production summary and housekeeping at the hydrocarbon storage area.

During the inspection there were several issues outlined that required reporting in the 2007-2008 AEMR. In addition discussions were held on design of the overburden emplacement drop structures. The DPI recommended that the design and flow velocity of the drain be reviewed.

The DoP provided a written response to the 2006-2007 AEMR dated 30 July 2007 commending Tarrawonga Coal on an excellent first time AEMR. The DoP noted two issues requiring attention comprising the release of water with high sediment levels in March 2007 and a note that daily meteorological data is not required to be provided in future AEMRs.

The second Annual Environmental Inspection by the DPI was held on the 17 June 2008. During this inspection the DPI reported that there was general compliance with the statutory instruments administered by the DPI. Discussions were held on the design of the overburden emplacement areas contour drop structures and the requirement to key the water flow into the sediment dam. Several issues were outlined that required reporting in the 2008-2009 AEMR.

The DoP provided a written response to the 2007-2008 AEMR dated 18 August 2008. The DoP was satisfied that the AEMR provides a good summary of the mine's performance over the last year however noted some issues requiring attention. The DoP undertook an audit of the Tarrawonga Coal mine on the 30 January 2008. The audit was undertaken specifically to evaluate compliance of the mine's operations against the Development Consent Conditions (DA-88-4-2005) determined on the 9 November 2005. On the 14 February 2008, Tarrawonga Coal received formal advice from the DoP in relation to the outcomes from the audit inspection. The advice from the DoP identified areas of non compliance as well as opportunities for improvement. The DoP requested a response to the formal advice which was to include an action plan to address the inspection findings. Tarrawonga Coal responded to the DoP and provided an action plan by letter dated 28 February 2008.

### 3.2 Review of Implementation of Action Plans

The following table summarises the issues/observations identified by the DoP and the DPI, the actions taken by Tarrawonga Coal to address the issues/observations identified, a review of the implementation of the actions by URS, and recommendations provided where URS considered the actions still had not addressed the issues raised. The issues identified are provided in date order in Table 3-1 below.



### 3 Review of Implementation of Action Plans

Table 3-1 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
A1	Department of Primary Industries - Mineral Resources (DPI) AEMR review and annual environmental inspection 14 July 2008	Tarrawonga and Boggabri Mines to complete a review to understand the cumulative impacts of the two sites incorporating the environmental and meteorological data.	Response to be documented in 2008-2009 AEMR.	Tarrawonga Coal reported that it resumed monthly meetings with Boggabri Coal to discuss the cumulative impacts of the two sites Minutes were observed for a meeting held on the 16 December 2008. Items discussed included proposed expansions, dust monitoring, blasting and lighting. <b>URS recommendation:</b> It is recommended these meetings continue and minutes are retained on file.
A2	DPI 14 July 2008	Provide DECC, DPI and DWE a copy of the current Water Management Plan as well as the Water Management Plan that is currently being reviewed for submission for DoP approval.	Response to be documented in 2008-2009 AEMR.	Evidence was not available to demonstrate that the current Site Water Management Plan (Rev 1 dated August 2007) was submitted to the DECC, DPI and DWE. Further amendments to the Site Water Management Plan are required to reflect current storage dams and revised water balance. <b>URS recommendation:</b> It is recommended the Plan is amended and provided to the DECC, DPI, DWE and DoP.
A3	DPI 14 July 2008	The AEMR Plans are to show proposed activities for the next period.	Response to be documented in 2008-2009 AEMR.	To be checked in future AEMRs.

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
A4	DPI 14 July 2008	Complete a full review and provide a justification to DoP, DPI and DECC that a noise bund is not required.	Response to be documented in 2008-2009 AEMR.	<p>Tarrawonga Coal submitted a revised Noise Monitoring Plan to the DoP and DECC which was accompanied by a report from Spectrum Acoustics (dated 24 June 2008). The Spectrum report included results of modelling to predict noise levels at receivers to the south of the site if the 15m acoustic bund recommended in the project EA was not constructed. The results indicated the criteria would not be exceeded at the nearest receivers.</p> <p>The DoP was "not convinced" with the predictions and referred the report to a noise expert for review (email from Colin Phillips of the DoP to Danny Young dated 9 December 2008).</p> <p>Following the technical review the DoP outlined in an email dated 23 December 2008 (which also included a copy of the technical review) that it believes the company has a continuing obligation under the consent to construct the noise bund and a request to change this obligation would require a modification to the consent. The DoP indicated that the existing noise assessment was not sufficient to support such an application.</p> <p>Tarrawonga Coal reported that it is in the process of addressing the DoP comments on the noise assessment.</p>
A5	DPI 14 July 2008	Review options to enhance the visual screening along Goonbri Road.	Response to be documented in 2008-2009 AEMR.	To be checked in future AEMRs.
A6	DPI 14 July 2008	When reporting on site water discharges, Tarrawonga is to compare the discharges against decile measurements to demonstrate the quantity of the rainfall and discharge event.	Response to be documented in 2008-2009 AEMR.	To be checked in future AEMRs.

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
A7	DPI 14 July 2008	Tarrawonga are to notify DECC when a neighbouring property is purchased.	Response to be documented in 2008-2009 AEMR.	Noted.
A8	DPI 14 July 2008	Provide DECC with a justification for the changes to the unattended noise monitoring program.	Response to be documented in 2008-2009 AEMR.	An email was observed from Jessica Barnes of the DECC to Danny Young of Tarrawonga Coal dated 3 September 2008 stating that the DECC is happy for unattended noise monitoring to be removed from the licence along with attended monitoring at Bollol Creek and Templemore. Licence variation dated 10 November 2008 removed the requirement for unattended monitoring.
A9	DPI 14 July 2008	Provide DECC and DPI with the MW3 data.	Tarrawonga Coal has requested that Indemitsu Boggabri Coal provide the annual monitoring data for MW3 for inclusion in the 2008-2009 AEMR which is currently being produced.	To be checked in future AEMRs.
A10	DPI 14 July 2008	The soil stockpiles adjacent to the Southern Emplacement are currently higher than 2 metres as committed in the MOP.	Tarrawonga Coal indicated that discussions were held with the DPI on this matter at the last AEMR review where it was pointed out that the existing stockpile areas marked on the MOP were insufficient to cater for the quantity of material resulting in marginally higher stockpiles. The previous year a verbal ok was given to higher stockpiles on the western boundary for the same reason.  Due to the progressive rehabilitation of the southern dump, the topsoil will be stockpiled at a greater height but for a shorter period of time limiting the effect on soil structure.	At the time of the audit site inspection the topsoil stockpile from the southern dump was being utilized by scrapers and was yet to be seeded. It was reported that there were plans to seed the topsoil stockpile in early April 2009.  To be checked in future audits.

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
A11	DPI 14 July 2008	Submit a licence variation to the DECC for the Southern Emplacement Discharge Point.	Response to be documented in 2008-2009 AEMR.	Tarrawonga Coal reported that it is in the process of getting some redesign works done by the Soil Services with regard to drainage of the south waste emplacement and subsequent direction of flows which will be incorporated into a new site Water Management Plan which will be forwarded to the DECC for its review. In the meantime a licence variation application was submitted changing the discharge point from SD16 (not yet constructed) to the existing SD14 with the intention that upon construction of the new storage on the southern side a new variation would be submitted. URS observed an email to Jessica Barnes of the DECC from Danny Young dated 3 September 2008 outlining above approach. Licence variation dated 10 November 2008 changed discharge point SD16 to SD14.
B1	Department of Planning (DoP) audit 30 Feb 2008	<u>Finding of Non compliance</u> Exceedance of TSS limit on 1 March 2007.	Tarrawonga Coal will continue to monitor storage dam levels at discharge points and direct pumping from those storages direct to water carts or back through the sediment basin system to bring storage dam levels down. Tarrawonga Coal will continue to undertake quarterly surface water samples from storage dams to assess levels of TSS to determine if additional actions are required to assist in the sediment settling process.	Since the exceedance of the TSS limit in March 2007 there have additional exceedances of the TSS criteria notably in January and February 2008. Refer to issue C1 below.

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B2	DoP 30 Feb 2008	<p><u>Finding of Non compliance</u> Exceedance of noise limit on 11 July 2007 and 25 September 2007 at Pine Grove.</p>	<p>Advice from Spectrum Acoustics indicated that the cause of these exceedances at the Pine Grove residence was related to conditions at the time (-4 degrees with relative humidity at a maximum and frost cover on the ground which is conducive to a worst case scenario for noise propagation) and trucks crossing the cattle grid. Subsequent to this noise monitoring event, the cattle grids on the private haul roads at both the Pine Grove and Ambardo end have been removed.</p>	<p>Monitoring results since September 2007 continue to show exceedances with noise criteria at the Pine Grove and Ambardo properties. Noise levels are attributed to truck movements along the haul route. In response Tarrawonga Coal have undertaken the following activities:</p> <ul style="list-style-type: none"> <li>- removal of the cattlegrid;</li> <li>- commencement of new policy with Toll (haulage contractor) to delay commencement of morning shift operations until 6:45am;</li> <li>- ceasing of early morning short haul operation from Tarrawonga to the Canyon Site reducing number of trucks on the haul road by five;</li> </ul> <p>In addition to the above, a representative from Toll attended the CCC meeting on the 18 February 2009 to discuss community concerns related to haulage trucks. During this meeting it was advised that Toll would trial running several empty trucks back to Tarrawonga by 10pm to park up on site for loading the next morning with the aim of reducing the number of trucks running to site in the morning and the associated noise impact.</p> <p><b>URS Recommendation:</b> It is recommended Tarrawonga Coal continue to monitor noise levels and implement actions to mitigate exceedances as necessary.</p>

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B3	DoP 30 Feb 2008	<u>Finding of Non compliance</u> No evidence that $L_{Amax}$ , $L_{A1}$ , $L_{A90}$ , $L_{Amin}$ are measured. Are these measured?	Review of unattended monitoring reports confirms measurements at the above criteria. To date only the data relevant to the $L_{Aeq}$ limits specified in the consent have been tabulated. Tarrawonga Coal will discuss with the acoustical consultant the provision of all data in future reports.	The unattended monitoring reports present the $L_{Amax}$ , $L_{A1}$ , $L_{A90}$ , $L_{Amin}$ monitoring results as charts in Appendix A. <b>URS Recommendation:</b> The requirement for unattended monitoring has recently been removed from the EPL therefore it is recommended the $L_{Amax}$ , $L_{A1}$ , $L_{A90}$ , $L_{Amin}$ are included in the attended monitoring program.
B4	DoP 30 Feb 2008	<u>Finding of Non compliance</u> There was no temperature sensor at 10 m at the meteorological monitoring station.	Carbon Based Environmental Pty Ltd has been engaged to supply and fit temperature sensors (10m) on all our meteorological monitoring stations. This will take place over the next 1-2 months.	It was reported that a new temperature sensor was installed at 10 meters in March 2008.

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B5	DoP 30 Feb 2008	<p><u>Finding of Non compliance</u></p> <p>There was no evidence that the following were sent to Council and they were not on the mine's website: Groundwater Contingency Plan, Flora and Fauna Management Plan, Bushfire Management Plan. Also the 2006-2007 AEMR was not on the mine's web site.</p>	<p>The 2006-2007 AEMR has been placed on the website. Action will proceed over the next month to provide copies of the Groundwater Contingency Plan, Flora and Fauna Management Plan and Bushfire Management Plan to Gunnedah and Narrabri Shire Council's, as well as post these documents on the website.</p>	<p>Letters were available on file to show that the 2006-2007 AEMR was sent to Gunnedah and Narrabri Shire Council (13 July 2007) and that the Bushfire Management Plan was provided to Narrabri Shire Council (14 August 2006). Evidence that the Groundwater Contingency Plan and Flora and Fauna Management Plan were provided to Council was not available.</p> <p>At the time of the audit the 2006-2007 AEMR and the Flora and Fauna Management Plan were available on the Company's website. The following however were not available on the website:</p> <ul style="list-style-type: none"> <li>- 2007-2008 AEMR</li> <li>- Environmental Monitoring Program</li> <li>- Bushfire Management Plan</li> <li>- Groundwater Contingency Plan</li> </ul> <p><b>URS recommendation:</b> It is recommended that Tarrawonga Coal provide Council with the Groundwater Contingency Plan and the Flora and Fauna Management Plan.</p> <p><b>URS recommendation:</b> It is recommended that the website is updated to include a copy of the plans and reports listed above that are currently not available as well as any plans that have been amended since they were originally posted on the website.</p>

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B6	DoP 30 Feb 2008	<u>Finding of Non compliance</u> Since March 2007, there was no evidence that a copy of the minutes of each CCC meeting had been sent to the DoP within a month of the meeting.	Copies of the meeting minutes that had not been forwarded were provided subsequent to the inspection.	It is reported that CCC minutes are provided to the DoP. Cover letters were observed dated 16 June 2008 and 29 December 2008 enclosing the minutes from the CCC meetings held on the 7 February 2008, 8 May 2008, 6 August 2008 and 12 November 2008.
B7	DoP 30 Feb 2008	<u>Improvement Opportunity</u> Recommended that water storages SB7 and SD 17 (which discharge to the environment) are drawn down as soon as possible to avoid discharge of sediment laden stormwater in the event of heavy rainfall.	Tarrawonga Coal monitors water levels in storages to avoid discharge and enable re-use back onto the mine site. The main source of discharge from the site has been associated with SD17 on the western boundary. This storage has graded access and a pump for direct filling of water carts. Water from this storage has also been pumped back up the sediment basin system within the mining lease to ensure appropriate capture and settling of sediment and re-use of water on the site.	During the site inspection the water cart was observed to be drawing water from SD 17 for use in dust suppression.

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B8	DoP 30 Feb 2008	<p><u>Improvement Opportunity</u></p> <p>Evidence that major stormwater drain on emplacement area had eroded in recent heavy rainfall. Since that time the steep drain had been regarded and rock retaining walls built across it. It is agreed that there is a need to improve the erosion and sediment control measures associated with this drain.</p>	<p>Initially as a trial to avoid significant aesthetic impacts, a series of rock walls were placed within the waterway to aid in reducing velocity of flows. The area was seeded to promote establishment of cover crop. Due to significant storm events, substantial water entered the waterway prior to groundcover getting established, thereby resulting in substantial erosion. As a consequence, Tarrawonga Coal has now removed 600 mm of subsoil and topsoil from the waterway for the placement of rock for the full length of the structure. Rock lining will be completed by the end of March 2008. In addition to rock lining, the waterway will again be seeded to promote groundcover establishment in spaces between rock in an attempt to reduce visual impact.</p>	<p>At the time of the site inspection the rock lined waterway had been completed and grasses observed to have been established in between rock spaces.</p>
B9	DoP 30 Feb 2008	<p><u>Improvement Opportunity</u></p> <p>Road surface breaking up at the intersection of the haul route with the Kamilaroi Highway. It is recommended that representation be made to Gunnedah Council to rectify the situation.</p>	<p>A maintenance agreement is in place with Gunnedah Shire Council in relation to road maintenance on public roads utilised by mine associated vehicles. This arrangement is on the basis that Whitehaven provide a financial contribution to Council on an agreed basis for ongoing works. Whitehaven will continue to liaise with Gunnedah Shire Council in relation to required road works to ensure roads are maintained in a safe and trafficable condition.</p>	<p>The Road Maintenance Agreement between Whitehaven Coal Mining Pty and Gunnedah Shire Council dated 21 December 2005 was observed. The Agreement states that Council is responsible for determining the level of routine maintenance required and performing the maintenance and that Whitehaven Coal will be invoiced for their contribution to the maintenance work performed.</p>

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B10	DoP 30 Feb 2008	<u>Improvement Opportunity</u> Although the diesel fuel tanks were included in the bunded area, the refuelling hoses were not bunded.	The Tarrawonga Fuel tanks are above ground and self bunded to 110% capacity of the tanks. In addition to this, a concrete bund is provided adjacent to the fuel tanks for storage of oils/lubes, with drainage from this bund reporting back to a central sump and run through an oil separator unit. The fuel filling rig that fills the fuel tanks parks alongside the fuel tank area which is outside the concrete bund. The risk of significant spill during the fuel transfer process is considered minimal and controllable by operator cut off to the refuel process in the event of a connection or hose leakage. Tarrawonga Coal will continue to monitor this procedure as part of the daily management of the fuel farm area.	At the time of the audit site inspection some localised staining was observed in the gravel and soil in the vicinity of the fuel tanks. Following the inspection in mid April 2009 a concrete apron was established at the Tarrawonga fuel farm to catch drips from the fuel fill point. This new work was not assessed by URS. To be checked in future audits.
B11	DoP 30 Feb 2008	<u>Improvement Opportunity</u> Although an amended Site Water Management Plan has been approved by the DoP (17 October 2007), the version on the website has not been updated.	The amended Site Water Management Plan will be posted on the website within the next month.	At the time of the audit the amended Site Water Management Plan was yet to be posted on the website. It was reported that the Plan was in the process of being further amended to reflect current storage dams and revised water balance and that once these amendments were complete the Plan would be submitted to the relevant authorities and uploaded onto the website. <b>URS recommendation:</b> Include current Site Water Management Plan on website. Establish a process for ensuring revised plans are uploaded onto the website.
B12	DoP 30 Feb 2008	<u>Improvement Opportunity</u> It is noted that the LDP1 in the EPL should be changed from SD2 to SD17.	This issue has been addressed with the DECC and a licence variation correcting this anomaly is pending.	This was amended by Licence Variation dated 25 February 2008.

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B13	DoP 30 Feb 2008	<u>Improvement Opportunity</u> According to the groundwater monitoring site MW2 is at Thuin, whereas according to the EPL it is at Bollo Creek Station.	The original EIS for the Tarrawonga Project identified MW2 as being at the Bollo Creek Station property which would have formed the basis for the initial EPL. The subsequent approved SWMP has MW2 located on the Templemore property which was a transcription error as the coordinates of the actual bore are within the Thuin property but immediately adjacent to the Templemore boundary. Whilst the property description for the monitoring point varies from the EPL, the ongoing monitoring remains relevant to the groundwater outcomes. Tarrawonga will seek advice from DECC as to their requirements in relation to this anomaly in due course.	Noted. Issue to be addressed with the DECC.
B14	DoP 30 Feb 2008	<u>Improvement Opportunity</u> Lead was not reported in the monitoring results in the 2006-2007 AEMR or the Environmental Monitoring Reports, although it was included in the mine's groundwater monitoring spreadsheet.	The omission of lead results from these results was an oversight. Lead levels form part of the 6 monthly analysis of groundwater quality and will be included in future AEMR's and monitoring results reports.	Tarrawonga Coal indicated it does not intend to include the full suite of analytical results (conducted on a six monthly basis) in the environmental monitoring reports provided to the CCC as it creates significant quantities of data and makes the reports less user friendly. It was reported that the full groundwater monitoring report as produced by the consultant is made available to the CCC members should they wish to see it. Tarrawonga intends to include the results in the AEMRs. To be checked in Future AEMRs.

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B15	DoP 30 Feb 2008	<u>Improvement Opportunity</u> PM <sub>10</sub> measurements are joined in a line graph in the 2006-2007 AEMR. These should be plotted as daily bar graphs as it is not advisable to interpolate PM <sub>10</sub> readings between monitored values.	The use of line based graphs has not been raised as an issue by other agencies in the review of the AEMR. However future AEMR's will include the PM10 data as a bar graph to avoid inadvertent interpolation of results.	Noted. To be checked in future AEMRs.
C1	DoP 2007-2008 AEMR comments 18 Aug 2008	Discharges on the 17 January and 6 February 2008 had high TSS levels. The DoP will continue to review the mine's monitoring data and will consider the full range of remedies available should water discharge quality criteria again be exceeded.	Response to be documented in 2008-2009 AEMR.	Since the discharges noted on the 17 January and 6 February 2008 there has been one additional discharge on the 7 October 2008 which exceeded the TSS and pH limit. It was reported that the event followed 39 mm of rainfall on the 6 October 2008 and whilst water was discharged from the dam it pooled at the lease boundary and did not leave the site. It was reported that pump outs from the dam in September following 80 mm of rain reduced the potential for significant discharge.
C2	DoP 2007-2008 AEMR comments 18 Aug 2008	The greenhouse gas emissions section of the AEMR does not fulfil the requirements of CoC 51 of Schedule 4 of the mine's consent. This section should include emissions from any purchased electricity, the use of explosives and fugitive emissions from the open cut mining operations as per the <i>National Greenhouse Gas (NGA) Factors January 2008</i> .	Response to be documented in 2008-2009 AEMR.	Noted. To be checked in future AEMRs.
C3	DoP 2007-2008 AEMR comments 18 Aug 2008	The company is required to include a summary of complaints received during the past year and compare this to the complaints received in the previous 5 years in the AEMR. This has not been included in the 2007-2008 AEMR.	Response to be documented in 2008-2009 AEMR.	Noted. To be checked in future AEMRs.

### 3 Review of Implementation of Action Plans

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
C4	DoP 2007-2008 AEMR comments 18 Aug 2008	All quarterly noise monitoring data appended to the AEMR claim that the mine's noise impact assessment criteria must be exceeded by more than 2dB(A) to be considered as non-compliant with the relevant criteria. This does not accurately reflect the wording of the CoC. The DoPs view is that the company would be non complaint should these criteria be systematically exceeded. i.e repeated exceedance of any magnitude is considered to be non compliant, a one-off exceedance is not.	Response to be documented in 2008-2009 AEMR.	Noted.



## Environmental Performance and Effect on Surrounding Environment

This Section fulfils the requirement to assess the environmental performance of the development and its effects on the surrounding environment, as stated in DA 88-4-2005, Schedule 6 Condition No.6:

*“(c) assess the environmental performance of the development, and its effects on the surrounding environment”*

The environmental performance of the development has been undertaken through a review of environmental performance data, such as monitoring results (presented in the 2007 -2008 AEMR and provided for the period since May 2008 to February 2009) and observations made during the site visit on 25 and 26 March 2009.

This section provides a review of the environmental performance through consideration of the following:

- Air quality;
- Community Consultation;
- Erosion and sedimentation;
- Waste;
- Surface water pollution;
- Groundwater;
- Contaminated or polluted land and hydrocarbon contamination;
- Threatened flora and fauna;
- Rehabilitation;
- Weeds;
- Blasting;
- Operational noise;
- Visual/light pollution;
- Aboriginal heritage;
- Natural heritage;
- Spontaneous combustion management; and
- Feral animal control.

### 4.1 Air quality

#### ***Total Suspended Solids (TSP) and Particulate Matter (PM<sub>10</sub>) Monitoring***

The air quality criteria applicable to Tarrawonga Coal are specified in DA 88-4-2005 Schedule 4 Condition No. 1 and summarised below:

- Mean annual TSP concentration – 90 µg/m<sup>3</sup>.
- Mean annual PM<sub>10</sub> particulate level - 30 µg/m<sup>3</sup>.
- 24 hour PM<sub>10</sub> particulate level - 50 µg/m<sup>3</sup>.

PM<sub>10</sub> is monitored by Tarrawonga Coal at the Templemore property (EBA-4). Monitoring is also conducted at the Merriown property (EBA-1 / D7) by Idemitsu Boggabri Coal and the data shared with Tarrawonga Coal. These monitoring points are stipulated in the EPL for the Tarrawonga Coal Mine.

## 4 Environmental Performance and Effect on Surrounding Environment

PM<sub>10</sub> monitoring results at the Templemore property and the Merriown property indicated compliance with the annual average criterion and the 24 hour criterion at both locations for the period June 2006 to February 2009.

The Air Quality Monitoring Plan states that 'No monitoring of TSP is proposed given the relationship between TSP and PM<sub>10</sub> and the preference of the DEC to record PM<sub>10</sub> concentrations'. The Air Quality Monitoring Plan was approved by the DoP by letter dated 16 February 2006.

### *Deposited Dust*

The air quality criteria applicable to Tarrawonga Coal are specified in DA 88-4-2005 Schedule 4 Condition 1 and summarised below:

- Maximum increase in deposited dust -  $2 \text{ g/m}^2/\text{month}$  (annual averaging period).
- Maximum total deposited dust -  $3.6 \text{ g/m}^2/\text{month}$  (annual averaging period).

The site's EPL No. 12365 requires that all operations and activities be carried out in a manner that will minimise the emission of dust from the premises. Trucks transporting coal from the premises must be covered immediately after loading and maintained until immediately before unloading the trucks.

Deposited dust is currently monitored at eight locations by Tarrawonga Coal and at four locations by Idemitsu Boggabri Coal (IBC). Two of these monitoring locations (EB-10 and EB-11) were established in March 2007 in order to improve assessment of cumulative dust impacts. Monitoring was also previously conducted at the Jerralong property (EB-3) but was ceased in January 2009. Monitoring by Tarrawonga Coal at Tarrawonga (EB-7), Thuin (EB-8) and Pine Grove (EB-9) is additional to the monitoring stipulated by the EPL.

URS reviewed deposited dust monitoring results from Tarrawonga Coal and IBC for the period December 2005 to February 2009. The results indicated that whilst some months the total insoluble solids exceeded the goal at some locations the total insoluble solids annual average complied with the total insoluble solids annual average goal of  $4 \text{ g/m}^2/\text{month}$  at all locations with the exception of Forest View (D3) and Jerralong (EB-3).

The total insoluble solids annual average for Jerralong complied with the annual average goal in 2006 and 2007 but slightly exceeded the goal in the 2008 calendar year ( $4.2 \text{ g/m}^2/\text{month}$ ). Monitoring at the Jerralong property ceased in January 2009.

The total insoluble annual average for Forest View exceeded the annual average goal in 2006, 2007 and 2008. The annual average for the 2008 calendar year was  $5.6 \text{ g/m}^2/\text{month}$  and had decreased compared to the previous year. Tarrawonga Coal reported in the 2007-2008 AEMR that the high measured dust levels at this monitoring point are believed to be attributed to the increased truck and semi trailer use of adjacent gravel roads during the wheat harvest. This view was based on a review of wind roses which demonstrated that wind directions are predominantly north west and south east which would limit the contribution of dust loads at that monitor from the Tarrawonga site. An additional monitor was installed in closer proximity to the mine sites and further from the adjacent gravel road. Data from this monitor was not available at the time of the audit. Reference is made to URS' recommendation in Section 5.1.1 under Schedule 4 CoC No. 1.

At the time of the audit site inspection trucks were observed to be covered and water carts were observed to be wetting down internal haul roads to minimise dust impacts. No significant quantities of dust were observed beyond the boundary of the site.

## 4 Environmental Performance and Effect on Surrounding Environment

### *Greenhouse Gas Emissions*

The greenhouse gas requirements applicable to the Tarrawonga Coal are specified in DA 88-8-2005 Schedule 4 Condition No. 51, which requires Tarrawonga Coal to:

- calculate greenhouse gas emissions;
- investigate ways to reduce emissions; and
- present the results in the AEMR.

Greenhouse gas emissions are discussed in the 2007-2008 AEMR. The greenhouse gas emissions considered were from diesel use (both for site electricity through diesel generators and for fuel for transport).

The review of the 2007-2008 AEMR by the DoP identified that other greenhouse gas emissions are not considered including use of explosives and fugitive methane emissions from open cut mining (letter dated 18 August 2008). Reference is made to URS' recommendation in Section 5.1.1 under Schedule 4 CoC No 51.

It was reported that the Whitehaven Coal Group takes part in the Greenhouse Challenge Plus program and are in the process of preparing an action plan for the group as a whole.

## 4.2 Community Consultation

### *Community Consultation Committee*

A Community Consultative Committee (CCC) has been established and is comprised of three representatives from Tarrawonga Coal, one representative from Narrabri Shire Council, one representative from Gunnedah Shire Council and four community members.

CCC meetings have been held at least four times per year as required. Meeting minutes were observed for 1 May 2006 (inaugural meeting), 3 August 2006, 2 November 2006, 1 February 2007, 3 May 2007, 16 August 2007, 1 November 2007, 7 February 2008, 8 May 2008, 6 August 2008, 12 November 2008.

A review of the meeting minutes indicated that environmental performance was discussed during the CCC meetings. An Environmental Monitoring Report summary is presented to the CCC with the preceding three months results. Copies of these reports were observed to accompany all of the CCC meeting minutes.

### *Complaints Management*

Tarrawonga maintains a designated complaints line which is reportedly checked by the Environmental Officer on a daily basis. Details of complaints are recorded on a "Complaints Form". Complaints recorded by Tarrawonga Coal since the previous AEMR (May 2007 – May 2008) include the following:

- 30 October 2008: no noise and dust monitoring data provided to resident and issue of consultants coming onto property without notifying resident. Data provided and contractors advised they must notify resident prior to undertaking monitoring on their property.
- 20 February 2009: Toll trucks travelling to Tarrawonga earlier than previously stated. Arranged for Toll Manager to contact complainant to discuss.
- 23 February 2009: Toll trucks travelling to Tarrawonga earlier than previously stated. Arranged for Toll Manager to contact complainant to discuss.

## 4 Environmental Performance and Effect on Surrounding Environment

- 16 March 2009: Toll trucks travelling to Tarrawonga nose to tail without separation gap as previously stated. Matter raised with Toll Manager.
- 20 March 2009: Toll truck turning into oncoming traffic lane. Issue raised with Toll Manager. New white lanes and rubber stick on pads placed at the intersection as further guide to truck drivers.

Five of the six complaints summarised above were from the same resident and all related to Toll trucks. The Toll Manager attended the CCC meeting on the 18 February 2009 to discuss community concerns related to haulage trucks.

### URS recommendation:

It is recommended that where the follow up action involves other people (eg notifying Toll Manager to contact resident) the final follow up action taken to close out the complaint should also be recorded on the complaints form.

### 4.3 Erosion and sedimentation

Historically the mine site has had issues with sediment and erosion control, specifically relating to a series of drop structures draining contour banks on the western face of the rehabilitated emplacement area. The aforementioned constructed waterway failed in January 2008 following heavy rainfall in December 2007 and January 2008. By March 2008 works had been completed to improve sediment and erosion control measures associated with this waterway. Subsoil and topsoil was removed from the waterway, rock was placed along the full length of the structure and the waterway was seeded to promote groundcover establishment in spaces between the rock. At the time of the audit site inspection the waterway appeared stable and grasses had established in between rock spaces.

Rehabilitation had progressed on the western face with the area reshaped, topsoiled, planted with covercrop and native vegetation seedlings. During the audit site inspection groundcover was observed to have been firmly established minimising erosion and sedimentation from this area.

Works had commenced rehabilitating the southern emplacement area. Covercrop had established in some areas whilst in other areas banks had been seeded but not yet established. Some banks were awaiting to be shaped. While these areas do not have completed contour drains, there is a potential for erosion to occur. The prompt topsoiling/planting and construction of drains will minimise the potential for erosion.

In some places minor cracks and breaks in the contour drains were observed. Tarrawonga Coal indicated that drains are inspected following rainfall events and repairs undertaken as required. It is recommended that this process is formalised and documented.

### URS recommendation:

It is recommended that a formalised system is established and implemented for checking the performance of contour drains and other sediment and erosion control structures following significant rainfall.

### 4.4 Waste

Wastes produced by the open cut coal mining operations include the following:

- general domestic-type and office wastes from on-site buildings and routine maintenance consumables;

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- vehicle/equipment maintenance type wastes including batteries, steel and oils and greases;
- sewage from on-site amenities;
- overburden and interburden;
- mine equipment tyres; and
- coarse and fine coal rejects from any coal preparation undertaken.

A Waste Disposal Register has been developed for tracking waste oil, oil filters, drums, batteries, contaminated rags, used tyres and refrigerant gases. At the time of the audit the only waste recorded in the register was used oil and oil filters.

Waste tracking of general domestic type wastes from on-site buildings is not conducted. It was reported that a recycling program has been established. It would be useful to include volumes or mass of domestic waste recycled and disposed in the Waste Register. It is recommended that a more thorough system of monitoring and recording waste disposal and recycling is implemented. This would enable better investigation of ways to minimise waste generation. Reference is made to URS' recommendation in Section 5.1.1 under Schedule 4 CoC No 52.

During the audit site inspection poor waste management practices were observed at the contractor waste storage area, specifically regarding the storage of waste solvents, hydrocarbons and batteries. General house keeping improvements are recommended in this area. Reference is made to URS' recommendation in Section 5.1.1 under Schedule 4 CoC No 54.

### 4.5 Surface water pollution

Surface water at the site is either directed to 'clean water' storage dams or 'dirty water' sediment basins. Dirty water is captured within two catchments on the mine site ('disturbed areas' and 'open cut' catchments). Sediment basins, storage dams and associated banks and drains were designed and constructed by the Department of Lands – Soil Services personnel.

A brief review of drainage around the ROM and workshop identified that potentially 'dirty' stormwater from these areas discharged to the dirty water sediment basins and clean water was diverted away from the clean water collection areas. Runoff from the concrete vehicle and equipment wash pad and the hydrocarbon storage area bund is directed to an oil water separator and containment system. Waste oil is pumped out and disposed whilst the water is directed to a small dam and used for dust suppression. At the time of the inspection the dam was dry.

The site's Environment Protection Licence (EPL No.12365) lists four wet weather discharge and monitoring points and five additional water quality monitoring points.

During the previous AEMR reporting period from May 2007 to May 2008, suspended solids exceeded the EPL limit (50 mg/L 100 percentile limit) on two occasions (17 January and 6 February 2008). An additional discharge off site was recorded on the 7 October 2008 which exceeded the EPL suspended solids limit and the pH limit (6.5-8.5). No exceedances of the EPL oil and grease limits were recorded.

The 17 January 2008 discharge event occurred following 124.8 mm rain in December 2007 and a further 55.8 mm on rain on the 16<sup>th</sup> and 17<sup>th</sup> January 2008. It was reported to be a minor discharge with the water tending to pool adjacent to the site boundary. A TSS level of 837 mg/L was measured at SD-17. The high sediment load was due to the failure of a recently constructed waterway (series of drop structures draining contour banks) on the western face of the rehabilitated emplacement area.

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A further discharge event occurred on the 6 February 2008 following additional rainfall in February following on from high velocity rainfall in December 2007 and January 2008. Discharges occurred from storage dams SD-9 and SD-17. A TSS level of 476 mg/L was measured at SD-17. The source of the sediment was related to the eroded waterway which could not be quickly repaired after its initial failure (described above) due to the surface being too wet to allow machinery on site.

Following the discharge event in late February and early March 2008, the waterway was re-constructed by removing topsoil and subsoil by scraper and dozer and rock placed in the waterway to provide for full rock lining. The rock lined waterway was completed in mid April with seed and fertiliser spread across the waterway to provide for groundcover establishment between the rocks.

The above discharge events were reported to the DECC by email on the 8 February 2008. A report was also provided dated 7 February 2008 providing additional details of the discharge event. An inspection was undertaken by the DECC on the 1 April 2008. A report was provided to the DECC dated 2 April 2008 outlining the details of the discharge events and the plan for future water management at the site.

One of the actions committed to as a result of this discharge was to conduct a full water balance calculation over the site which would also identify storage capacity against storage requirements at the western end where SD-7 and SD-17 are located. This review was conducted by Department of Lands – Soil Services personnel.

The rock waterway was inspected during the audit inspection. Grass was observed to have grown between the rocks and the waterway appeared to be stable.

A discharge event was recorded on the 7 October 2008. This discharge event followed 39 mm of rainfall on the 6 October 2008 and whilst water was discharged from the dam it was reported that it pooled at the lease boundary and did not leave the site. It was reported that pump outs from the dam in September following 80 mm of rain reduced the potential for significant discharge.

### 4.6 Groundwater

Groundwater monitoring is undertaken at fourteen sites at a series of operating and abandoned bores within ML 1579 and extending to distances of up to 3km from the mining activities. The site's EPL specifies four monitoring locations (MW1 to MW4). Standing water levels are monitored quarterly, electrical conductivity, pH and lead on a six monthly basis and a suite of additional analytes (including metals) on an annual basis.

During the 2007-2008 AEMR reporting period groundwater sampling and analysis was conducted in July 2007 and April 2008. The April 2008 monitoring round was scheduled to take place in January 2008 but was reportedly delayed by difficulties getting a contractor on site. Appendix 5 of the AEMR summarised the groundwater monitoring results obtained since the commencement of mining at the site.

Additional monitoring was conducted at the request of landowners upstream of the mine site along Bollol Creek to determine whether the loss of groundwater in several wells was a result of Tarrawonga Coal Mine activities. The AEMR reported that over the period of monitoring each of Tarrawonga Coal Mine's piezometers and monitoring bores remained relatively constant with pre-mining levels and did not reflect the same level of fluctuation as the additional monitoring wells following significant rainfall events.

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The 2007-2008 AEMR reported that over the reporting period there were only minor fluctuations in chemical parameters and water levels and that total petroleum hydrocarbon concentrations and heavy metal concentrations were consistent with levels identified pre-mining.

DA 88-4-2005 Schedule 4 Condition No. 32 requires that an independent review is undertaken within three years of commencement of the development to assess the results of water monitoring during the reporting period. The review was yet to be undertaken at the time of the audit site inspection however Tarrawonga Coal were in the process of engaging consultants to undertake the review.

### 4.7 Contaminated or polluted land and hydrocarbon contamination

No contaminated land was reported by Tarrawonga Coal to be within the DA area.

At the time of the site visit no significant areas of contamination were observed by URS. However, poor waste hydrocarbon storage was observed at the contractor storage area which is unsealed and localised staining of the gravel and soil was observed in the area surrounding the fuel tanks.

Reference is made to URS' recommendations for compliance with DA 88-4-2005 Schedule 4 Condition No. 54.

### 4.8 Threatened flora and fauna

#### *Flora*

Investigations of the flora within and adjacent to ML 1579 were undertaken by Geoff Cunningham Natural Resource Consultants Pty Ltd (GCNRC) as part of the studies undertaken during the preparation of the Tarrawonga Coal EIS. A remnant White Box Yellow Box Blakely's Red Gum Endangered Ecological Community occurs on the mine site.

The Tarrawonga Coal Flora and Fauna Management Plan identifies the need for ongoing monitoring of both undisturbed native vegetation communities as well as areas that have been rehabilitated. The Plan specifies that monitoring will be undertaken at an appropriate time annually.

Monitoring is conducted over eleven monitoring plots or quadrants. Seven control quadrants were established in April 2007 in each of the potentially affected vegetation communities identified by GCNRC in the flora and fauna monitoring plan. An additional quadrant was established on the 19<sup>th</sup> May 2007 on former cultivation land and it was reported that additional quadrants will be established over rehabilitated areas to assist in monitoring the success of rehabilitation efforts and to identify additional actions required to achieve required species composition and densities.

The second monitoring event following the initial establishment was conducted in May 2008. The May 2008 event also established three additional quadrants on the western rehabilitation area. The recommended actions within the GCNRC May 2008 report focused on establishing fences and sign posting the new quadrants and making staff aware of the need to avoid driving through the quadrants. During the audit site inspection monitoring quadrants were observed to be in place and signposted.

Annual flora monitoring undertaken by GCNRC appears to be largely restricted to the works within the quadrants and does not comment on weeds or success of rehabilitation beyond the quadrants. Reference is made to URS' recommendation for compliance with DA 88-4-2005 Schedule 4 Condition No. 36 (to increase the scope of the annual review of the Flora and Fauna Management Plan to

## 4 Environmental Performance and Effect on Surrounding Environment

include weed management and rehabilitation performance). Reference is also made to recommendations in the Rehabilitation section of this report.

### ***Biodiversity Offset Strategy***

Whitehaven Coal (together with its flora consultant Mr Geoff Cunningham) held numerous discussions with senior offices from the DECC in Armidale and Dubbo with a view of establishing alternative offsets to that the Biodiversity Offset Strategy proposed in DA 88-4-2005 Schedule 4 Condition 33. In March 2007 a formal proposal was put forward to the DECC regarding a combined regional biodiversity offset strategy for the Tarrawonga coal mine, Whitehaven coal mine and two proposed coal mines in the area which were still at the environmental assessment stage. The proposed alternative offset area comprised of 1,000 hectares of remnant closed woodlands adjoining the Kelvin State Forest.

It was reported during the audit site inspection that the regional biodiversity offset proposal was withdrawn due to difficulties identifying vegetation communities for a 'like for like' swap. It was reported that Tarrawonga Coal now intended to implement the original offset proposed by DA 88-4-2005 Schedule 4 Condition 33.

The biodiversity offset strategy has not been implemented and therefore an annual review has not been undertaken to date. Reference is made to URS' recommendation for compliance with DA 88-4-2005 Schedule 4 Condition No. 36 (to annually review the performance of the biodiversity offset strategy once implemented).

### ***Fauna***

Investigations of the fauna within and adjacent to ML 1579 were undertaken by Countrywide Ecological Service (CES) as part of the studies undertaken during the preparation of the Tarrawonga Coal EIS.

The Tarrawonga Coal Flora and Fauna Management Plan identifies the need for ongoing fauna monitoring to identify if the proposed measures to minimise impact on the fauna are effective and the predicted impacts of the activity during the proposal on the local biodiversity have been accurately determined. The Plan specified that fauna monitoring will be undertaken annually.

Monitoring of the nine established plots was conducted by CES in November 2007. Due to inclement weather on the evening of the 6<sup>th</sup> November, sampling of the road corridors and of the frogs was abandoned and completed with the autumn pre-start sampling on the 11 and 12 March 2008. The pre-start clearing check confirmed no impediments to clearing the subject land (section of Community 8 and Community 6 woodland) and required it be conducted as soon as possible to avoid the winter hibernation period. Clearing activities were reportedly completed by the end of April 2008.

An additional plot (P10) in the Woodland habitat in the adjoining State Forest has yet to be established.

The CES report recommended that: *"It might be worthwhile to set up a system to warn car and truck drivers about wildlife on the road to minimize roadkills. For example, when large numbers of turtles are moving about after a flood or a particular Boobook Owl is feeding on grasshoppers near the site office. These are usually episodic events and a bit of care can usually avoid any conflict with the local wildlife."*

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### 4.9 Rehabilitation

The MOP and Flora and Fauna Management Plan provide the basis for rehabilitation at Tarrawonga Coal Mine. Plan 5a of the MOP details the proposed rehabilitation for year 1 and 2, Plan 5b details the proposed rehabilitation for year 4 and 6 and Plan 6 of the MOP details the conceptual final landform at lease relinquishment. The final land use will reportedly comprise agricultural land, native vegetation and a stock exclusion / offset area.

Rehabilitation activities had occurred on the north western dump batters and southern batters at the time of the audit inspection. It was reported that contour bank design is conducted by the Soil Conservation Service. Drainage on the western batters is directed in a south westerly direction towards the 'dirty water' sediment basins which are located along the south western side of the open cut void. It was indicated that the contours have been designed to have the capacity to direct stormwater to the sediment basins.

The north western and southern batters of mine emplacement material are at various stages of rehabilitation. At the time of the audit site inspection, the north western batter had been contoured and cover crops established. From the mid to the bottom of the western batters tube stocks had been planted in June 2008. Logs had been placed on the batters (perpendicular to the contour) amongst the tube stocks for habitat. Tube stocks of native vegetation had been planted. It was reported during the site inspection that the western edge of the rehabilitation area was to be seeded in the next few weeks. A good cover was evident on areas of rehabilitation on the western batter. It was evident that there were some areas of weed in the revegetation. Advice had been sought by management on how to manage this weed and it was reported that areas of roly-poly weed would diminish with time and was useful protective cover for some other plant species.

Tarrawonga Coal reported that seed collection was undertaken from the Tarrawonga mine site and adjacent areas for the establishment of seedlings. Seeds are being propagated at the Whitehaven Coal Handling and Preparation Plant as well as off site by local contractors.

The southern batter has recently been shaped and was awaiting topsoil and crop seeding. Significant self sown revegetation had occurred on this area (prior to topsoil being placed) indicating it had been in this state for a while.

**URS recommendation:** It is recommended that topsoiling and revegetation be conducted as soon as possible on the southern batter to prevent weeds and erosion from occurring and to get final revegetation established as soon as practicable.

Topsoil is currently stored at the bottom of the southern batter. It was reported that there is enough topsoil available for the mine rehabilitation. A detailed assessment of topsoil management was not undertaken by URS as part of this audit and topsoils volumes were not verified.

Annual flora and fauna monitoring is undertaken by Geoff Cunningham Natural Resource Consultants Pty Ltd. Seven control quadrants were established in April 2007 with an additional quadrant established in May 2007 on former cultivation land. It was reported that additional quadrants will be established over rehabilitated areas to assist in monitoring the success of rehabilitation efforts and to identify additional actions required to achieve required species composition and densities. In May 2008 three additional quadrants were established in the western rehabilitation area. At the time of this monitoring event Japanese millet had established in these quadrants. The recommended actions within the GCNRC May 2008 report focused on establishing fences and sign posting the new quadrants and making staff aware of the need to avoid driving through the quadrants. There was little

## 4 Environmental Performance and Effect on Surrounding Environment

or no comment generally about the overall success of the rehabilitation, areas for improvement generally or specifically on rehabilitation or easily available information to provide the site with a sense of how they were travelling towards specific closure criteria i.e. was the rehabilitation successful.

The regulatory authorities (DoP and DPI) have not provided written comment on the rehabilitation at the site.

**URS recommendation:** It is recommended that future third party reports also include wider ranging comment than just focussed on the quadrants. The reports should be a tool for management to gain input on their techniques, how successful they have been towards a specific criteria and how they can improve.

**URS recommendation:** Although a Rehabilitation Plan is not required by the CoC it is considered best practice that a plan is developed to provide a systematic approach to rehabilitation. This plan should include:

- Formally defined Standards and rehabilitation closure criteria as defined by representative native vegetation communities around the mine;
- A systematic approach to rehabilitation including detailed design of structures (e.g. contours), procedures for rehabilitation (e.g. top soil depth, sub soil depth, seed mixes),
- Planned final landforms and a detailed description of final landuse;
- Detail a site specific monitoring program required to be conducted against the closure criteria and specifications and how monitoring is to be recorded. The monitoring program should assess the long term stability and functioning of the re-established ecosystems;
- Define an audit approach against all rehabilitation methodologies including expert third party review. This would cover experts on soil chemistry and management, flora and fauna management, drainage specialist etc;
- Define actions to be taken if closure criteria and rehabilitations standards are not being met;
- Define maintenance approaches to the rehabilitation such as weed management;
- How external stakeholders such as the DPI, DoP and community provide input to the rehabilitation plan and monitoring on an ongoing basis eg through annual AEMR and other inspections etc;
- The process for sign off of rehabilitated land with the DPI;
- How the rehabilitation plan will be updated to reflect lessons learnt and emerging/improved rehabilitation practices;
- The incorporation of mine planning in mine closure planning.

It is noted that this audit by URS was not an audit of the adequacy, success or completion of rehabilitation at the site and this audit did not assess rehabilitation against MOP requirements. To fully address the adequacy and success of rehabilitation and extent of works against MOP requirement a detailed rehabilitation assessment/audit would be required.

## 4 Environmental Performance and Effect on Surrounding Environment

### 4.10 Weeds

The 2007-2008 AEMR reported weed management involves general observations as well as six monthly targeted inspections to determine levels of weed infestation. A targeted control program was reportedly undertaken for African Boxhorn and Galvanised Burr over the December 2007 / January 2008 period. Galvanised Burr is considered a Class 4 noxious weed. Weed control is reportedly undertaken by contractors with the required chemical handling certificates.

Annual flora and fauna monitoring is undertaken by Geoff Cunningham Natural Resource Consultants Pty Ltd, however, this appears to be restricted to the works within the 11 quadrants and does not comment on weeds or rehabilitation outside of the quadrants.

It is recommended that weeds on the rehabilitated areas are routinely monitored with relevant actions where weeds are identified. Reference is made to URS' recommendation for compliance with DA 88-4-2005 Schedule 4 Condition No. 36 (to increase the scope of the annual review of the Flora and Fauna Management Plan to include weed management and rehabilitation performance). Reference is also made to the recommendations in the Rehabilitation Section above.

A detailed assessment of weed management was not undertaken by URS during the audit.

### 4.11 Blasting

The site's EPL No. 12365, provides the following requirements with respect to blasting:

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*"The airblast overpressure level from blasting operations in or on the premises must not exceed:*

- (a) 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; and*
- (b) 120 dB (Lin Peak) at any time,*

*At any point within 30 metres of any non- project related residential building or other noise sensitive location."*

*"Blasting operation on the premises must only be carried out between the hours 9am to 5pm, Monday to Friday."*

*"Blasting at the premises is limited to 1 blast on each day which blasting is permitted."*

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The above requirements are mirrored by the Conditions of Consent to DA 88-4-2005.

Blast monitoring was undertaken at the following three properties in closest proximity to the mine site: Bollol Creek Station, Templemore and Tarrawonga. During the period from 8 July 2006 to 31 March 2009 an airblast overpressure level of 117 dBL was recorded at Bollol Creek Station in July 2007. It is noted that the Bollol Creek Station property was acquired by Tarrawonga Coal in June 2008 and is now project related. All other blast monitoring results were below 115 dBL.

A review of monitoring results indicated no instances where blasting was undertaken outside of the specified hours and no instances where more than one blast was conducted per day.

## 4 Environmental Performance and Effect on Surrounding Environment

### 4.12 Operational noise

The site's EPL No. 12365, provides the following requirements with respect to noise:

*L6.1 Noise from the premises must not exceed:*

- (a) an  $L_{Aeq}$  (15 minute) noise emission criterion of 40 dB(A) during initial construction period;*
- (b) an  $L_{Aeq}$  (15 minute) noise emission criterion of 35 dB(A) during the operational stages of the mine; and*
- (c) an  $L_{A1}$  (1 minute) noise emission criterion of 45 dB(A) at night.*

*L6.2 Noise from the premises is to be measured at any residence not on the premises to determine compliance with this condition.*

*L6.3 The noise emission limits identified in this licence apply under all meteorological conditions except:*

- (a) during rain and wind speeds (at 10 m height) greater than 3m/s; and*
- (b) under "non-significant weather conditions" (non-significant weather conditions are described in the NSW Industrial Noise Policy, Chapter 5 and Appendix E in relation to wind and temperature inversions).*

*L6.4 Noise impacts where wind speed exceeds 3 m/s at 10 m above the ground must be addressed by:*

- a) documenting noise complaints received to identify any higher level of impacts or wind patterns;*

*where levels of noise complaints indicate a higher level of impact then actions to quantify and ameliorate any enhanced impacts where wind speed exceeds 3 metres per second at 10 metres above the ground should be developed and implemented.*

*L6.5 The noise limits set by condition L6.1 of the licence do not apply where a current legally binding agreement exists between the licensee and the occupant of a residential property that:*

- a) agrees to an alternative noise limit for that property; or*
- b) provides an alternative means of compensation to address noise impacts from the premises.*

*A copy of any agreement must be provided to the EPA before the proponent can take advantage of the agreement.*

*L6.6 The noise limits set by condition L6.1 of this licence apply to noise generated solely from the premises. Where the limits are exceeded solely due to cumulative noise impacts from the premises and off premise operations (not under the control of the licensee), the licensee must:*

- a) identify significant contributing noise sources and / or meteorological conditions on the premises contributing to the cumulative noise impacts.*
- b) liaise with the occupier(s) of all off premise operations contributing to the cumulative noise impact to identify source(s) and/or causes(s) of cumulative noise impacts causing the exceedance;*
- c) develop a joint noise reduction strategy in conjunction with all off site contributors to the cumulative noise impacts; and*
- d) implement all noise mitigation measures that relate solely to the premises identified in the joint noise reduction strategy.*

## 4 Environmental Performance and Effect on Surrounding Environment

*A copy of the joint noise reduction strategy must be provided to the DEC's Armidale office within 30 days of any cumulative noise impacts exceeding the limits set by conditions L6.1 of this licence.*

Noise limits at residential properties are provided in DA 88-4-2005 Schedule 4 Condition No. 6 for construction and operational stages. Construction has been completed, therefore, only the noise limits for the operations stage are provided below:

<b>Day</b> <b>LAeq(15 minute)</b>	<b>Evening</b> <b>LAeq(15minute)</b>	<b>Night</b> <b>LAeq(15minute)</b>	<b>Night</b> <b>LA1(1 minute)</b>
35	35	35	45

### Noise Monitoring Results Summary

Quarterly attended noise monitoring and six monthly unattended monitoring is undertaken by acoustic consultants Spectrum Acoustics. Attended monitoring is undertaken at four receivers (N1 Templemore, N2 Bollol Creek Station, N3 Tarrawonga and N4 Ambardo). The Templemore property was purchased by Tarrawonga Coal in May 2007 and the Bollol Creek Station property in June 2008. The EPL was revised to remove the requirement to monitor at Bollol Creek Station.

A number of exceedances were reported for the period from January 2007 to December 2008. These are summarised below:

- July 2007: exceedance at Pine Grove property during the day (5 dB) and Ambardo property during the evening (1 dB). The exceedance at Pine Grove was attributed to trucks driving over cattlegrid.
- September 2007: exceedance at Pine Grove property during the day (7 dB) and Ambardo property during the evening (1 dB). The exceedances at Pine Grove were attributed to a high number of truck movements on the haul road during the 15 minute monitoring period.
- January 2008: exceedance at Pine Grove property during the day (1 dB) and at Ambardo property during the day (1 dB).
- June 2008: exceedance at Ambardo property during the day (7 dB), Tarrawonga property during the day (4 dB), Pine Grove property during the day (8 dB), Bollol Creek Station property during the evening (1 dB) and Ambardo property during the evening (6 dB). The exceedances at the Pine Grove and Ambardo properties were attributed to severely adverse meteorological conditions.
- September 2008: exceedance at Ambardo property during the day (3 dB). This exceedance was attributed to a high number of truck movements on the haul road during the 15 minute monitoring period.

In response to the above exceedances Tarrawonga Coal undertook the following activities:

- removal of the cattlegrid;
- commencement of new policy with Toll (haulage contractor) to delay commencement of morning shift operations until 6:45am;
- ceasing of early morning short haul operation from Tarrawonga to the Canyon Site reducing number of trucks on the haul road by five;

In addition to the above, a representative from Toll attended the CCC meeting on the 18 February 2009 to discuss community concerns related to haulage trucks. During this meeting it was advised that Toll would trial running several empty trucks back to Tarrawonga by 10pm to park up on site for loading the next morning with the aim of reducing the number of trucks running to site in the morning and the associated noise impact.

## 4 Environmental Performance and Effect on Surrounding Environment

**URS recommendation:** It is recommended Tarrawonga Coal continue to monitor noise levels and implement actions to mitigate exceedances as necessary.

The requirement for unattended monitoring was removed from the EPL in November 2008. Prior to this unattended monitoring was undertaken at the Templemore, Bollol Creek Station and Ambardo properties.

Results of the unattended monitoring undertaken for the period January 2007 to December 2008 showed some exceedances of the  $L_{A1(1 \text{ minute})}$  criterion during the night (defined by the EPA as 10 pm to 7 am) at all three monitoring locations. It is noted however that unattended monitoring records the total acoustic environment and therefore it is not possible to determine whether the exceedances were as a result of Tarrawonga Coal mine activities.

**URS recommendation:** It is recommended the  $L_{Amax}$ ,  $L_{A1}$ ,  $L_{A90}$ ,  $L_{Amin}$  are included in the attended monitoring program and that a discussion of compliance with the  $L_{A1}$  criteria is provided in the monitoring reports by Spectrum Acoustics.

### 4.13 Visual/light pollution

Views of mining operations and areas of mine related disturbance are limited to those from the project related residence "Thuin" located adjacent to the mine site and from the Idemitsu Boggabri Coal operation to the west. Tarrawonga Coal have focused rehabilitation efforts on the western fringe of the operation to minimise the visual impact from the western side.

Night lights from the mine site are reportedly visible from Goonbri Road to the south of the mine and Maules Creek Road to the west of the mine. It was reported that mobile lighting plant are used where required and they are positioned to face away from residences and not directed upwards. It was reported that where possible less sensitive dump sites are used at night (for example within the pit) to minimise impacts on sensitive receivers in the vicinity of the site.

### 4.14 Aboriginal heritage

An Archaeology and Cultural Heritage Management Plan was prepared in consultation with the Red Chief Local Aboriginal Land Council (LALC), the NSW National Bigundi Biame Gunnedarr Traditional People and the DECC.

Consent to carry out the destruction of an aboriginal object/place was received from the DECC for the salvage of the NAS01 and NIS01 sites and relocation to the Cumbo Gunerah Keeping Place. It was reported in the 2007-2008 AEMR that no other sites have been impacted by the development. The AEMR also reported that Tarrawonga Coal regularly consults with the Red Chief LALC through the soil stripping contractor. The soil stripping contractor notifies the Red Chief LALC site monitors directly approximately two to three days in advance of planned activities.

No significant issues relating to current Aboriginal Heritage management were identified during the audit.

### 4.15 Natural heritage

It was reported that there are no buildings located on the mine site, of natural heritage status.

No significant issues relating to current Natural Heritage management were identified during the audit.

## 4 Environmental Performance and Effect on Surrounding Environment

### 4.16 Spontaneous combustion management

It was reported that the low percentage of inorganic sulphur in Tarrawonga Coal as well as the short residence time of ROM coal stockpiles minimises the potential for spontaneous combustion incidents.

The 2006-2007 AEMR reported a single incident of spontaneous combustion at the ROM stockpile. In response the effected coal was spread out by front end loader and cooled by the application of water using the on-site water cart. No incidents were reported in the 2007-2008 AEMR.

An incident of spontaneous combustion at the ROM stockpile was reported to the auditors during the site inspection. It was reported that this incident was responded to immediately and the fire extinguished.

### 4.17 Feral animal control

Feral animals are not reported to be a significant land management issue on Tarrawonga Coal's landholding and are limited to isolated occurrences of foxes, hares, rabbits, and mice.

In view of the low frequency of occurrence, and in the absence of an extensive programme by all surrounding landowners, no broad scale feral animal control programme has been implemented.

No significant issues relating to current feral animal control management were identified during the audit.



## Compliance with Relevant Statutory Requirements

This Section fulfils the requirement to assess whether the development is complying with the relevant standards, performance measures, and statutory requirements, as stated in DA 88-4-2005 Schedule 6 Condition No. 6:

*“(d) assess whether the development is complying with the relevant standards, performance measures, and statutory requirements”*

The following table identifies the leases, licences and approvals in place for the Tarrawonga Coal mine at the end, the issuing / responsible Authority, dates of issue, duration (where limited) and relevant comments. The list is presented chronologically according to the date of issue.

**Table 5-1 Approvals**

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
Department of Primary Industries (DPI)	Exploration Licence (EL 5967)	24/07/2002	23/07/2012	Renewed 4/10/2007.
Minister for Infrastructure and Planning (Department of Planning – DoP).	Development Application (DA) 88-4-2005 (	9/11/2005	9/11/2017	
Department of Environment and Conservation and Climate (DECC)	Environment Protection Licence No. 12365	9/01/2006	Nil Anniversary date: 1 April Next review: 9/01/2009	DECC understood to be currently undertaking a review of the EPL.
Department of Primary Industries - Mineral Resources	Mining Lease (ML) 1579	3/04/2006	3/04/2027	
Department of Primary Industries - Mineral Resources	Mining Operations Plan (MOP)	1/05/2006	1/02/2012	
Department of Natural Resources (DNR) (now the Department of Water and Energy – DWE)	Water Licence 90BL253276 90BL253278 90BL253279 90BL253280 90BL254253 90BL254254 90BL254255	27/4/2006	Nil	Used for groundwater monitoring purposes.

This audit included an assessment of compliance with the Conditions of Consent of DA 88-4-2005, which incorporates the majority of the requirements of the site’s Environment Protection Licence (EPL) (Ref 12365) and the requirements of the Mining Lease (ML) ML1579, dated 3 April 2006. A review of the ML requirements and the EPL was not undertaken as part of this audit, except where requirements were repeated in DA 88-4-2005.

A detailed review of the MOP was not undertaken as part of this audit except where issues were raised by the DPI as part of its annual inspection. URS reviewed Tarrawonga Coal’ actions to address these issues (refer Section 3).

## 5 Compliance with Relevant Statutory Requirements

A review of the Water Licence requirements was not undertaken as part of this audit.

### 5.1 Conditions of Consent (CoC) Compliance

The status of Tarrawonga Coal's performance, during URS's audit, in respect of each of the Conditions of Consent is presented in Appendix A.

Performance categories in respect of compliance are defined as follows:

- Compliant - currently in compliance;
- Non-compliant - currently not in compliance;
- Not applicable - condition of consent not applicable at time of audit;
- Indeterminate - it has not been possible to determine whether compliance exists.

Comments are listed beside each condition to explain aspects of the audit review. Where considered relevant, observations have been made regarding specific compliance issues.

Where compliance with a condition had not been achieved during the audit period, but the site could demonstrate current compliance, this has been recorded as such. In addition, if a non-compliance is considered to be of an administrative nature (i.e. late provision of a report) this has been recorded as an 'Compliant with intent of requirement'.

In general, no specific or rigorous assessment of documents required as part of meeting the CoC has been undertaken during the assessment, particularly where they have been signed off by other parties (for example DoP).

A summary of the non-compliance issues identified in the assessment against the consent conditions is provided in Section 5.1.1 below.

#### 5.1.1 Conditions of Consent Assessed as 'Not In Compliance', or Compliance 'Indeterminate'

DoP conditions of consent (CoC) not considered to be in compliance or compliance was indeterminate are listed in Table 5-2. The basis for lack of compliance is provided in the table. Further details are provided in Appendix A.

## 5 Compliance with Relevant Statutory Requirements

**Table 5-2 Conditions of Consent Not in Compliance or Compliance is Indeterminate**

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment	Recommended Action
Schedule 4 CoC 1	Non compliant	The Applicant shall ensure that dust emissions generated by the development do not cause exceedances of the air quality criteria listed in Tables 1, 2 and 3 at any residence on, or on more than 25 percent of, any privately-owned land.	<p><u>TSP</u></p> <p>The Air Quality Monitoring Plan states that '<i>No monitoring of TSP is proposed given the relationship between TSP and PM<sub>10</sub> and the preference of the DEC to record PM<sub>10</sub> concentrations</i>'. The Air Quality Monitoring Plan was approved by the DoP by letter dated 16 February 2006.</p> <p><u>PM<sub>10</sub></u></p> <p>PM<sub>10</sub> is monitored by Tarrawonga Coal at the Templemore property (EBA-4). Monitoring is also conducted at the Merriown property (EBA-1 / D7) by Idemitsu Boggabri Coal and the data shared with Tarrawonga Coal. These monitoring points are stipulated in the EPL for the Tarrawonga Coal Mine.</p> <p>URS reviewed PM<sub>10</sub> monitoring results at the Templemore property and the Merriown property for the period June 2006 to February 2009. The results indicated compliance with the annual average criterion and the 24 hour criterion at both locations.</p> <p><u>Deposited Dust</u></p> <p>Deposited dust is currently monitored at eight locations by Tarrawonga Coal and at four locations by Idemitsu Boggabri Coal (IBC). Two of these monitoring locations (EB-10 and EB-11) were established in March 2007 in order to improve assessment of cumulative dust impacts. Monitoring was also previously conducted at the Jerralong property (EB-3) but was ceased in January 2009. Monitoring by Tarrawonga Coal at Tarrawonga (EB-7), Thuin (EB-8) and Pine Grove (EB-9) is additional to the monitoring stipulated by the EPL.</p> <p>URS reviewed deposited dust monitoring results from Tarrawonga Coal and IBC for the period December 2005 to February 2009. The results indicated that whilst some months the total insoluble solids exceeded the goal at some locations the total insoluble solids annual average complied with the total insoluble solids annual average goal of 4g/m<sup>2</sup>/month at all locations with the exception of Forest View (D3) and Jerralong</p>	Continue to monitor deposited dust at additional monitoring site adjacent to Forest View and if exceedances of dust goal continue, review with IBC and implement additional measures as appropriate.

## 5 Compliance with Relevant Statutory Requirements

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment	Recommended Action
			<p>(EB-3).</p> <p>The total insoluble solids annual average for Jerralong complied with the annual average goal in 2006 and 2007 but slightly exceeded the goal in the 2008 calendar year (4.2g/m<sup>2</sup>/month). Monitoring at the Jerralong property ceased in January 2009.</p> <p>The total insoluble annual average for Forest View exceeded the annual average goal in 2006, 2007 and 2008. The annual average for the 2008 calendar year was 5.6g/m<sup>2</sup>/month and had decreased compared to the previous year. Tarrawonga Coal reported in the 2007-2008 AEMR that the high measured dust levels at this monitoring point are believed to be attributed to the increased truck and semi trailer use of adjacent gravel roads during the wheat harvest. This view was based on a review of wind roses which demonstrated that wind directions are predominantly NW and SE which would limit the contribution of dust loads at that monitor from the Tarrawonga site. An additional monitor was installed in closer proximity to the mine sites and further from the adjacent gravel road. Data from this monitor was not available at the time of the audit.</p>	
Schedule 4 CoC 6	Non compliant	The Applicant shall ensure that the noise generated by the development, including the noise generated on the private sections of the transport route, does not exceed the noise impact assessment criteria presented in Table 7 at any residence on privately-owned land.	<p>Quarterly attended noise monitoring and six monthly unattended monitoring is undertaken by acoustic consultants Spectrum Acoustics.</p> <p>Attended monitoring is undertaken at four receivers (N1 Templemore, N2 Bollol Creek Station, N3 Tarrawonga and N4 Ambardo). The Templemore property was purchased by Tarrawonga Coal in May 2007 and the Bollol Creek Station property in June 2008. The EPL was revised to remove the requirement to monitor at Bollol Creek Station.</p> <p>A number of exceedances were reported for the period from January 2007 to December 2008. These are summarised below:</p> <ul style="list-style-type: none"> <li>- July 2007: exceedance at Pine Grove property during the day (5 dB) and Ambardo property during the evening (1 dB). The exceedance at Pine Grove was attributed to trucks driving over cattlegrid.</li> <li>- September 2007: exceedance at Pine Grove property during the day (7 dB) and Ambardo property during the evening (1 dB). The</li> </ul>	<p>Continue to monitor noise levels and implement actions to mitigate exceedances as necessary.</p> <p>Continue to consult with the DECC regarding exceedances.</p> <p>Include L<sub>A1(1 minute)</sub> monitoring results and discussion of compliance with L<sub>A1(1 minute)</sub> criteria in attended monitoring reports provided by Spectrum Acoustics.</p>

## 5 Compliance with Relevant Statutory Requirements

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment	Recommended Action
			<p>exceedances at Pine Grove were attributed to a high number of truck movements on the haul road during the 15 minute monitoring period.</p> <ul style="list-style-type: none"> <li>- January 2008: exceedance at Pine Grove property during the day (1 dB) and at Ambardo property during the day (1 dB)</li> <li>- June 2008: exceedance at Ambardo property during the day (7 dB), Tarrawonga property during the day (4 dB), Pine Grove property during the day (8 dB), Bollol Creek Station property during the evening (1 dB) and Ambardo property during the evening (6 dB). The exceedances at the Pine Grove and Ambardo properties were attributed to severely adverse meteorological conditions.</li> <li>- September 2008: exceedance at Ambardo property during the day (3 dB). This exceedance was attributed to a high number of truck movements on the haul road during the 15 minute monitoring period.</li> </ul> <p>In response to the above exceedances Tarrawonga Coal undertook the following activities:</p> <ul style="list-style-type: none"> <li>- removal of the cattlegrid;</li> <li>- commencement of new policy with Toll (haulage contractor) to delay commencement of morning shift operations until 6:45am;</li> <li>- ceasing of early morning short haul operation from Tarrawonga to the Canyon Site reducing number of trucks on the haul road by five;</li> </ul> <p>In addition to the above, a representative from Toll attended the CCC meeting on the 18 February 2009 to discuss community concerns related to haulage trucks. During this meeting it was advised that Toll would trial running several empty trucks back to Tarrawonga by 10pm to park up on site for loading the next morning with the aim of reducing the number of trucks running to site in the morning and the associated noise impact.</p> <p>The requirement for unattended monitoring was removed from the EPL in November 2008. Prior to this unattended monitoring was undertaken at the Templemore, Bollol Creek Station and Ambardo properties.</p>	

## 5 Compliance with Relevant Statutory Requirements

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment	Recommended Action
			Results of the unattended monitoring undertaken for the period January 2007 to December 2008 showed some exceedances of the $L_{A1(1 \text{ minute})}$ criterion during the night (defined by the EPA as 10 pm to 7 am) at all three monitoring locations. It is noted however that unattended monitoring records the total acoustic environment and therefore it is not possible to determine whether the exceedances were as a result of Tarawonga Coal mine activities.	
Schedule 4 CoC 23	Non compliant	Except as may be expressly provided by a DEC licence, the Applicant shall comply with section 120 of the <i>Protection of the Environment Operations Act 1997</i> during the carrying out of the development.	<p>Surface water at the site is either directed to 'clean water' storage dams or 'dirty water' sediment basins. Dirty water is captured within two catchments on the mine site ('disturbed areas' and 'open cut' catchments). Sediment basins, storage dams and associated banks and drains were designed and constructed by the Department of Lands – Soil Services personnel.</p> <p>During the previous AEMR reporting period from May 2007 to May 2008, suspended solids exceeded the EPL limit (50 mg/L 100 percentile limit) on two occasions (17 January and 6 February 2008). An additional discharge off site was recorded on the 7 October 2008 which exceeded the EPL suspended solids limit and the pH limit (6.5-8.5).</p> <p>No exceedances of the EPL oil and grease limits were recorded.</p> <p><u>Mine Discharge Event 17 January 2008</u></p> <p>This discharge event followed 124.8 mm rain in December 2007 and a further 55.8 mm on rain on the 16<sup>th</sup> and 17<sup>th</sup> January 2008. It was reported to be a minor discharge with the water tending to pool adjacent to the site boundary. A TSS level of 837 mg/L was measured at SD-17. The high sediment load was due to the failure of a recently constructed waterway (series of drop structures draining contour banks) on the western face of the rehabilitated emplacement area.</p> <p><u>Mine Discharge Event 6 February 2008</u></p> <p>This discharge event followed additional rainfall in February following on from high velocity rainfall in December 2007 and January 2008. Discharges occurred from storage dams SD-9 and SD-17. A TSS level of 476 mg/L was measured at DS-17. The source of the sediment was related to the eroded waterway which could not be repaired after its initial failure (described above) due</p>	<p>Many of the aspects of non compliance have already been addressed.</p> <p>Continue to monitor storage dam levels at discharge points and manage water to avoid discharges. Continue to monitor water quality and confirm SWMP initiatives are effective in managing discharges.</p>

## 5 Compliance with Relevant Statutory Requirements

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment	Recommended Action
			<p>to the surface being too wet to allow machinery on site.</p> <p>Following the discharge event in late February and early March 2008, the waterway was re-constructed by removing topsoil and subsoil by scraper and dozer and rock placed in the waterway to provide for full rock lining. The rock lined waterway was completed in mid April with seed and fertiliser spread across the waterway to provide for groundcover establishment between the rocks.</p> <p>The above discharge events were reported to the DECC by email on the 8 February 2008. A report was also provided dated 7 February 2008 providing additional details of the discharge event.</p> <p>An inspection was undertaken by the DECC on the 1 April 2008. A report was provided to the DECC dated 2 April 2008 outlining the details of the discharge events and the plan for future water management at the site.</p> <p>One of the actions committed to as a result of this discharge was to conduct a full water balance calculation over the site which would also identify storage capacity against storage requirements at the western end where SD-7 and SD-17 are located. This review was conducted by Department of Lands – Soil Services personnel.</p> <p>The rock waterway was inspected during the audit inspection. Grass was observed to have grown between the rocks and the waterway appeared to be stable.</p> <p><u>Mine Discharge Event 7 October 2008</u></p> <p>This discharge event followed 39 mm of rainfall on the 6 October 2008 and whilst water was discharged from the dam it was reported that it pooled at the lease boundary and did not leave the site. It was reported that pump outs from the dam in September following 80 mm of rain reduced the potential for significant discharge.</p>	
Schedule 4 Coc 24	Non Compliant	Except as may be expressly provided by a DEC Environment Protection Licence, the Applicant shall only discharge water from the mine site in compliance with the limits in Table 13	During the previous AEMR reporting period May 2007 to May 2008, suspended solids exceeded the EPL limit (50 mg/L 100 percentile limit) on two occasions (17 January and 6 February 2008). An additional discharge off site was recorded on the 7 October 2008 which exceeded the EPL suspended solids limit	Refer to CoC 23 above.

## 5 Compliance with Relevant Statutory Requirements

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment	Recommended Action
			and the pH limit (6.5-8.5). These discharges are discussed under CoC No.23 above. There was an additional discharge event on the 17 February 2009 however monitoring results indicated parameters were within the limits specified by the CoC and the EPL.	
Schedule 4 Coc 31	Non Compliant	Within 6 months of the commencement of development, the Applicant shall prepare a Groundwater Contingency Plan to the satisfaction of the Director-General.	A Groundwater Contingency Plan was prepared however evidence of it being approved by the DoP was not available.	Obtain DG approval of the Groundwater Contingency Plan.
Schedule 4 Coc 32	Non Compliant	Within 3 years of commencing the development, and every 3 years thereafter, unless the Director-General directs otherwise, the Applicant shall provide to the Department a review and report on surface and groundwater monitoring and observable trends. The report is to be completed by a suitably qualified and independent hydrogeologist, whose appointment has been approved by the Director-General.	Tarrawonga Coal reported that they are in the process of engaging consultants to conduct the independent review.	Engage consultants to conduct independent review.
Schedule 4 CoC 33	Non compliant	The Applicant shall implement, in accordance with best practice flora and fauna management, the Biodiversity Offset Strategy described in the EIS (Section 4.4.4.4 and Figure 2.18), and summarised in Table 16, or a refined version of the strategy developed in consultation with the DEC and the Department, and to the satisfaction of the Director-General	It was reported that numerous discussions were held between Whitehaven Coal, its flora consultant (Mr Geoff Cunningham) and senior offices from the DECC in Armidale and Dubbo with a view of establishing alternative offsets to that proposed in CoC 33 above. A proposal was put forward to the DECC proposing a combined regional biodiversity offset strategy for the Tarrawonga coal mine, Whitehaven coal mine and two proposed coal mines in the area which were still at the environmental assessment stage (letter dated 15 March 2007). A letter to the DECC from Whitehaven Coal dated 24 July 2007 further developed the proposal and proposed an alternative offset area comprising of 1,000 hectares of remnant closed woodlands adjoining the Kelvin State Forest.  A letter from Whitehaven Coal to the DECC dated 22 August 2008 indicated discussions regarding the regional biodiversity offset proposal were ongoing.  It was reported during the audit site inspection that the regional biodiversity offset proposal was withdrawn due to difficulties identifying vegetation communities for a 'like for like' swap. It was reported that the original offset proposed by this CoC will be implemented.	Implement biodiversity offset strategy as per the EIS and this CoC.

## 5 Compliance with Relevant Statutory Requirements

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment	Recommended Action
Schedule 4 CoC 34	Non compliant	Within 12 months of the date of this consent, the Applicant shall implement suitable arrangements to provide long-term security for the offset, to the satisfaction of the Director-General.	As discussed above, Whitehaven Coal was seeking to implement an alternative biodiversity strategy and as such is yet to implement arrangements to provide long-term security for the offset.	Implement arrangements to provide long term security for the offset.
Schedule 4 CoC 36	Non compliant	The Applicant shall: (a) review the performance of the offset strategy and the Flora and Fauna Management Plan annually; and (b) report on this review in the AEMR, to the satisfaction of the Director-General.	As the offset strategy is yet to be implemented (refer CoC 34 and 34 above) a review of its performance has not been undertaken. A formal review of the performance of the Flora and Fauna Management Plan has not been undertaken. Some discussion of results from the flora monitoring (conducted by Geoff Cunningham Natural Resource Consultants) and fauna monitoring (conducted by Countrywide Ecological Services) is included in the AEMR	Implement offset strategy and undertake performance reviews as required by the CoC. Increase the scope of the annual review of the Flora and Fauna Management Plan to include weed management and rehabilitation performance and report in the AEMR.
Schedule 4 CoC 51	Non compliant	The Applicant shall: (a) calculate the greenhouse gas emissions generated by the development; (b) investigate ways to reduce greenhouse gas emissions generated by the development, including the use of mains electric power to operate equipment associated with the coal processing plant; and (c) report on greenhouse gas emissions and abatement measures in the AEMR, to the satisfaction of the Director-General	Greenhouse gas emissions are discussed in the 2007-2008 AEMR. The greenhouse gas emissions considered were from diesel use (both for site electricity through diesel generators and for fuel for transport). The review of the 2007-2008 AEMR by the DoP identified that other greenhouse gas emissions are not considered including use of explosives and fugitive methane emissions from open cut mining (letter dated 18 August 2008). It was reported that the Whitehaven Coal Group takes part in the Greenhouse Challenge Plus program and are in the process of preparing an action plan for the group as a whole.	Address DoP comment and include more comprehensive greenhouse gas emissions calculation in future AEMRs.
Schedule 4 CoC 52	Non compliant	The Applicant shall: (a) monitor the amount of waste generated by the development; (b) investigate ways to minimise waste generated by the development; (c) implement reasonable and feasible measures to minimise waste generated by the development; and (d) report on waste and management and minimisation in the AEMR, to the satisfaction of the Director-General.	A Waste Disposal Register has been developed for tracking waste oil, oil filters, drums, batteries, contaminated rags, used tyres and refrigerant gases. At the time of the audit the only waste recorded in the register was used oil and oil filters. Waste tracking of general domestic type wastes from on-site buildings is not conducted. It was reported that a recycling program has been established. It would be useful to include volumes or mass of domestic waste recycled and disposed in the Waste Register. Waste Management is reported in the AEMRs.	Ensure all waste disposed and recycled is recorded in the Waste Register. Implement a more thorough system of monitoring and recording waste disposal and recycling to enable better investigation of ways to minimise waste generation.

## 5 Compliance with Relevant Statutory Requirements

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment	Recommended Action
Schedule 4 CoC 54	Non compliant	The Applicant shall ensure that the storage, handling, and transport of: (a) dangerous goods is done in accordance with the relevant <i>Australian Standards</i> , particularly <i>AS1940</i> and <i>AS1596</i> , and the <i>Dangerous Goods Code</i> ; and (b) explosives are managed in accordance with the requirements of the DPI.	<p>a) A complete audit of Dangerous Goods storage against the standards was not conducted as part of this audit however the following are noted:</p> <ul style="list-style-type: none"> <li>- At the time of the site visit hydrocarbons were generally observed to be stored within a designated concrete bunded area adjacent to the workshop which drains to an oil water separator.</li> <li>- Poor waste hydrocarbon storage was observed in contractor storage areas.</li> <li>- The two 60,000 L diesel tanks are above ground and self bunded. The audit conducted by the DoP on the 30 January 2008 identified (as an improvement opportunity) that the refuelling hoses attached to the tanks are not bunded. Localised staining of the gravel and soil was observed in the vicinity of the fuel tanks. Following the audit site inspection, Tarrawonga Coal installed a concrete apron at the fuel farm to catch spills from the fuel fill point in mid April.</li> <li>- Copies of MSDS are held within the site office.</li> <li>- A Dangerous Goods Notification was not available at the time of the site visit. Such a Notification appears to be required for the quantity of diesel stored on site.</li> </ul> <p>b) It was reported that explosives are brought onto site as required by Orica Explosives and are not stored on site.</p>	<p>Confirm whether a Dangerous Goods Notification is held and if not, obtain from WorkCover NSW, and maintain on site.</p> <p>General house keeping is required at the contractors waste storage area, specifically storage of waste solvents, hydrocarbons and batteries.</p> <p>Monitor performance of concrete apron at fuel fill point.</p>
Schedule 5 CoC 3	Non Compliant	Within 6 months of this consent, the Applicant shall develop a brochure to advise landowners and/or existing or future tenants (including tenants of mine-owned properties) of the possible health and amenity impacts associated with exposure to particulate matter, in consultation with NSW Health, and to the satisfaction of the Director-General. The Applicant shall review relevant human health studies and update this brochure every 3 years, to the satisfaction of the Director-General. The Applicant shall provide this brochure (and associated updates) to all landowners and/or existing or future tenants of properties where the monitoring results identify that the mine is exceeding the air quality land acquisition criteria in schedule 4.	<p>A Mine Dust Factsheet was prepared dated January 2006. The Factsheet states that it was approved by the DG and incorporates a fact sheet prepared jointly by NSW Minerals Council and NSW Health (pages 3 and 4 of brochure).</p> <p>The brochure was reportedly hand delivered to neighbouring properties.</p> <p>The brochure was due to be reviewed in January 2009.</p>	<p>Undertake a review of relevant human health studies and update the brochure to the satisfaction of the DG.</p>

## 5 Compliance with Relevant Statutory Requirements

CoC No.	Non Compliant / Indeterminate	Summary of CoC Requirement	Comment	Recommended Action
Schedule 5 CoC 10	Non Compliant	<p>Within 1 month of the approval of any management plan/strategy or monitoring program required under this consent (or any subsequent revision of these management plans/strategies or monitoring programs), the completion of the independent audits required under this consent (see conditions 32 of schedule 4 and condition 6 of schedule 6), or the completion of the AEMR (see condition 5 above), the Applicant shall:</p> <p>(a) provide a copy of the relevant document/s to the NSC, GSC, relevant agencies and the Community Consultative Committee;</p> <p>(b) ensure that a copy of the relevant documents is made publicly available at the NSC and GSC; and</p> <p>(c) within 12 months of the date of this consent put a copy of the relevant documents on the Applicant's website; to the satisfaction of the Director-General.</p>	<p>a) NSC and GSC were provided with copies of the Environmental Strategy, Transport Route Construction Management Plan, Watercourse Crossing Management Plan, Archaeological and Cultural Heritage Management Plan (letters dated 17 February 2006), Air Quality Monitoring Program, Noise Management Program, Road Noise Management Plan, Blasting Monitoring Program (letters dated 6 March 2006), and the Site Water Management Plan (letters dated 11 April 2006). The 2006-2007 AEMR was provided to the DPI, DECC, NSC, GSC, DWE and CCC (observed letters kept on file dated 13 July 2007).</p> <p>The 2007-2008 AEMR was provided to the DPI (letter dated 10 June 2008) and the CCC (letter dated 23 July 2008).</p> <p>b) Whilst copies of the Plans and AEMRs have been provided to the NSC and GSC (as detailed above) it is unsure whether these are made publically available at the NSC and GSC offices.</p> <p>c) the Whitehaven Coal website (Tarrawonga Coal project) includes links to the following plans: Road Noise Management Plan, Archaeology and Cultural Heritage Management Plan, Transport Route Construction Management Plan, Site Water Management Plan, Noise Management Program, Watercourse Crossing Management plan, Air Quality Monitoring Program, Blasting Monitoring Program and Environmental Strategy. The website also contains links to the 2006-2007 AEMR.</p> <p>Whilst the website contains considerable information a number of plans are not included on the website as outlined in the recommendations below. It is understood Whitehaven Coal are planning a complete overhaul of the website.</p>	<p>Ensure the website is kept up to date and amended plans and new plans are included on the website. The following should be included on the website:</p> <ul style="list-style-type: none"> <li>- 2007-2008 AEMR</li> <li>- Environmental Monitoring Program</li> <li>- Bushfire Management Plan</li> <li>- Groundwater Contingency Plan</li> <li>- Amended Site Water Management Plan</li> </ul> <p>Confirm with NSC and GSC whether Plans and AEMRs provided are made publically available at the NSC and GSC offices.</p>
Schedule 5 CoC 11	Indeterminate	<p>During the life of the development, the Applicant shall:</p> <p>(a) make the results of the monitoring required under this consent publicly available at the NSC and GSC offices; and</p> <p>(b) update these results on a regular basis (at least every 3 months), to the satisfaction of the Director-General.</p>	<p>Copies of the Monitoring Reports presented at the CCC meetings are provided to CCC members who include members of NSC and GSC. It is unsure whether these reports are made publically available at the NSC and GSC offices.</p>	<p>Confirm with NSC and GSC whether Monitoring Reports provided during CCC meetings are made publically available at the NSC and GSC offices.</p>



## Review of the adequacy of Environmental Management, the EMS and the EMP

This Section fulfils the requirement to assess the adequacy of the applicants Environmental Management Strategy, as stated in DA 172-7-2004, Schedule 6 Condition of Consent No.6:

*e) review the adequacy of the Applicant's Environmental Management Strategy and Environmental Monitoring Program.*

### 6.1 Environmental Management Overview

Tarrawonga Coal Mine is operated by Tarrawonga Coal Pty Ltd, a joint venture between Whitehaven Coal Mining Pty (70%) and Idemitsu Boggabri Coal Ltd (30%). Idemitsu Boggabri Coal operate the Idemitsu Boggabri Coal Mine located directly to the north and west of the Tarrawonga Coal Mine. Environmental responsibilities at the Tarrawonga site are allocated to the Environmental Manager, Mr Danny Young. At the time of the audit site inspection Tarrawonga Coal were in the process of hiring an Environmental Officer. This process is now complete with Ms Jillian Scealy engaged in the role of Environmental Officer commencing in April 2009.

Mining operations are undertaken by Tarrawonga Coal Mine personnel. The day to day operational responsibilities are allocated to the Project Manager, Mr Jason Conomos.

The Environmental Manager of Tarrawonga Coal Mine has regular discussions with the Environmental Manager of the Idemitsu Coal Mine to share environmental monitoring data and discuss potential cumulative impacts from the operation of both mines.

Orica is the contractor on site licensed to undertake blasting. All materials for blasting are brought to site by Orica personnel on the day of each blast from the precursor storage facility located approximately 10 km south of the Tarrawonga site.

### 6.2 Environmental Management Strategy (EMS)

An Environmental Management Strategy (EMS) dated December 2005 was approved by the DOP by letter dated 21 December 2005.

As part of this audit a brief review of the EMS Strategy was undertaken, including an assessment of adequacy of the objectives and key performance outcomes for each environmental issue. The EMS appears to address the requirements of the Conditions of Consent of DA 88-4-2005 and generally includes the relevant environmental issues observed during the site visit, however, it is considered that the EMS is out of date and requires updating to reflect the current name of the mine, current site operations, and current licences (at the time of preparation of EMS an application for an EPL had been lodged but was yet to be issued).

The EMS is a high level document outlining Tarrawonga Coal's proposed strategy (objectives and key performance outcomes) to manage environmental issues. The EMS does not appear to be based upon a risk assessment. Such an assessment may assist Tarrawonga Coal prioritise environmental issues and enable management effort to be directed to the higher risk areas.

The EMS states that specific monitoring programs will be appended to the EMS and updated as warranted. This is currently not the case. The EMS should reference the various management and monitoring plans that have been developed and ensure that this list is kept up to date.

## 6 Review of the adequacy of Environmental Management, the EMS and the EMP

The Environmental Management Responsibility section does not reflect current operations. The EMS states that Roche Mining has been awarded the contract for mining on the site when Tarrawonga Coal is undertaking mining activities. The role of all personnel with environmental responsibilities should be outlined including the Environmental Manager. The Figure presenting the overall environmental organisational structure for the mine needs to be updated.

The EMS would benefit by the addition of discussion of the following issues:

- Quality control methods (including procedures for ensuring plans are updated, distributed and posted on the company website);
- Reporting requirements (including annual reporting (AEMR, EPA Annual Returns), quarterly monitoring reports prepared for the CCC meetings and reporting of incidents and non compliances to regulatory authorities);
- Record keeping requirements;
- Training requirements (outline of the induction process, toolbox talks etc); and
- Review process (outline the process for external (eg DPI, DoP) and internal reviews / audits).

The Tarrawonga Coal EMS does not appear to currently be a 'living' document i.e. there was little evidence of its formal implementation, although a number of requirements detailed in the EMS were being addressed.

A formal Environmental Management System does not currently exist for the site, however some elements of an Environmental Management System (according to the standard ISO 14001:2004) are utilised on site. The EMS includes environmental objectives and key performance outcomes which could form part of an Environmental Management System (to the requirements of the standard ISO 14001:2004).

### 6.3 Environmental Monitoring Program (EMP)

There are a number of environmental management plans and an environmental monitoring program which have been prepared for Tarrawonga Coal mine. These include the following:

- Environmental Monitoring Program - approved by the DoP by letter dated 28 March 2007.
- Air Quality Monitoring Program – approved by the DoP by letter dated 16 February 2006.
- Archaeological and Cultural Heritage Management Plan - approved by the DoP by a letter dated 21 December 2005.
- Groundwater Contingency Plan – evidence that the plan was approved by the DoP was not available.
- Flora and Fauna Management Plan - approved by the DoP by letter dated 21 March 2007. The amended plan was approved by the DoP by letter dated 21 May 2007).
- Blasting Monitoring Program - approved by the DoP by letter dated 16 February 2006. The amended Program was approved by the DoP by letter dated 23 December 2008.
- Site Water Management Plan - approved by the DoP by letter dated 27 February 2006. The amended Site Water Management Plan was approved by the DoP by letter dated 17 October 2007.
- Noise Monitoring Program - approved by the DoP by letter dated 27 February 2006.
- Water Crossing Management Plan - approved by the DoP by letter dated 21 December 2005.
- Road Noise Management Plan - approved by the DoP by letter dated 16 February 2006.

A number of plans require amendments to more accurately affect current site operations including:

## 6 Review of the adequacy of Environmental Management, the EMS and the EMP

- Site Water Management Plan (to reflect current storage dams and revised water balance);
- Noise Monitoring Plan (to reflect recently revised monitoring requirements);
- Air Quality Monitoring Plan (to reflect current monitoring locations); and
- Environmental Monitoring Program (to reflect changes in monitoring requirements and locations).

It is recommended that a program is established to periodically review the monitoring and management plans to ensure they are updated.

### 6.4 Environmental Management Systems Recommendations

The following areas for improvement in environmental management were observed by URS during the site visit. This section provides URS' recommendations to improve environmental management systems at Tarrawonga Coal Mine:

- The EMS is out of date and does not appear to be a "living" document.  
**URS Recommendation:** It is recommended that Tarrawonga Coal revise the EMS to reflect the current name of the mine, current site operations, current licenses and current responsibilities. The EMS should reference the various management and monitoring plans that have been developed and ensure that this list is kept up to date. In addition the EMS would benefit by the addition of discussion of quality control procedures, reporting requirements, record keeping procedures, training requirements and the review process.
- Tarrawonga Coal undertakes environment inspections however these are not documented.  
**URS Recommendation:** It is recommended that a site inspection process, potentially including a checklist or form is developed for checking and documenting the effectiveness of environmental controls. The process for conducting the site inspections (eg frequency, by whom, how identified issues are communicated and auctioned etc) should be outlined in the EMS.
- A number of the monitoring programs and management plans are out of date.  
**URS Recommendation:** It is recommended that the environmental plans and programs be reviewed and updated to reflect current operations and a program is established to periodically review the monitoring and management plans to ensure they are kept up to date.



## Summary of Recommendations

A number of recommendations have been made throughout the report as a result of the findings of the independent environmental audit. These are summarised in Table 7-1 below.

**Table 7-1 Summary of recommendations of independent environmental audit.**

Reference	Recommendation
A1	It is recommended the monthly meetings to discuss cumulative impacts between Idemitsu Boggabri Coal and Tarrawonga Coal continue and minutes are retained on file.
A2	It is recommended the Site Water Management Plan is amended to reflect current storage dams and revised water balance and provided to the DECC, DPI, DWE and DoP.
B2 & Sch 4 CoC 6	It is recommended Tarrawonga Coal continue to monitor noise levels and implement actions to mitigate exceedances as necessary.
B3 & Sch 4 CoC 6	It is recommended the LAmax, LA1, LA90, LAmin are included in the attended monitoring program and that a discussion of compliance with the LA1 criteria is provided in the monitoring reports by Spectrum Acoustics.
Sch 4 CoC 6	It is recommended that Tarrawonga Coal continues to consult with the DECC regarding noise criteria exceedances.
B5 & Sch 4 CoC 31	It is recommended that Tarrawonga Coal provide Council with the Groundwater Contingency Plan and the Flora and Fauna Management Plan.
Sch 4 CoC 32	It is recommended that Tarrawonga Coal engages consultants to conduct independent review on surface and groundwater monitoring and observable trends.
B14	It is recommended that Tarrawonga Coal ensures the Environmental Monitoring Reports presented at CCC meetings include lead levels as part of the summary of groundwater monitoring results
Section 4.2	It is recommended that where a complaint follow up action involves other people (eg notifying Toll Manager to contact resident) the final follow up action taken to close out the complaint should also be recorded on the complaints form.
Section 4.3	It is recommended that a formalised system is established and implemented for checking the performance of contour drains and other sediment and erosion control structures following significant rainfall
Section 4.9	<p>Although a Rehabilitation Plan is not required by the CoC it is considered best practice that a plan is developed to provide a systematic approach to rehabilitation. This plan should include:</p> <ul style="list-style-type: none"> <li>○ Formally defined Standards and rehabilitation closure criteria as defined by representative native vegetation communities around the mine;</li> <li>○ Systematic approach to rehabilitation and should include detailed design of structures (e.g. contours), procedures for rehabilitation (e.g. top soil depth, sub soil depth, seed mixes);</li> <li>○ Planned final landforms and a detailed description of final landuse;</li> <li>○ Detail a site specific monitoring program required to be conducted against the closure criteria and specifications and how monitoring is to be recorded. The monitoring program should assess the long term stability and functioning of the re-established ecosystems;</li> <li>○ Define an audit approach against all rehabilitation methodologies including expert third party review. This would cover experts on soil chemistry and management, flora and fauna management, drainage specialist etc;</li> <li>○ Define actions to be taken if closure criteria and rehabilitations standards are not being met;</li> <li>○ Define maintenance approaches to the rehabilitation such as weed management;</li> <li>○ How external stakeholders such as the DPI, DoP and community provide input to the rehabilitation plan and monitoring on an ongoing basis eg through annual AEMR and other inspections etc;</li> <li>○ The process for sign off of rehabilitated land with the DPI;</li> <li>○ How the rehab plan will be updated to reflect lessons learnt and emerging/improved rehabilitation practices;</li> <li>○ The incorporation of mine planning in mine closure planning.</li> </ul>

## 7 Summary of Recommendations

Reference	Recommendation
Section 4.9 & Sch 4 CoC 48	It is recommended that topsoiling and revegetation be conducted as soon as possible on the southern batter to prevent weeds and erosion from occurring and to get final revegetation established as soon as practicable (subject to growing seasons, rainfall etc).
Sch 4 CoC 1	It is recommended that Tarrawonga Coal continues to monitor deposited dust at additional monitoring site adjacent to Forest View and if exceedances of dust goal continue, review with IBC and implement additional measures as appropriate.
Sch 4 CoC 23	It is recommended that Tarrawonga Coal continues to monitor storage dam levels at discharge points and manage water to avoid discharges. Continue to monitor water quality and confirm SWMP initiatives are effective in managing discharges.
Sch 4 CoC 33	It is recommended that Tarrawonga Coal implements biodiversity offset strategy as per the EIS and Condition of Consent.
Sch 4 CoC 34	It is recommended that Tarrawonga Coal implements arrangements to provide long term security for the offset.
Sch 4 CoC 36	It is recommended that Tarrawonga Coal implements offset strategy and undertake performance reviews as required by the CoC.
Sch 4 CoC 36 & Section 4.9	It is recommended that Tarrawonga Coal increases the scope of the annual review of the Flora and Fauna Management Plan to include weed management and rehabilitation performance and report in the AEMR. The reports should be a tool for management to gain input on their rehabilitation techniques, how successful they have been towards a specific rehabilitation criteria, provide advice on what areas of rehabilitation requires maintenance or addressing and how site can improve rehabilitation practices for improved outcomes. The monitoring should fit into an overall Rehabilitation Plan as recommended in Section 4.9.
Sch 4 CoC 48	Although a Rehabilitation Plan is not required by the CoC it is considered best practice that a plan is developed. See Section 4.9 Recommendation.
Sch 4 CoC 48	It is recommended that Tarrawonga Coal seeds the batters of storage dam (SD16) in the vicinity of the Thuin property.
Sch 4 CoC 48	It is recommended that Tarrawonga Coal continues to work towards seeding the topsoil area.
Sch 4 CoC 51	It is recommended that Tarrawonga Coal address the DoP comment and include more comprehensive greenhouse gas emissions calculation in future AEMRs.
Sch 4 CoC 52	It is recommended that Tarrawonga Coal ensures all waste disposed and recycled is recorded in the Waste Register.
Sch 4 CoC 52	It is recommended that Tarrawonga Coal implements a more thorough system of monitoring and recording waste disposal and recycling to enable better investigation of ways to minimise waste generation.
Sch 4 CoC 54	It is recommended that Tarrawonga Coal confirms whether a Dangerous Goods Notification is held and if not, obtain from WorkCover NSW, and maintain on site.
Sch 4 CoC 54	It is recommended that Tarrawonga Coal improves general house keeping at the contractors waste storage area, specifically storage of waste solvents, hydrocarbons and batteries.
Sch 4 CoC 54	It is recommended that Tarrawonga Coal monitor the performance of the newly constructed concrete apron at the fuel fill point within the fuel farm area.
ch 5 CoC 3	It is recommended that Tarrawonga Coal undertakes a review of relevant human health studies and update the brochure to the satisfaction of the DG.
Sch 5 CoC 10, B5 & B11	It is recommended that Tarrawonga Coal ensures the website is kept up to date and amended plans and new plans are included on the website. The following should be included on the website: <ul style="list-style-type: none"> <li>- 2007-2008 AEMR</li> <li>- Environmental Monitoring Program</li> <li>- Bushfire Management Plan</li> <li>- Groundwater Contingency Plan</li> <li>- Amended Site Water Management Plan</li> </ul>

## 7 Summary of Recommendations

Reference	Recommendation
B5 and B11	It is recommended that a process is established for ensuring revised plans are uploaded onto the website.
Sch 5 CoC 10	It is recommended that Tarrawonga Coal confirms with NSC and GSC whether Plans and AEMRs provided are made publically available at the NSC and GSC offices.
Sch 5 CoC 11	It is recommended that Tarrawonga Coal confirms with NSC and GSC whether Monitoring Reports provided during CCC meetings are made publically available at the NSC and GSC offices.
Section 6.4	It is recommended that Tarrawonga Coal revise the EMS to reflect the current name of the mine, current site operations, current licenses and current responsibilities. The EMS should reference the various management and monitoring plans that have been developed and ensure that this list is kept up to date. In addition the EMS would benefit by the addition of discussion of quality control procedures, reporting requirements, record keeping procedures, training requirements and the review process.
Section 6.4	It is recommended that a site inspection process, potentially including a checklist or form is developed for checking and documenting the effectiveness of environmental controls. The process for conducting the site inspections (eg frequency, by whom, how identified issues are communicated and auctioned etc) should be outlined in the EMS.
Section 6.4	It is recommended that the environmental plans and programs be reviewed and updated to reflect current operations and a program is established to periodically review the monitoring and management plans to ensure they are kept up to date.



## Limitations

URS Australia Pty Ltd (URS) has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of Tarrawonga Coal Pty Ltd (Tarrawonga Coal) and only those third parties who have been authorised in writing by URS to rely on the report. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report. It is prepared in accordance with the scope of work and for the purpose outlined in the Proposal dated 11 November 2008.

The methodology adopted and sources of information used by URS are outlined in this report. URS has made no independent verification of this information beyond the agreed scope of works and URS assumes no responsibility for any inaccuracies or omissions. No indications were found during our investigations that information contained in this report as provided to URS was false.

This report was prepared between the 26 March 2009 and 27 May 2009 and is based on the conditions encountered and information reviewed at the time of preparation. URS disclaims responsibility for any changes that may have occurred after this time.

This report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.



## Appendix A Consent Condition Assessment

A



**SCHEDULE 3  
ADMINISTRATIVE CONDITIONS**

**Obligation to Minimise Harm to the Environment**

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

**Evidence Sighted:**

Whilst some non-compliances were recorded relating to exceedances of water discharge limits, noise levels and dust goals, in general the site appeared to be compliant with the CoC and the site's EPL. At the time of the audit there had been no occurrence of any incidents which were believed to have caused or threatened to cause material harm.

**Compliance Status:**

Generally in compliance, refer to non-compliances identified during audit.

**Terms of Approval**

2. The Applicant shall carry out the development generally in accordance with the:

- (a) DA-88-4-2005;
- (b) EIS titled *Environmental Impact Statement for the Proposed East Boggabri Coal Mine*, and *Specialist Consultant Studies Compendium*, dated May 2005, and prepared by R.W. Corkery & Co. Pty. Limited; and
- (c) conditions of this consent.

**Evidence Sighted:**

The Development has reportedly been carried out generally in accordance with the above documents. During the site visit, observations confirmed this to generally be the case.

The commitments made in the EIS were incorporated into the Environmental Management Strategy (EMS) and Environmental Management Plans. An assessment of the implementation of the Environmental Management Strategy and Plans is included in the main section of this audit report.

There have been no requests for modifications to the Conditions of Consent.

URS did not complete a detailed compliance assessment against all documents listed in this Condition of Consent.

**Compliance Status:**

Compliant.

3. If there is any inconsistency between the above, the conditions of this consent shall prevail to the extent of the inconsistency.

**Evidence Sighted:**

Noted.

**Compliance Status:**

Noted.

4. The Applicant shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:

- (a) any reports, plans or correspondence that are submitted in accordance with this consent; and
- (b) the implementation of any actions or measures contained in these reports, plans or correspondence.

**Evidence Sighted:**

The DoP provided comments following the submission of the 2006-2007 AEMR by letter dated 30 July 2007. The DPI reviewed the 2006-2007 AEMR and undertook an environmental inspection on the 29 August 2007. An Action Plan was prepared by the DPI and provided to Tarrawonga Coal by letter dated 17 September 2007.

The 2007-2008 AEMR included discussion of the implementation of the DPI Action Plan. .

The DoP undertook an audit of Tarrawonga Coal mine on the 30 January 2008. Following the audit the DoP provided a letter report outlining its findings of non-compliance and improvement opportunities. In response Tarrawonga Coal prepared an Action Plan (provided to the DoP by letter dated 28 February 2008).

The DPI reviewed the 2007-2008 AEMR and undertook an environmental inspection on the 17 June 2008. An Action Plan was prepared by the DPI and provided to Tarrawonga Coal by letter dated 14 July 2008. The DoP provided comments following submission of the 2007-2008 AEMR by letter dated 18 August 2008. It was reported that the actions taken to address the DoP and DPI comments will be discussed in the 2008-2009 AEMR.

The implementation of the Action Plans is discussed in the main section of this audit report.

**Compliance Status:**

Compliant.

### Limits on Approval

5. This consent lapses 12 years after the date it commences.

<b>Evidence Sighted:</b>
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Noted.

<b>Compliance Status:</b>
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Noted.

6. The Applicant shall not extract more than 2 million tonnes of ROM coal a year from the development.

<b>Evidence Sighted:</b>
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The 2007-2008 AEMR reported that 1,166,881 tonnes of ROM coal was extracted during the 1/05/07 to 30/4/08 reporting period. It was reported that based on the monthly extraction at the time of the audit the expected annual extraction for the 2008-2009 reporting period would be approximately 1.5 million tonnes of ROM coal.

<b>Compliance Status:</b>
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Compliant.

### Structural Adequacy

7. The Applicant shall ensure that all new buildings and structures are constructed in accordance with the relevant requirements of the BCA.

Note:

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

<b>Evidence Sighted:</b>
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The new buildings and structures constructed at the Tarrawonga Coal Mine included the workshop and the demountable site sheds.

A Final Occupation Certificate was issued by Narrabri Shire Council dated 23 April 2009. The certificate acknowledged that a construction certificate had been issued with respect to the plans and specifications for the building (construction certificate no. 185/2006).

<b>Compliance Status:</b>
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Compliant.

### Demolition

8. The Applicant 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.

<b>Evidence Sighted:</b>
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It was reported that there has been no demolition work carried out at the mine to date. It is noted this condition may be triggered in the future when the Piggery shed is removed.

<b>Compliance Status:</b>
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Compliant.

### Operation of Plant and Equipment

9. The Applicant shall ensure that all plant and equipment used on the site, or to transport coal along the transport route, are:

- (a) maintained in a proper and efficient condition; and
- (b) operated in a proper and efficient manner.

**Evidence Sighted:**

a) Tarrawonga Coal has developed a Mechanical Management Plan which outlines the management of engineering and maintenance activities undertaken on the Tarrawonga Coal Mine. The Plan defines competencies of personnel, establishes standards, defines procedures and establishes monitoring process for monitoring the effectiveness of the Maintenance and engineering Management Plan. An example of a Heavy Earthmoving Pre-Start Checklist dated 25/03/08 was observed.

It was reported that the haulage truck contractor 'Toll' is subject to its own maintenance requirements. It was also reported that the contract between Toll and Tarrawonga Coal includes key performance indicators including coal spills, oil spills and complaints.

It was reported that there have been no incidents recorded relating to on-site plant and equipment. One incident was recorded in 2007 relating to a Toll haulage truck splitting a hydraulic hose and leaking oil on the road.

It was reported that monitoring equipment is maintained and calibrated. The PM<sub>10</sub> unit is calibrated every two months and the calibration certificates provided by the contractors responsible for the monitoring. The noise loggers for the unattended noise monitoring are also calibrated by contractors and the certificates attached with the reporting.

b) It was reported that all operators have the necessary tickets to operate machinery. It was reported that Toll conduct daily toolbox talks with drivers as well as attending weekly meetings with Tarrawonga Coal and monthly meetings with Whitehaven. It was also reported that the Toll supervisor attends the Community Consultative Committee meetings to address community concerns relating to truck movements.

**Compliance Status:**

Compliant.

**Section 94 Contributions**

10. Within 3 months of the date of this consent, the Applicant shall develop (and following approval implement) a

Contributions Plan for the development in conjunction with the GSC and the NSC, and to the satisfaction of the director-General. The plan must:

- determine a fair and reasonable contribution towards the provision of public amenities/services; and
- include a program outlining how and when the proposed contributions will be provided.

**Evidence Sighted:**

Tarrawonga Coal made the following Section 94 contributions to Narrabri Shire Council and Gunnedah Shire Council:

- \$20,000 to Narrabri Shire Council towards the construction of a new amenities block at Jubilee Oval in Boggabri (letter of offer dated 7/12/05). The offer was accepted by Narrabri Shire Council by letter dated 23 December 2005; and

- \$20,000 to Gunnedah Shire Council towards the sesquicentenary celebrations to (letter of offer dated 12/12/05). The offer was accepted by Gunnedah Shire Council by letter dated 27 February 2006.

The DoP approved Tarrawonga Coal's Section 94 contributions by letter dated 16 February 2006.

**Compliance Status:**

Compliant.

**SCHEDULE 4  
SPECIFIC ENVIRONMENTAL CONDITIONS**

**AIR QUALITY**

**Impact Assessment Criteria**

1. The Applicant shall ensure that dust emissions generated by the development do not cause exceedances of the air quality criteria listed in Tables 1, 2 and 3 at any residence on, or on more than 25 percent of, any privately-owned land.

Pollutant	Averaging period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m <sup>3</sup>
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	30 µg/m <sup>3</sup>

*Table 1: Long-term Impact Assessment Criteria for Particulate Matter*

Pollutant	Averaging period	Criterion
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	50 µg/m <sup>3</sup>

*Table 2: Short-term Impact Assessment Criterion for Particulate Matter*

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m <sup>2</sup> /month	4 g/m <sup>2</sup> /month

*Table 3: Long-term Impact Assessment Criteria for Deposited Dust*

*Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 2003, AS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.*

**Evidence Sighted:**

TSP

The Air Quality Monitoring Plan states that 'No monitoring of TSP is proposed given the relationship between TSP and PM<sub>10</sub> and the preference of the DEC to record PM<sub>10</sub> concentrations'. The Air Quality Monitoring Plan was approved by the DoP by letter dated 16 February 2006.

PM<sub>10</sub>

PM<sub>10</sub> is monitored by Tarrawonga Coal at the Templemore property (EBA-4). Monitoring is also conducted at the Merriown property (EBA-1 / D7) by Idemitsu Boggabri Coal and the data shared with Tarrawonga Coal. These monitoring points are stipulated in the EPL for the Tarrawonga Coal Mine.

URS reviewed PM<sub>10</sub> monitoring results at the Templemore property and the Merriown property for the period June 2006 to February 2009. The results indicated compliance with the annual average criterion and the 24 hour criterion at both locations.

Deposited Dust

Deposited dust is currently monitored at eight locations by Tarrawonga Coal and at four locations by Idemitsu Boggabri Coal (IBC). Two of these monitoring locations (EB-10 and EB-11) were established in March 2007 in order to improve assessment of cumulative dust impacts. Monitoring was also previously conducted at the Jerralong property (EB-3) but was ceased in January 2009. Monitoring by Tarrawonga Coal at Tarrawonga (EB-7), Thuin (EB-8) and Pine Grove (EB-9) is additional to the monitoring stipulated by the EPL.

URS reviewed deposited dust monitoring results from Tarrawonga Coal and IBC for the period December 2005 to February 2009. The results indicated that whilst some months the total insoluble solids exceeded the goal at some locations the total insoluble solids annual average complied with the total insoluble solids annual average goal of 4g/m<sup>2</sup>/month at all locations with the exception of Forest View (D3) and Jerralong (EB-3).

The total insoluble solids annual average for Jerralong complied with the annual average goal in 2006 and 2007 but slightly exceeded the goal in the 2008 calendar year (4.2g/m<sup>2</sup>/month). Monitoring at the Jerralong property ceased in January 2009.

The total insoluble annual average for Forest View exceeded the annual average goal in 2006, 2007 and 2008. The annual average for the 2008 calendar year was 5.6g/m<sup>2</sup>/month and had decreased compared to the previous year. Tarrawonga Coal reported in the 2007-2008 AEMR that the high measured dust levels at this monitoring point are believed to be attributed to the increased truck and semi trailer use of adjacent gravel roads during the wheat harvest. This view was based on a review of wind roses which demonstrated that wind directions are predominantly NW and SE which would limit the contribution of dust loads at that monitor from the Tarrawonga site.

An additional monitor was installed in closer proximity to the mine sites and further from the adjacent gravel road. Data from this monitor was not available at the time of the audit.
<b>Compliance Status:</b> Non Compliant with deposited dust criteria at one site.
<b>Recommended action:</b> Continue to monitor deposited dust at additional monitoring site adjacent to Forest View and if exceedances of dust goal continue, review with IBC and implement additional measures as appropriate.

**Land Acquisition Criteria**

2. If the dust emissions generated by the development exceed the criteria in Tables 4, 5 and 6 at any residence on, or on more than 25 percent of, any privately-owned land, the Applicant shall, upon receiving a written request for acquisition from the landowner acquire the land in accordance with the procedures in conditions 10- 12 of schedule 5.

Pollutant	Averaging period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m <sup>3</sup>
Particulate matter < 10 µm (PM <sub>10</sub> )	Annual	30 µg/m <sup>3</sup>

Table 4: Long-term Land Acquisition Criteria for Particulate Matter

Pollutant	Averaging period	Criterion	Percentile <sup>1</sup>	Basis
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	150 µg/m <sup>3</sup>	99 <sup>2</sup>	Total <sup>3</sup>
Particulate matter < 10 µm (PM <sub>10</sub> )	24 hour	50 µg/m <sup>3</sup>	98.6	Increment <sup>4</sup>

Table 5: Short-term Land Acquisition Criteria for Particulate Matter

<sup>1</sup>Based on the number of block 24 hour averages in an annual period.

<sup>2</sup>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 the DEC.

<sup>3</sup>Background PM<sub>10</sub> concentrations due to all other sources plus the incremental increase in PM<sub>10</sub> concentrations due to the mine alone.

<sup>4</sup>Incremental increase in PM<sub>10</sub> concentrations due to the mine alone.

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m <sup>2</sup> /month	4 g/m <sup>2</sup> /month

Table 6: Long-term Land Acquisition Criteria for Deposited Dust

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 2003, AS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

<b>Evidence Sighted:</b> This condition has not been triggered however Tarrawonga Coal has acquired two neighbouring properties (Bollol Creek Station and Templemore).
<b>Compliance Status:</b> Not applicable.

### Operating Conditions

3. The Applicant shall carry out the development in a way that prevents and/or minimises the air pollution generated by the development.

#### Evidence Sighted:

A number of control procedures are outlined in the 2007-2008 AEMR. At the time of the site visit two water carts were observed in use along internal haul roads and trucks were observed to be covered.

A blasting event was witnessed during the audit site visit. Whilst dust was observed during the blast it was noted that the dust dispersed shortly after the blast.

#### Compliance Status:

Compliant.

4. The Applicant shall:

- (a) ensure that trucks entering and leaving the mine site carrying loads with the potential to generate dust are covered at all times, except during loading and unloading; and
- (b) implement all practicable measures to minimise the off-site odour and fume emissions generated by any spontaneous combustion or blasting at the mine site, to the satisfaction of the Director-General.

#### Evidence Sighted:

a) It was reported that trucks have automatic slide tarpaulins to cover loads. It was reported that there have been some instances where tarpaulins have deteriorated and in response have been replaced. Trucks were observed to be covered at the time of the site visit.

b) It was reported that there have been two occasions of spontaneous combustion at the ROM stockpile. One occasion occurred over a weekend and the fire was extinguished approximately 1.5 hours later. The second occasion was responded to immediately minimising off-site odours and fumes.

#### Compliance Status:

Compliant.

### Monitoring

5. Prior to carrying out any development on the mine site, the Applicant shall prepare (and following approval implement) an Air Quality Monitoring Program for the development, in consultation with the DEC, and to the satisfaction of the Director-General. This Program must include an air quality monitoring protocol for evaluating compliance with the air quality impact assessment and land acquisition criteria in this consent.

#### Evidence Sighted:

An Air Quality Monitoring Plan was prepared by Tarrawonga Coal and approved by the DoP by letter dated 16 February 2006. Whilst formal correspondence regarding consultation with the DECC was not available it is noted that the DECC refer to the Air Quality Monitoring Plan in the EPL demonstrating that it has received a copy of the Plan.

#### Compliance Status:

Compliant.

#### Recommended action:

Revise Air Quality Monitoring Plan to reflect current monitoring locations.

### NOISE

#### Noise Impact Assessment Criteria

6. The Applicant shall ensure that the noise generated by the development, including the noise generated on the private sections of the transport route, does not exceed the noise impact assessment criteria presented in Table 7 at any residence on privately-owned land.

<b>Day (Construction Stage)</b>	<b>Day (Operational Stage)</b>	<b>Evening</b>	<b>Night</b>	<b>Night</b>
$L_{A10}(15 \text{ minute})$	$L_{Aeq}(15 \text{ minute})$	$L_{Aeq}(15 \text{ minute})$	$L_{Aeq}(15 \text{ minute})$	$L_{A1}(1 \text{ minute})$
40	35	35	35	45

Table 7: Noise Impact Assessment Criteria dB(A)

Note:

- Noise from the development is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary;
- To determine compliance with the  $L_{Aeq}(15 \text{ minute})$  noise limits in the above table, where it can be demonstrated that direct measurement of noise from the development is impractical, the DEC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.
- Noise from the development is to be measured at 1 metre from the dwelling façade to determine compliance with the  $L_{A1}(1 \text{ minute})$  noise limits in the above table.
- The noise emission limits identified in the above table apply under meteorological conditions of:
  - wind speeds of up to 3 m/s at 10 metres above ground level; or
  - temperature inversion conditions of up to 3°C/100m, and wind speeds of up to 2 m/s at 10 metres above ground level.

**Evidence Sighted:**

Quarterly attended noise monitoring and six monthly unattended monitoring is undertaken by acoustic consultants Spectrum Acoustics.

Attended monitoring is undertaken at four receivers (N1 Templemore, N2 Bollol Creek Station, N3 Tarrawonga and N4 Ambardo). The Templemore property was purchased by Tarrawonga Coal in May 2007 and the Bollol Creek Station property in June 2008. The EPL was revised to remove the requirement to monitor at Bollol Creek Station.

A number of exceedances were reported for the period from January 2007 to December 2008. These are summarised below:

- July 2007: exceedance at Pine Grove property during the day (5 dB) and Ambardo property during the evening (1 dB). The exceedance at Pine Grove was attributed to trucks driving over cattlegrid.

- September 2007: exceedance at Pine Grove property during the day (7 dB) and Ambardo property during the evening (1 dB). The exceedances at Pine Grove were attributed to a high number of truck movements on the haul road during the 15 minute monitoring period.

- January 2008: exceedance at Pine Grove property during the day (1 dB) and at Ambardo property during the day (1 dB)

- June 2008: exceedance at Ambardo property during the day (7 dB), Tarrawonga property during the day (4 dB), Pine Grove property during the day (8 dB), Bollol Creek Station property during the evening (1 dB) and Ambardo property during the evening (6 dB). The exceedances at the Pine Grove and Ambardo properties were attributed to severely adverse meteorological conditions.

- September 2008: exceedance at Ambardo property during the day (3 dB). This exceedance was attributed to a high number of truck movements on the haul road during the 15 minute monitoring period.

In response to the above exceedances Tarrawonga Coal undertook the following activities:

- removal of the cattlegrid;
- commencement of new policy with Toll (haulage contractor) to delay commencement of morning shift operations until 6:45am;
- ceasing of early morning short haul operation from Tarrawonga to the Canyon Site reducing number of trucks on the haul road by five;

In addition to the above, a representative from Toll attended the CCC meeting on the 18 February 2009 to discuss community concerns related to haulage trucks. During this meeting it was advised that Toll would trial running several empty trucks back to Tarrawonga by 10pm to park up on site for loading the next morning with the aim of reducing the number of trucks running to site in the morning and the associated noise impact.

The requirement for unattended monitoring was removed from the EPL in November 2008. Prior to this unattended monitoring was undertaken at the Templemore, Bollol Creek Station and Ambardo properties.

Results of the unattended monitoring undertaken for the period January 2007 to December 2008 showed some exceedances of the  $L_{A1}(1 \text{ minute})$  criterion during the night (defined by the EPA as 10 pm to 7 am) at all three monitoring locations. It is noted however that unattended monitoring records the total acoustic environment and therefore it is not possible to determine whether the exceedances were as a result of Tarrawonga Coal mine activities.

<p><b>Compliance Status:</b> Non Compliant.</p>
<p><b>Recommended action:</b> Continue to monitor noise levels and implement actions to mitigate exceedances as necessary. Continue to consult with the DECC regarding exceedances. Include <math>L_{A1(1\text{ minute})}</math> monitoring results and discussion of compliance with <math>L_{A1(1\text{ minute})}</math> criteria in attended monitoring reports provided by Spectrum Acoustics.</p>

**Road Traffic Noise Criteria**

7. The Applicant shall ensure that the noise generated by the development on public roads does not exceed the criteria in Table 8.

<b>Day/Evening</b>	<b>Night</b>	<b>Property</b>
$L_{Aeq(1\text{ hour})}$	$L_{Aeq(1\text{ hour})}$	
60	55	Any residence on privately-owned land.

Table 8: Road Traffic Noise Criteria dB(A)

<p><b>Evidence Sighted:</b> The noise monitoring results indicated that the noise generated by the mine on the public roads did not exceed the criteria specified above. Additional monitoring was conducted at the Kyalla property in September 2007 following complaints relating to traffic noise on Manilla Road. The worst case level of noise (<math>L_{Aeq(1\text{hour})}</math>) was measured to be 53.7 dB(A) which is below the 60 dB criteria for public roads.</p>
<p><b>Compliance Status:</b> Compliant.</p>

**Land Acquisition Criteria**

8. If the noise generated by the development exceeds the criteria in Table 9, the Applicant shall, upon receiving a written request from the landowner, acquire the land in accordance with the procedures in conditions 10-12 of schedule 5.

<b>Day/Evening/Night</b>	<b>Property</b>
$L_{Aeq(15\text{ minute})}$	
40	All privately-owned land.

Table 9: Land Acquisition Criteria dB(A)

**Notes:**

- The provisions of this condition do not apply during the Construction Stage of the mine; and
- Noise generated by the development is to be measured in accordance with the notes presented below Table 7.

<p><b>Evidence Sighted:</b> It was reported that this condition has not been triggered however Tarrawonga Coal have acquired the Templemore property and the Bollol Creek Station property.</p>
<p><b>Compliance Status:</b> Not applicable.</p>

**Operating Hours – Construction Stage**

9. During the Construction Stage, the Applicant is permitted to carry out development between 7 am to 6 pm Monday to Saturday, excluding public holidays. The Applicant shall notify the Department of the date of commencement and completion of construction activities.

<p><b>Evidence Sighted:</b> It was reported that construction activities were undertaken during the times specified by this condition. At the time of the audit all construction activities had been completed and operational activities were being undertaken. Tarrawonga Coal notified the DoP of its intention to commence construction by letter dated 1 March 2006. Evidence of DoP notification of completion of construction was not available.</p>
<p><b>Compliance Status:</b> Compliant.</p>

### Operating Hours – Operational Stage

10. During the Operational Stage, the Applicant is permitted to:

- (a) carry out processing on the mine site between 7 am to 10 pm Monday to Friday, and 7 am to 6 pm Saturday, excluding public holidays;
- (b) carry out open cut mining operations on the mine site between 7 am and midnight Monday to Friday, midnight and 3.30am Tuesday to Saturday, and 7 am and 6 pm Saturdays; and
- (c) undertake maintenance activities at any time Monday to Sunday.

Note: Operating hours do not apply to blasting (see condition 15).

#### Evidence Sighted:

It was reported that operating activities are undertaken within the times specified by the Condition of Consent. It was reported that two shifts are worked (7am to 4.30 pm Monday to Sunday and 5 pm to 3 am Tuesday to Saturday). There have been no community complaints relating to out of hours operational noise recorded to date.

#### Compliance Status:

Compliant.

### Monitoring

11. Prior to carrying out any development on the mine site, the Applicant shall prepare (and following approval implement) a Noise Monitoring Program for the development in consultation with the DEC, and to the satisfaction of the Director-General. This Program must include a noise monitoring protocol for evaluating compliance with the criteria in conditions 6 and 8.

#### Evidence Sighted:

A Noise Monitoring Program was developed by Tarrawonga Coal and approved by the DoP by letter dated 16 February 2006. Whilst formal correspondence regarding initial consultation with the DECC was not available it is noted that the DECC refer to the Noise Monitoring Plan in the EPL. Tarrawonga Coal are also in the process of reviewing the Noise Monitoring Plan (in particular removal of monitoring requirements) and this has been in consultation with the DECC.

#### Compliance Status:

Compliant.

### METEOROLOGICAL MONITORING

12. Prior to carrying out any development, the Applicant shall ensure that there is a suitable meteorological station operating in the vicinity of the development in accordance with the requirements in *Approved Methods for Sampling of Air Pollutants in New South Wales*, and to the satisfaction of the DEC and the Director-General.

#### Evidence Sighted:

A meteorological station is located in the car park adjacent to the Tarrawonga Coal mine site office. An audit undertaken by the DoP on the 30 January 2008 identified that temperature was not being measured at 10 metres as required by the EPL. In response a new temperature sensor was installed at 10 meters in March 2008.

#### Compliance Status:

Compliant.

### BLASTING & VIBRATION

#### Airblast Overpressure Limits

13. The Applicant shall ensure that the airblast overpressure level from blasting at the development does not exceed the criteria in Table 10 at any residence on privately-owned land.

Airblast overpressure level (dB(Lin Peak))	Allowable exceedance
115	5% of the total number of blasts in a 12 month period
120	0%

Table 10: Airblast Overpressure Impact Assessment Criteria

Note: The overpressure values in Table 12 apply when the measurements are performed with equipment having a lower cut-off frequency of 2 Hz or less. If the instrumentation has a higher cut-off frequency a correction of 5 dB should be added to the measured value. Equipment with a lower cut-off frequency exceeding 10 Hz should not be used.

**Evidence Sighted:**

During the audit period blast monitoring was undertaken at the following three properties in closest proximity to the mine site: Bollol Creek Station, Templemore and Tarrawonga.

URS reviewed blast monitoring results for the period 8 July 2006 to 31 March 2009. During this period an airblast overpressure level of 117 dBL was recorded at Bollol Creek Station in July 2007. It is noted that the Bollol Creek Station property was acquired by Tarrawonga Coal in June 2008 and is now project related.

All other results were below 115 dBL.

**Compliance Status:**

Compliant.

**Ground Vibration Impact Assessment Criteria**

14. The Applicant shall ensure that the ground vibration level from blasting at the development does not exceed the criteria in Table 11 at any residence on privately-owned land or noise sensitive location as defined in the DEC's Industrial Noise Policy.

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

Table 11: Ground Vibration Impact Assessment Criteria

**Evidence Sighted:**

The review of the monitoring results for the period 8 July 2006 to 31 March 2009 indicated no instances where the 5 mm/s peak particle velocity was exceeded.

**Compliance Status:**

Compliant.

**Blasting Hours**

15. The Applicant shall only carry out blasting at the development between 9 am and 5 pm Monday to Friday. No blasting is allowed at any other time or on Saturdays, Sundays or public holidays without the written approval of the DEC.

**Evidence Sighted:**

The time of the blast is recorded on the summary of the blast monitoring results. A review of the monitoring results for the period 8 July 2006 to 31 March 2009 indicated no instances where blasts were undertaken outside of these hours.

**Compliance Status:**

Compliant.

**BLASTING FREQUENCY**

16. The Applicant shall not carry out more than 1 blast a day at the site without the written approval of the DEC.

**Evidence Sighted:**

A review of the monitoring results for the period 8 July 2006 to 31 March 2009 indicated no instances where more than one blast was conducted per day.

**Compliance Status:**

Compliant.

## Monitoring

17. The Applicant shall monitor the airblast overpressure and ground vibration impacts of blasting operations of the development at privately-owned residences or noise sensitive locations as defined in the DEC's Industrial Noise Policy, using the units of measurement, frequency, sampling method, and locations specified in Table 12.

Parameter	Units of Measure	Frequency	Sampling Method	Measurement Location
Airblast overpressure	dB(Lin Peak)	During every blast	AS2187.2-1993 <sup>1</sup>	Not more than 3.5 m from a building or structure
Peak particle velocity	mm/s	During every blast	AS2187.2-1993	Not more than 30 m from a building or structure

Table 12: Airblast Overpressure and Ground Vibration Monitoring

<sup>1</sup>Standards Australia, 1993, AS2187.2-1993: Explosives - Storage, Transport and Use - Use of Explosives.

### Evidence Sighted:

During the audit period monitoring of the airblast overpressure level and the peak particle velocity was undertaken at the following three properties: Bollol Creek Station, Templemore and Tarrawonga. The requirement for monitoring at the Bollol Creek Station was removed in December 2008 as the property was acquired by Tarrawonga Coal and became project related.

Monitoring is reportedly conducted by Orica Explosives using the sampling methods specified above.

### Compliance Status:

Compliant

18. Prior to carrying out any blasting, the Applicant shall prepare (and following approval implement) a Blasting Monitoring Program for the development in consultation with the DEC, and to the satisfaction of the Director-General.

### Evidence Sighted:

A Blasting Monitoring Program was developed by R.W Cockery & Co on behalf of Tarrawonga Coal and approved by the DoP by letter dated 16 February 2006. The Blast Monitoring Program was amended to reflect changes to monitoring locations and requirements, specifically the removal of the requirement to monitor at the Bollol Creek Station property as this was acquired by Tarrawonga Coal and is now project related. The amended plan was approved by the DoP by letter dated 23 December 2008.

The initial Blast Monitoring Program stated in the introduction that the Plan was developed in consultation with the DECC Armidale.

### Compliance Status:

Compliant.

### Recommended action:

Ensure the DECC have been provided with a copy of the amended Blast Monitoring Program.

## Public Notice

19. During the life of the development, the Applicant shall:

- (a) operate a blasting hotline, or alternate system agreed to by the Director-General, to enable the public to get up-to-date information on blasting operations at the development; and
- (b) notify the landowner/occupier of any land within 2 kilometres of planned blasting operations at the development about this hotline or system on an annual basis.

### Evidence Sighted:

Tarrawonga Coal's pre-blasting notification strategy is documented in the Blast Monitoring Program which has been approved by the DoP. The Blast Monitoring Program commits to the following:

- providing written notification at least two weeks prior to the commencement of blasting of the proposed blasting timetable and duration, a plan showing the blast monitoring locations, the procedure for reporting possible blast related damage and the entitlement to an investigation of the damage claims and the dispute resolution procedure; and
- specific notification of individual blasts to any person who registers an interest in being notified about the blasting schedule. Notification involves a letter nominating a planned blast date hand delivered the day before each blast and a telephone call during the morning of the blast confirming the blast will proceed.

It was reported that the general complaints line is advertised annually.

A Blasting Notification Checklist for a blast undertaken on the 2 April 2009 was observed.

**Compliance Status:**

Compliant.

**Property Inspections**

20. At least 2 months prior to carrying out any blasting at the development, the Applicant shall advise all landowners within 2 kilometres of planned blasting operations on the mine site, and any other landowner nominated by the Director-General, that they are entitled to a property inspection.

**Evidence Sighted:**

Letters advising landowners that they are entitled to a property inspection were sent to the owners of the following properties within 2 kilometres of planned blasting operations: Tarrawonga, Templemore and Bollol Creek Station (observed letters dated 22 December 2005).

**Compliance Status:**

Compliant.

21. If the Applicant receives a written request for a property inspection from any landowner within 2 kilometres of planned blasting operations at the development, or any other landowner nominated by the Director-General, the Applicant shall within 2 months of receiving this request:

- (a) commission a suitably qualified person, whose appointment has been approved by the Director-General, to inspect the condition of any building or structure on the land, and recommend measures to mitigate any potential blasting impacts; and
- (b) give the landowner a copy of this property inspection report.

**Evidence Sighted:**

Requests for property inspections were received from the owners of the Tarrawonga property, Templemore property and Bollol Creek Station property.

A Structural Engineering Building Investigation Report was prepared for each of the above properties by Kelley Covey Group (observed copies of reports). It was reported that the landowners were provided with a copy of the inspection report.

Kelley Covey Group was approved as being suitably qualified to undertake the inspections by the DoP by letter dated 21 December 2005.

**Compliance Status:**

Compliant.

**Property Investigations**

22. If any landowner within 2 kilometres of planned blasting operations at the development, or any other landowner nominated by the Director-General, claims that his/her property, including vibration-sensitive infrastructure such as water supply or underground irrigation mains, has been damaged as a result of blasting at the development, the Applicant shall within 2 months of receiving this request:

- (a) commission a suitably qualified 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 investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant shall repair the damages to the satisfaction of the Director-General.

If the Applicant or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 2).

**Evidence Sighted:**

It was reported that no claims of damage from blasting operations have been received from any landowners within 2 kilometres of blast operations at the mine.

It was reported that a complaint regarding property damage was received from a property located approximately 8 km to the west of Tarrawonga Coal Mine and in response an inspection was undertaken by a structural engineer. It was reported that the findings indicated the damage was unlikely to be as a result of blasting activities at Tarrawonga Coal mine.

**Compliance Status:**

Compliant.

## SURFACE & GROUND WATER

### Pollution of Waters

23. Except as may be expressly provided by a DEC licence, the Applicant shall comply with section 120 of the *Protection of the Environment Operations Act 1997* during the carrying out of the development.

#### Evidence Sighted:

Surface water at the site is either directed to 'clean water' storage dams or 'dirty water' sediment basins. Dirty water is captured within two catchments on the mine site ('disturbed areas' and 'open cut' catchments). Sediment basins, storage dams and associated banks and drains were designed and constructed by the Department of Lands – Soil Services personnel.

During the previous AEMR reporting period from May 2007 to May 2008, suspended solids exceeded the EPL limit (50 mg/L 100 percentile limit) on two occasions (17 January and 6 February 2008). An additional discharge off site was recorded on the 7 October 2008 which exceeded the EPL suspended solids limit and the pH limit (6.5-8.5).

No exceedances of the EPL oil and grease limits were recorded.

#### Mine Discharge Event 17 January 2008

This discharge event followed 124.8 mm rain in December 2007 and a further 55.8 mm on rain on the 16<sup>th</sup> and 17<sup>th</sup> January 2008. It was reported to be a minor discharge with the water tending to pool adjacent to the site boundary. A TSS level of 837 mg/L was measured at SD-17. The high sediment load was due to the failure of a recently constructed waterway (series of drop structures draining contour banks) on the western face of the rehabilitated emplacement area.

#### Mine Discharge Event 6 February 2008

This discharge event followed additional rainfall in February following on from high velocity rainfall in December 2007 and January 2008. Discharges occurred from storage dams SD-9 and SD-17. A TSS level of 476 mg/L was measured at DS-17. The source of the sediment was related to the eroded waterway which could not be repaired after its initial failure (described above) due to the surface being too wet to allow machinery on site.

Following the discharge event in late February and early March 2008, the waterway was re-constructed by removing topsoil and subsoil by scraper and dozer and rock placed in the waterway to provide for full rock lining. The rock lined waterway was completed in mid April with seed and fertiliser spread across the waterway to provide for groundcover establishment between the rocks.

The above discharge events were reported to the DECC by email on the 8 February 2008. A report was also provided dated 7 February 2008 providing additional details of the discharge event.

An inspection was undertaken by the DECC on the 1 April 2008. A report was provided to the DECC dated 2 April 2008 outlining the details of the discharge events and the plan for future water management at the site.

One of the actions committed to as a result of this discharge was to conduct a full water balance calculation over the site which would also identify storage capacity against storage requirements at the western end where SD-7 and SD-17 are located. This review was conducted by Department of Lands – Soil Services personnel.

The rock waterway was inspected during the audit inspection. Grass was observed to have grown between the rocks and the waterway appeared to be stable.

#### Mine Discharge Event 7 October 2008

This discharge event followed 39 mm of rainfall on the 6 October 2008 and whilst water was discharged from the dam it was reported that it pooled at the lease boundary and did not leave the site. It was reported that pump outs from the dam in September following 80 mm of rain reduced the potential for significant discharge.

#### Compliance Status:

Non compliant.

#### Recommended actions:

Many of the aspects of non compliance have already been addressed.

Continue to monitor storage dam levels at discharge points and manage water to avoid discharges. Continue to monitor water quality and confirm SWMP initiatives are effective in managing discharges.

#### Discharge Limits

24. Except as may be expressly provided by a DEC Environment Protection Licence, the Applicant shall only discharge water from the mine site in compliance with the limits in Table 13.

Pollutant	Units of measure	50 percentile concentration limit	90 percentile concentration limit	100 percentile concentration limit
pH				6.5 ≤ pH ≤ 8.5
Total Suspended Solids	mg/L	20	35	50
Grease & Oil	mg/L			10

Table 13: Discharge Limits

Note: This condition does not authorise the discharge or emission of any other pollutants.

<p><b>Evidence Sighted:</b></p> <p>During the previous AEMR reporting period May 2007 to May 2008, suspended solids exceeded the EPL limit (50 mg/L 100 percentile limit) on two occasions (17 January and 6 February 2008). An additional discharge off site was recorded on the 7 October 2008 which exceeded the EPL suspended solids limit and the pH limit (6.5-8.5). These discharges are discussed under CoC No.23 above.</p> <p>There was an additional discharge event on the 17 February 2009 however monitoring results indicated parameters were within the limits specified by the CoC and the EPL.</p>
<p><b>Compliance Status:</b></p> <p>Non Compliant.</p>
<p><b>Recommended actions:</b></p> <p>Refer to CoC 23 above.</p>

**Watercourse Crossings**

25. Prior to constructing any road crossing of Bollol or Driggle Draggie Creeks, the Applicant shall prepare (and following approval implement) a Watercourse Crossing Management Plan to the satisfaction of the Director- General. This Plan shall include:

- (a) design of causeways and flow conveyance structures with:
  - adequate provision for fish passage in accordance with the relevant guidelines from the Department of Primary Industries (Fisheries);
  - unrestricted flow in the low flow section of the watercourse; and
  - a minimum practical width of the crossing in the low flow section of the watercourse;
- (b) measures to minimise the area of disturbance during construction;
- (c) measures to control erosion and sediment; and
- (d) measures to stabilise the banks of Bollol Creek, immediately downstream of the road crossing.

<p><b>Evidence Sighted:</b></p> <p>The Water Crossing Management Plan was approved by the DoP by letter dated 21 December 2005. The Plan was provided to the Department of Natural Resources for review (observed letter from the Department of Natural Resources dated 13 December 2005 commenting on Plan).</p>
<p><b>Compliance Status:</b></p> <p>Compliant.</p>

**Site Water Management Plan**

26. Prior to carrying out any development on the mine site, the Applicant shall prepare a Site Water Management Plan for the development in consultation with DEC, and to the satisfaction of the Director-General. This plan must include:

- (a) the predicted site water balance;
- (b) an Erosion and Sediment Control Plan;
- (c) a Surface Water Monitoring Program; and
- (d) a Groundwater Monitoring Program.

<p><b>Evidence Sighted:</b></p> <p>The Site Water Management Plan (Rev 0) was approved by the DoP by letter dated 27 February 2006. An amended Site Water Management Plan (Rev 1) was approved by the DoP by letter dated 17 October 2007. The amendments related to the locality of surface water management structures on the western boundary of the mining lease and to correct the locality of the nominated discharge point on that boundary.</p> <p>Formal correspondence demonstrating that the DECC was consulted on the amended Plan was not available. It is noted the original Plan is referenced in the EPL demonstrating the DECC had received a copy of this Plan.</p> <p>Further amendments to the Site Water Management Plan are required to reflect current site conditions.</p>
<p><b>Compliance Status:</b></p> <p>Compliant.</p>
<p><b>Recommended action:</b></p> <p>Further amend Site Water Management Plan to reflect current storage dams and revised water balance and provide copy to the DoP and the DECC.</p>

27. Each year, the Applicant shall:

- (a) review the site water balance for the development against the predictions in the EIS;
- (b) re-calculate the site water balance for the development; and
- (c) report the results of this review in the AEMR, to the satisfaction of the Director-General.

**Evidence Sighted:**

The 2007-2008 AEMR reported the water used by the site and the volumes obtained by various sources and compared this to the water requirement prediction made in the EIS. The water use for the reporting period (approximately 92ML) was reportedly consistent with the predictions made for water use in the EIS (89ML per year).

The AEMR reported that the Soil Conservation Service were engaged to undertake a review of the site water balance specifically looking at sediment storage shortfall that may exist on site and that following this review the Site Water Management Plan would be updated and provided to the relevant government agencies. The calculations conducted by the Soil Conservation Service were observed.

**Compliance Status:**

Compliant.

**Erosion and Sediment Control**

28. The Erosion and Sediment Control Plan shall:

- (a) be consistent with the requirements of the Department of Housing's *Managing Urban Stormwater: Soils and Construction* manual;
- (b) identify activities for the construction and operational phases of the development that could cause soil erosion and generate sediment;
- (c) describe the location, function, and capacity of erosion and sediment control structures; and
- (d) describe measures to minimise soil erosion and the potential for the migration of sediments to downstream waters, to the satisfaction of the Director-General.

**Evidence Sighted:**

The Erosion and Sediment Control Plan was incorporated into the Site Water Management Plan and was approved by the DoP by letter dated 27 February 2006.

**Compliance Status:**

Compliant.

**Surface Water Monitoring**

29. The Surface Water Monitoring Program shall include:

- (a) surface water impact assessment criteria;
- (b) a program to monitor the land in waste water utilisation area(s) and receiving waters;
- (c) a program to monitor the quality of water contained in, or discharged from, water storages (including the mining void) associated with the development;
- (d) a program to monitor surface water quality upstream and downstream of the development; and
- (e) a program to monitor the effectiveness of the Erosion and Sediment Control Plan.

**Evidence Sighted:**

The Surface Water Monitoring Program was incorporated into the Site Water Management Plan and was approved by the DoP by letter dated 27 February 2006.

**Compliance Status:**

Compliant.

**Groundwater Monitoring**

30. The Groundwater Monitoring Program shall include a program to:

- (a) regularly monitor the volume of groundwater seeping into the open cut mine workings; and
- (b) regularly monitor groundwater levels and quality in:
  - surrounding regional aquifers;
  - representative bores and wells used by surrounding landowners; and
  - alluvial aquifers in the vicinity of the development,

to the satisfaction of the Director-General.

**Evidence Sighted:**

The Groundwater Monitoring Program was incorporated into the Site Water Management Plan and was approved by the DoP by letter dated 27 February 2006.

**Compliance Status:**

Compliant.

### Groundwater Contingency Plan

31. Within 6 months of the commencement of development, the Applicant shall prepare a Groundwater Contingency Plan to the satisfaction of the Director-General. This Plan shall:

- (a) include a program to establish the natural variability of groundwater quality and quantity;
- (b) establish trigger levels, benchmarks and contingency criteria;
- (c) provide measures to mitigate any impacts of the mine on the quality or quantity of groundwater supplies available on privately-owned land; and
- (d) provide for negotiated agreements with affected landowners, including compensation where mining impacts result in increased extraction costs for landowners.

<p><b>Evidence Sighted:</b></p> <p>A Groundwater Contingency Plan was prepared however evidence of it being approved by the DoP was not available.</p>
<p><b>Compliance Status:</b></p> <p>Non Compliant.</p>
<p><b>Recommended action:</b></p> <p>Obtain DG approval of the Groundwater Contingency Plan.</p>

### Independent Review of Monitoring

32. Within 3 years of commencing the development, and every 3 years thereafter, unless the Director-General directs otherwise, the Applicant shall provide to the Department a review and report on surface and groundwater monitoring and observable trends. The report is to be completed by a suitably qualified and independent hydrogeologist, whose appointment has been approved by the Director-General.

<p><b>Evidence Sighted:</b></p> <p>Tarrawonga Coal reported that they are in the process of engaging consultants to conduct the independent review.</p>
<p><b>Compliance Status:</b></p> <p>Non Compliant.</p>
<p><b>Recommended actions:</b></p> <p>Engage consultants to conduct independent review.</p>

### FAUNA & FLORA

#### Biodiversity Offset Strategy

33. The Applicant shall implement, in accordance with best practice flora and fauna management, the Biodiversity Offset Strategy described in the EIS (Section 4.4.4.4 and Figure 2.18), and summarised in Table 16, or a refined version of the strategy developed in consultation with the DEC and the Department, and to the satisfaction of the Director-General.

Area	Size
Conservation of existing native vegetation, (as shown in Figure 2.18 of the EIS)	141 hectares (includes 30 hectares of White Box-Blakely's Red Gum-White Cypress community and 2 hectares of Belah community)
Stock exclusion zone (as shown in Figure 2.18 of the EIS)	132 hectares
Rehabilitation of disturbed areas with local native species of vegetation	269 hectares (including the area of the final void)

Table 16: Biodiversity Offset Strategy

<p><b>Evidence Sighted:</b></p> <p>It was reported that numerous discussions were held between Whitehaven Coal, its flora consultant (Mr Geoff Cunningham) and senior offices from the DECC in Armidale and Dubbo with a view of establishing alternative offsets to that proposed in CoC 33 above. A proposal was put forward to the DECC proposing a combined regional biodiversity offset strategy for the Tarrawonga coal mine, Whitehaven coal mine and two proposed coal mines in the area which were still at the environmental assessment stage (letter dated 15 March 2007). A letter to the DECC from Whitehaven Coal dated 24 July 2007 further developed the proposal and proposed an alternative offset area comprising of 1,000 hectares of remnant closed woodlands adjoining the Kelvin State Forest.</p> <p>A letter from Whitehaven Coal to the DECC dated 22 August 2008 indicated discussions regarding the regional biodiversity offset proposal were ongoing.</p> <p>It was reported during the audit site inspection that the regional biodiversity offset proposal was withdrawn due to difficulties identifying vegetation communities for a 'like for like' swap. It was reported that the original offset proposed by this CoC will be implemented.</p>
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<p><b>Compliance Status:</b> Non Compliant.</p>
<p><b>Recommended action:</b> Implement biodiversity offset strategy as per the EIS and this CoC.</p>

**Agreement to Conserve Offset Areas**

34. Within 12 months of the date of this consent, the Applicant shall implement suitable arrangements to provide long-term security for the offset, to the satisfaction of the Director-General.

*Note: The long-term security of the offset can be achieved through one, or a combination, of the following: Deed of Agreement with the Minister, rezoning the land under the Narrabri Local Environment Plan, caveats on the title under the Conveyancing Act 1919, etc..*

<p><b>Evidence Sighted:</b> As discussed above, Whitehaven Coal was seeking to implement an alternative biodiversity strategy and as such is yet to implement arrangements to provide long-term security for the offset.</p>
<p><b>Compliance Status:</b> Non Compliant.</p>
<p><b>Recommended action:</b> Implement arrangements to provide long term security for the offset.</p>

**Flora and Fauna Management Plan**

35. Within 6 months of commencement of any development, the Applicant shall prepare (and following approval implement) a Flora and Fauna Management Plan for the site, in consultation with the DEC, and to the satisfaction of the Director-General. This plan must include:

- (a) a description of the offset strategy in broad terms, including its objectives and its relationship to the rehabilitation of the mine over time;
- (b) completion criteria for the offset strategy;
- (c) a description of what actions and measures will be implemented over the life of the mine;
- (d) a flora and fauna monitoring program that is based on sound statistical principles; and
- (e) a description of the procedures that would be implemented to:
  - salvage and reuse material from the site;
  - clear vegetation on site;
  - collect and propagate seed from local areas;
  - control weeds and feral pests; and
  - control access to the offset areas.

<p><b>Evidence Sighted:</b> The Flora and Fauna Management Plan was approved by the DoP by letter dated 21 March 2007. An amended Flora and Fauna Management Plan was approved by the DoP by letter dated 21 May 2007. The Plan acknowledged that a copy had been provided to the DECC in Armidale for comment.</p>
<p><b>Compliance Status:</b> Compliant.</p>

**Review and Reporting**

36. The Applicant shall:

- (a) review the performance of the offset strategy and the Flora and Fauna Management Plan annually; and
- (b) report on this review in the AEMR, to the satisfaction of the Director-General.

<p><b>Evidence Sighted:</b> As the offset strategy is yet to be implemented (refer CoC 34 and 34 above) a review of its performance has not been undertaken.  A formal review of the performance of the Flora and Fauna Management Plan has not been undertaken. Some discussion of results from the flora monitoring (conducted by Geoff Cunningham Natural Resource Consultants) and fauna monitoring (conducted by Countrywide Ecological Services) is included in the AEMR.</p>
<p><b>Compliance Status:</b> Non Compliant.</p>
<p><b>Recommended action:</b> Implement offset strategy and undertake performance reviews as required by the CoC.  Increase the scope of the annual review of the Flora and Fauna Management Plan to include weed management and rehabilitation performance and report in the AEMR.</p>

## **ABORIGINAL HERITAGE**

### **Destruction of Aboriginal Sites**

37. The Applicant may destroy sites NAS01 and NIS01, and undertake salvage of the artefacts contained in these sites, to the satisfaction of the DEC. Representatives of the local Aboriginal community may, subject to the conditions of a Care and Control permit, relocate the artefacts contained in these sites to the Cumbo Gunerah Keeping Place.

#### **Evidence Sighted:**

Consent to carry out the destruction of an aboriginal object/place was received from the DECC for the above sites by letter dated 10 October 2005.

An assessment of compliance with the conditions included in the consent to destroy aboriginal objects was not undertaken as part of this audit.

#### **Compliance Status:**

Compliant.

### **Archaeology and Cultural Heritage Management Plan**

38. Prior to the commencement of any activities involving ground disturbance on the mine site, the Applicant shall prepare (and following approval implement) an Archaeology and Cultural Heritage Management Plan, in consultation with the DEC, the Red Chief Local Aboriginal Land Council (LALC) and the Bigundi Bianne Gunnedar Traditional People, and to the satisfaction of the Director-General. This plan must:

- (a) describe a conservation program for Aboriginal cultural heritage during the development (including sites NAS02 and NST1);
- (b) establish a consultation protocol, including regular meetings, with the local Aboriginal community for Aboriginal cultural heritage management on-site during the development;
- (c) make provision for the local Aboriginal community to monitor works at the development that occur in areas considered by the local Aboriginal community to be culturally sensitive;
- (d) describe the procedures that would be implemented if any heritage or archaeological sites were discovered during the development;
- (e) describe a contingency plan and reporting procedure should damage to Aboriginal sites or places occur at the development; and
- (f) describe the induction and training program to be undertaken by all employees and contractors in respect of cultural heritage awareness and protection.

#### **Evidence Sighted:**

An Archaeology and Cultural Heritage Management Plan was prepared in consultation with the Red Chief Local Aboriginal Land Council, the NSW National Bigundi Biame Gunnedarr Traditional People and the DECC. Details of the consultation are provided in the Plan.

The Plan was approved by the DoP by letter dated 21 December 2005.

#### **Compliance Status:**

Compliant.

### **Reporting**

39. The Applicant shall give a detailed progress report on the measures implemented to preserve and protect Aboriginal cultural heritage in the AEMR.

#### **Evidence Sighted:**

The AEMR includes a section on Aboriginal heritage management.

#### **Compliance Status:**

Compliant.

## **TRAFFIC & TRANSPORT**

### **Transport Route**

40. The Applicant shall ensure that:

- (a) coal from the mine site is only transported along the private sections of the transport route, Rangari Road, Hoad Lane, Blue Vale Road, and the Kamilaroi Highway to the Whitehaven Siding coal handling and preparation plant;
- (b) trucks travelling to and from the mine site do not exceed 40 kilometres per hour in the vicinity of the school bus when it is operating on Hoad Lane; and
- (c) spillage from coal haulage vehicles is minimised; and
- (d) any spillage is promptly managed to avoid harm to the environment.

**Evidence Sighted:**

- a) It was reported that the coal transport route described above is used as it is the shortest and most direct transport route. It was reported that the Toll trucks have a GPS tracking system installed which could be checked if it was suspected that a different route was being used.
- b) It was reported that the school bus has been provided with a two way radio to enable the bus driver to notify the truck drivers of the bus' position. There have been no complaints received regarding speeding trucks.
- c) Trucks are required to be covered during transport. It was reported that there was a period where occasional pieces of coal came off trucks and in response Toll engaged members from the local Aboriginal group to check the haul route and collect any pieces of coal that landed on the roadside.
- d) It was reported that there was one incident where a truck rolled over resulting in a coal spill next to the overload stockpile.

During the audit site inspection trucks were observed to be covered and there was no visual evidence of coal spillage on the roadway.

**Compliance Status:**

Compliant.

**TRANSPORT ROUTE CONSTRUCTION**

41. Prior to the transport of coal from the development, the Applicant shall:

- (a) design and construct a sealed road from the mine site to Whitehaven mine; and  
 (b) design and construct intersections of this road with Goonbri Road, Rangari Road and Hoad Lane, to the satisfaction of NSC.

**Evidence Sighted:**

The road from the mine site to Whitehaven mine was constructed and observed to be sealed. The intersections with Goonbri Road, Rangari Road and Hoad lane had been constructed. Letters were observed from Narrabri Shire Council (both dated 6 December 2005) certifying Council's consent to the construction of the intersections and section of haul road. A letter dated 7 April 2006 certified Council's consent for construction works on Boggabri – Manilla Road.

**Compliance Status:**

Compliant.

**Transport Route Construction Management Plan**

42. Prior to the commencement of any construction of the transport route, the Applicant shall prepare (and following approval, implement), a Construction Management Plan for the transport route construction works. This plan shall describe the measures that would be implemented to:

- (a) control erosion and sedimentation;  
 (b) protect and manage Aboriginal cultural heritage (including sites GGOS1, GGOS2, GGOS3 & GGOS4);  
 (c) measures to minimise impacts on native vegetation; and  
 (d) monitor the noise generated by the development to ensure that it complies with the criteria in conditions 7 and 8,  
 to the satisfaction of the Director-General.

**Evidence Sighted:**

The Construction Management Plan for the transport route construction works was approved by the DoP by letter dated 21 December 2005.

**Compliance Status:**

Compliant.

**Road Maintenance**

43. Prior to the transport of any coal from the mine site, the Applicant shall enter into road maintenance agreements with NSC and GSC for public roads, within Narrabri and Gunnedah Shires respectively, that are used by traffic associated with the development, to the satisfaction of the respective Council. If agreement cannot be reached the matter shall be referred to the Director-General for resolution.

**Evidence Sighted:**

Whitehaven Coal Mining Pty Ltd entered into a road maintenance agreement with Gunnedah Shire Council to meet its requirements for the Tarrawonga Coal mine and Whitehaven Coal Mine.

Under this agreement Gunnedah Shire Council is responsible for maintaining the specified public roads with payment provided by Whitehaven Coal on a monthly basis.

A maintenance agreement was negotiated with Narrabri Shire Council specifying that East Boggabri Coal (now Tarrawonga Coal) will maintain the haul road to the mine at its cost for the duration of the mining operations (letter dated 6 December 2005).

**Compliance Status:**

Compliant.

## COAL TRANSPORTATION

44. The Applicant shall only dispatch coal from the site by road between the hours of;

- (a) 7 am to 9.15 pm Monday to Friday;
- (b) 7 am to 5.15 pm Saturday; and
- (c) at no time on public holidays.

<b>Evidence Sighted:</b> It was reported that coal is dispatched from site during the hours specified above. It was reported that if there was reason to suspect this wasn't the case a check could be conducted using the GPS tracking system on board the Toll trucks.
<b>Compliance Status:</b> Compliant.

## Internal Roads

45. Within 6 months of the commencement of construction works at the mine site, the Applicant shall tar seal the mine access road to the mine facilities area.

<b>Evidence Sighted:</b> The mine access road to the mine facilities area was observed to be tar sealed.
<b>Compliance Status:</b> Compliant.

## Road Noise Management Plan

46. Prior to the transport of any coal from the mine site, the Applicant shall produce and implement a combined Road Noise Management Plan for the development and the Whitehaven mine, including full consideration of the combined impacts of traffic associated with both developments, in consultation with NSC and GSC, and to the satisfaction of the Director-General.

<b>Evidence Sighted:</b> The Road Noise Management Plan was prepared and provided to Gunnedah Shire Council and Narrabri Shire Council for comment on the 19 December 2005. A response was provided by Narrabri Shire Council commenting that the Plan was satisfactory (letter dated 9 January 2006). The Road Noise Management Plan was approved by the DoP by letter dated 16 February 2006.
<b>Compliance Status:</b> Compliant.

## MONITORING

47. The Applicant shall:

- (a) keep records of the:
  - amount of coal transported from the mine site each year; and
  - number of coal haulage truck movements generated by the development; and
- (b) include these records in the AEMR.

<b>Evidence Sighted:</b> The amount of coal transported from the mine site each year is determined from the records maintained at the wash-plant. The number of coal haulage truck movements generated by the development is calculated based on the amount of coal transported and the average volume per truck. The results are provided in the AEMR.
<b>Compliance Status:</b> Compliant.

## VISUAL IMPACT

### Visual Amenity

48. The Applicant shall carry out the development in a way that prevents or minimises the visual impacts of the development, including:

- (a) design and construction of development infrastructure in a manner that minimises visual contrasts; and
- (b) progressive rehabilitation of mine overburden emplacements (particularly outer batters), including partial rehabilitation of temporarily inactive areas and proposed topsoil storage stockpiles, to the satisfaction of the Director-General.

**Evidence Sighted:**

- a) The building infrastructure is not visible from the public road. A green colour scheme was chosen to minimise contrast.
- b) Some rehabilitation has been undertaken and is reported in the AEMR. Rehabilitation is guided by the conceptual plans provided in the Mining Operations Plan (MOP) as no specific Rehabilitation Plan has been developed.

It was reported that rehabilitation efforts to date have focused on the western emplacement area as it has the highest visibility. Progressive rehabilitation of other areas of the site has been minimal.

The topsoil stockpile was observed to be bare during the audit site. It was reported that there were plans to seed the stockpile in early April 2009.

The southern emplacement area was observed to be bare during the audit site inspection. It was reported that there were plans to shape the banks in early April 2009.

The batters of the storage dam in the vicinity of the Thuin property (SD-16) were observed to be bare. It was reported that these batters were seeded but did not take due to the lack of rainfall at the time. It is recommended that these batters are seeded to improve the stability of the batters and visual impact of this storage dam.

**Compliance Status:**

Compliant.

**Recommended action:**

Although a Rehabilitation Plan is not required by the CoC it is considered best practice that a plan is developed. (refer to recommendations in the Rehabilitation Section of main report).

**Recommended action:**

Seed batters of storage dam (SD-16) in the vicinity of the Thuin property.

**Recommended action:**

Continue to work towards seeding the topsoil area.

**Recommended action:**

Continue to work towards shaping and seeding the southern batters.

49. If a landowner of any privately-owned residence within 2km of the mine site has direct views of the development from his/her dwelling, then the landowner may request the Applicant in writing to investigate ways to minimise the visual impact of the development on his/her dwelling. Within 1 month of receiving such a written request, the Applicant shall consult with the landowner to identify mutually acceptable mitigation measures. However, if at the end of this period an agreement cannot be reached on suitable mitigation measures, the Applicant shall:

- (a) commission a suitably qualified person whose appointment has been approved by the Director-General, to investigate ways to minimise the visual impacts from the development on the landowner's dwelling; and  
 (b) give the landowner a copy of the visual impact mitigation report.

If both parties agree on the measures that should be implemented to minimise the visual impact from the development, then the Applicant shall implement these measures to the satisfaction of the Director-General.

If the Applicant and the landowner disagree on the measures that should be implemented to minimise the visual impact from the development, then either party may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process (see Appendix 2).

**Evidence Sighted:**

There have reportedly been no written requests from landowners to undertake a visual assessment.

**Compliance Status:**

Not applicable.

### Lighting Emissions

50. The Applicant shall:

- (a) take all practicable measures to mitigate lighting impacts from the mine site;
- (b) minimise lighting impacts within the *Siding Spring Observatory Dark Skies Region*; and
- (c) ensure that all external lighting associated with the development complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*, to the satisfaction of the Director-General.

#### Evidence Sighted:

It was reported that mobile lighting plant are used where required and they are positioned to face away from residences and not directed upwards. It was reported that where possible less sensitive tip sites are used at night (for example within the pit) to minimise impacts on sensitive receivers in the vicinity of the site.

#### Compliance Status:

Compliant.

### GREENHOUSE GAS EMISSIONS

51. The Applicant shall:

- (a) calculate the greenhouse gas emissions generated by the development;
- (b) investigate ways to reduce greenhouse gas emissions generated by the development, including the use of mains electric power to operate equipment associated with the coal processing plant; and
- (c) report on greenhouse gas emissions and abatement measures in the AEMR, to the satisfaction of the Director-General.

#### Evidence Sighted:

Greenhouse gas emissions are discussed in the 2007-2008 AEMR. The greenhouse gas emissions considered were from diesel use (both for site electricity through diesel generators and for fuel for transport).

The review of the 2007-2008 AEMR by the DoP identified that other greenhouse gas emissions are not considered including use of explosives and fugitive methane emissions from open cut mining (letter dated 18 August 2008).

It was reported that the Whitehaven Coal Group takes part in the Greenhouse Challenge Plus program and are in the process of preparing an action plan for the group as a whole.

#### Compliance Status:

Non Compliant.

#### Recommended action:

Address DoP comment and include more comprehensive greenhouse gas emissions calculation in future AEMRs.

### WASTE MANAGEMENT

52. The Applicant shall:

- (a) monitor the amount of waste generated by the development;
- (b) investigate ways to minimise waste generated by the development;
- (c) implement reasonable and feasible measures to minimise waste generated by the development; and
- (d) report on waste and management and minimisation in the AEMR, to the satisfaction of the Director-General.

#### Evidence Sighted:

A Waste Disposal Register has been developed for tracking waste oil, oil filters, drums, batteries, contaminated rags, used tyres and refrigerant gases. At the time of the audit the only waste recorded in the register was used oil and oil filters.

Waste tracking of general domestic type wastes from on-site buildings is not conducted. It was reported that a recycling program has been established. It would be useful to include volumes or mass of domestic waste recycled and disposed in the Waste Register.

Waste Management is reported in the AEMRs.

#### Compliance Status:

Non Compliant.

#### Recommended action:

Ensure all waste disposed and recycled is recorded in the Waste Register.

#### Recommended action:

Implement a more thorough system of monitoring and recording waste disposal and recycling to enable better investigation of ways to minimise waste generation.

## HAZARDS MANAGEMENT

### Spontaneous Combustion

53. The Applicant shall:

- (a) take the necessary measures to prevent, as far as is practical, spontaneous combustion on the mine site; and
- (b) manage any spontaneous combustion on the mine site to the satisfaction of the DPI.

#### Evidence Sighted:

It was reported that the low percentage of inorganic sulphur in Tarrawonga Coal as well as the short residence time of ROM coal stockpiles minimises the potential for spontaneous combustion incidents.

The 2006-2007 AEMR reported a single incident of spontaneous combustion at the ROM stockpile. In response the effected coal was spread out by front end loader and cooled by the application of water using the on-site water cart. No incidents were reported in the 2007-2008 AEMR. An incident of spontaneous combustion at the ROM stockpile was reported to the auditors during the site inspection. It was reported that this incident was responded to immediately and the fire extinguished.

#### Compliance Status:

Compliant.

### Dangerous Goods

54. The Applicant shall ensure that the storage, handling, and transport of:

- (a) dangerous goods is done in accordance with the relevant *Australian Standards*, particularly *AS1940* and *AS1596*, and the *Dangerous Goods Code*; and
- (b) explosives are managed in accordance with the requirements of the DPI.

#### Evidence Sighted:

a) A complete audit of Dangerous Goods storage against the standards was not conducted as part of this audit however the following are noted:

- At the time of the site visit hydrocarbons were generally observed to be stored within a designated concrete bunded area adjacent to the workshop which drains to an oil water separator.
- Poor waste hydrocarbon storage was observed in contractor storage areas.
- The two 60,000 L diesel tanks are above ground and self bunded. The audit conducted by the DoP on the 30 January 2008 identified (as an improvement opportunity) that the refuelling hoses attached to the tanks are not bunded. Localised staining of the gravel and soil was observed in the vicinity of the fuel tanks. Following the audit site inspection, Tarrawonga Coal installed a concrete apron at the fuel farm to catch spills from the fuel fill point in mid April.
- Copies of MSDS are held within the site office.
- A Dangerous Goods Notification was not available at the time of the site visit. Such a Notification appears to be required for the quantity of diesel stored on site.

b) It was reported that explosives are brought onto site as required by Orica Explosives and are not stored on site.

#### Compliance Status:

Non Compliant

#### Recommended action:

Confirm whether a Dangerous Goods Notification is held and if not, obtain from WorkCover NSW, and maintain on site.

#### Recommended action:

General house keeping is required at the contractors waste storage area, specifically storage of waste solvents, hydrocarbons and batteries.

#### Recommended action:

Monitor performance of concrete apron at fuel fill point.

## BUSHFIRE MANAGEMENT

55. The Applicant shall:

- (a) ensure that the development is suitably equipped to respond to any fires on-site; and
- (b) assist the emergency services as much as possible if there is a fire on-site during the development.

*Note: Local emergency services involved in fire control are the Boggabri No.1 and Nandewar Rural Fire Brigades.*

#### Evidence Sighted:

It was reported in the 2007-2008 AEMR that Tarrawonga Coal maintains fire breaks around its landholding and mine area and maintains fire fighting equipment as well as earth moving equipment, a water truck etc which would be used in the control of fires.

It was reported that a fire fighting team of Tarrawonga Coal employees has been established. It was also reported that the local bushfire brigade and an SES representative visited the site.

#### Compliance Status:

Compliant.

56. Within 6 months of the date of this consent, the Applicant shall prepare and implement a Bushfire Management Plan for the site, to the satisfaction of the NSC in consultation with the Boggabri No.1 and Nandewar Rural Fire Brigades.

**Evidence Sighted:**

A Bushfire Management Plan was prepared and provided to the NSW Rural Fire Service for comment (letter dated 26 June 2006). A letter was received from the NSW Rural Fire Services acknowledging receipt of the Plan however stating it is unable to comment as the Development Consent is yet to be determined by the appropriate authority. A letter was provided to the NSC seeking its assistance to finalise the consent requirement dated 14 August 2006. The NSC responded by letter dated 28 August 2006 stating that the NSC had consulted the Nandewar Rural Fire Service and that they were both satisfied with the Plan.

**Compliance Status:**

Compliant.

**MINE CLOSURE STRATEGY**

57. At least 3 years prior to the cessation of mining, the Applicant shall prepare a Mine Closure Strategy for the development, in consultation with the DPI, DEC, GSC and NSC, and to the satisfaction of the Director-General.

**Evidence Sighted:**

Not applicable at the time of the audit.

**Compliance Status:**

Not applicable.

**Recommended action:**

It is noted that whilst the condition is not triggered at this point in time, it is best practice to develop a closure plan that sets out closure/rehabilitation criteria and includes monitoring required to assess against the criteria. The closure plan typically also identifies actions that can be taken during operations to identify and proactively address closure liabilities.

**SCHEDULE 5  
ADDITIONAL PROCEDURES FOR AIR QUALITY & NOISE MANAGEMENT**

**Notification of Landowners**

1. If the air dispersion and/or noise model predictions in the documents listed in condition 2 of schedule 3 identify that the air pollution and/or noise generated by the development are likely to be greater than the air quality and/or noise impact assessment criteria in schedule 4, then the Applicant shall notify the relevant landowners and/or existing or future tenants (including tenants of mine-owned properties) accordingly before it carries out any development.

**Evidence Sighted:**

This condition has not been triggered.

**Compliance Status:**

Not applicable.

2. If the results of the air quality and/or noise monitoring required in schedule 4 identify that the air pollution and/or noise generated by the development is greater than any of the air quality and/or noise criteria in schedule 4, except where this is predicted in the EIS, then the Applicant shall notify the Director-General and the affected landowners and/or existing or future tenants (including tenants of mine-owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the development is complying with the air quality and/or noise criteria in schedule 4.

**Evidence Sighted:**

This condition has not been triggered.

**Compliance Status:**

Not applicable.

3. Within 6 months of this consent, the Applicant shall develop/provide a brochure to advise landowners and/or existing or future tenants (including tenants of mine-owned properties) of the possible health and amenity impacts associated with exposure to particulate matter, in consultation with NSW Health, and to the satisfaction of the Director-General.

The Applicant shall review relevant human health studies and update this brochure every 3 years, to the satisfaction of the Director-General.

The Applicant shall provide this brochure (and associated updates) to all landowners and/or existing or future tenants (including tenants of mine-owned properties) of properties where the monitoring results identify that the mine is exceeding the air quality land acquisition criteria in schedule 4.

**Evidence Sighted:**

A Mine Dust Factsheet was prepared dated January 2006. The Factsheet states that it was approved by the DG and incorporates a fact sheet prepared jointly by NSW Minerals Council and NSW Health (pages 3 and 4 of brochure). The brochure was reportedly hand delivered to neighbouring properties. The brochure was due to be reviewed in January 2009.

**Compliance Status:**

Non Compliant.

**Recommended action:**

Undertake a review of relevant human health studies and update the brochure to the satisfaction of the DG.

**Independent Review**

4. If a landowner considers the development to be exceeding the air quality and/or noise criteria in schedule 4, except where this is predicted in the EIS, then he/she may ask the Applicant in writing for an independent review of the air pollution and/or noise impacts of the development on his/her land.

If the Director-General is satisfied that an independent review is warranted, the Applicant shall within 3 months of the Director-General advising that an independent review is warranted:

- (a) consult with the landowner to determine his/her concerns;
- (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct air quality and/or noise monitoring on the land, to determine whether the development is complying with the relevant air quality and/or noise criteria in schedule 4, and identify the source(s) and scale of any air quality and/or noise impact on the land, and the development's contribution to this impact;
- (c) give the Director-General and landowner a copy of the independent review.

**Evidence Sighted:**

This condition has not been triggered.

**Compliance Status:**

Not applicable.

5. If the independent review determines that the development is complying with the relevant air quality and/or noise criteria in schedule 4, then the Applicant may discontinue the independent review with the approval of the Director-General.

**Evidence Sighted:**

This condition has not been triggered.

**Compliance Status:**

Not applicable.

6. If the independent review determines that the development is not complying with the relevant air quality and/or noise criteria in schedule 4, and that the development is primarily responsible for this non-compliance, then the Applicant shall:

- (a) take all practicable measures, in consultation with the landowner, to ensure that the development complies with the relevant air quality and/or noise criteria; and
- (b) conduct further air quality and/or noise monitoring to determine whether these measures ensure compliance; or
- (c) secure a written agreement with the landowner to allow exceedances of the air quality and/or noise criteria in schedule 4, to the satisfaction of the Director-General.

If the additional monitoring referred to above subsequently determines that the development is complying with the relevant air quality and/or noise criteria in schedule 4, then the Applicant may discontinue the independent review with the approval of the Director-General.

If the measures referred to in (a) do not achieve compliance with the air quality and/or noise land acquisition criteria in schedule 4, and the Applicant cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then the Applicant shall, upon receiving a written request from the landowner, acquire the landowner's land in accordance with the procedures in conditions 10-12 below.

**Evidence Sighted:**

This condition has not been triggered.

**Compliance Status:**

Not applicable.

7. If the independent review determines that the relevant air quality and/or noise criteria in schedule 4 are being exceeded, but that more than one development is responsible for this non-compliance, then the Applicant shall:

- (a) take all practicable measures with the relevant development/s, in consultation with the landowner, to ensure that the relevant air quality and/or noise criteria are complied with; and
- (b) conduct further air quality and/or noise monitoring to determine whether these measures ensure compliance; or
- (c) secure a written agreement with the landowner to allow exceedances of the air quality and/or noise criteria in schedule 4, to the satisfaction of the Director-General.

**Evidence Sighted:**

This condition has not been triggered.

**Compliance Status:**

Not applicable.

8. If the independent review determines that the relevant air quality and/or noise land acquisition criteria in schedule 4 are being exceeded at the residence and/or on the landowner's land, and that more than one development is responsible for this non-compliance, and the Applicant cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then upon receiving a written request from the landowner, the Applicant shall acquire all or part of the landowner's land on as equitable a basis as possible with the relevant development/s in accordance with the procedures in conditions 10-12 below.

If the Applicant is unable to finalise an agreement with the landowner and/or other development/s, then the Applicant or landowner may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process.

If, following the Independent Dispute Resolution Process, the Director-General decides that the Applicant shall acquire all or part of the landowner's land, then the Applicant shall acquire this land in accordance with the procedures in conditions 10-12 below.

<b>Evidence Sighted:</b> This condition has not been triggered.
<b>Compliance Status:</b> Not applicable.

9. If the landowner disputes the results of the independent review, either the Applicant or the landowner may refer the matter to the Director-General for resolution.

If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process.

<b>Evidence Sighted:</b> This condition has not been triggered.
<b>Compliance Status:</b> Not applicable.

#### Land Acquisition

10. Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant shall make a binding written offer to the landowner based on:

(a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the development the subject of the DA, having regard to the:

- existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and
- presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date;

(b) the reasonable costs associated with:

- relocating within the Narrabri or Gunnedah local government areas, or to any other local government area determined by the Director-General;
- obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and

(c) reasonable compensation for any disturbance caused by the land acquisition process.

However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.

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

If either party disputes the independent valuer's determination, then the independent valuer should refer the matter back to the Director-General. Upon receiving such a referral, the Director-General shall appoint a panel comprising the:

- (i) appointed independent valuer;
- (ii) Director-General and/or nominee/s; and
- (iii) President of the Law Society of NSW or nominee,

to consider submissions from both parties, including meeting with the parties individually if requested, and to determine a fair and reasonable acquisition price for the land, and/or the terms upon which the land is to be acquired.

Within 14 days of receiving the panel's determination, the Applicant shall make a written offer to purchase the land at a price not less than the panel's determination.

If the landowner refuses to accept this offer within 6 months of the date of the Applicant's offer, the Applicant's obligations to acquire the land shall cease, unless otherwise agreed by the Director-General.

<b>Evidence Sighted:</b> This condition has not been triggered however Tarrawonga Coal has acquired the Templemore and Bollol Creek Station properties.
<b>Compliance Status:</b> Not applicable.

11. The Applicant shall bear the costs of any valuation or survey assessment requested by the independent valuer, panel, or the Director-General and the costs of determination referred above.

**Evidence Sighted:**

This condition has not been triggered.

**Compliance Status:**

Not applicable.

12. If the Applicant and landowner agree that only part of the land shall be acquired, then the Applicant shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision, and registration of the plan at the Office of the Registrar-General.

**Evidence Sighted:**

This condition has not been triggered.

**Compliance Status:**

Not applicable.

**SCHEDULE 6  
ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING**

**ENVIRONMENTAL MANAGEMENT STRATEGY**

1. Prior to carrying out any development, the Applicant shall prepare and subsequently implement an Environmental Management Strategy for the development to the satisfaction of the Director-General. This strategy must:

- (a) provide the strategic context for environmental management of the development;
- (b) identify the statutory requirements that apply to the development;
- (c) describe in general how the environmental performance of the development would be monitored and managed during the development;
- (d) describe the procedures that would be implemented to:
  - keep the local community and relevant agencies informed about the operation and environmental performance of the development;
  - receive, handle, respond to, and record complaints;
  - resolve any disputes that may arise during the course of the development;
  - respond to any non-compliance;
  - manage cumulative impacts; and
  - respond to emergencies;
- (e) describe the role, responsibility, authority, and accountability of all the key personnel, involved in environmental management of the development;
- (f) provide for the appointment of a suitably qualified Environmental Officer, in consultation with the DPI and to the satisfaction of the Director-General; and
- (g) be updated following each Independent Environmental Audit required by condition 6 below.

<p><b>Evidence Sighted:</b> The Environmental Management Strategy (December 2005) was approved by the DOP by letter dated 21 December 2005. Refer to main report of this independent audit for further discussion of the EMS.</p>
<p><b>Compliance Status:</b> Compliant.</p>

2. Within 3 months of the completion of the Independent Environmental Audit (see condition 6 below), the Applicant shall review, and if necessary revise, the Environmental Management Strategy to the satisfaction of the Director-General.

<p><b>Evidence Sighted:</b> Noted.</p>
<p><b>Compliance Status:</b> The Environmental Management Strategy requires updating within three months once the Independent Environmental Audit has been completed.</p>

**ENVIRONMENTAL MONITORING PROGRAM**

3. Within 7 months of commencement of the development on the mine site, the Applicant shall prepare an Environmental Monitoring Program for the development in consultation with relevant agencies, and to the satisfaction of the Director-General. This program must consolidate the various monitoring requirements in schedule 4 of this consent into a single document.

<p><b>Evidence Sighted:</b> The Environmental Monitoring Program was approved by the DoP by letter dated 28 March 2007.</p>
<p><b>Compliance Status:</b> Compliant.</p>

4. Within 3 months of the completion of the Independent Environmental Audit (see condition 6 below), the Applicant shall review, and if necessary revise, the Environmental Monitoring Program to the satisfaction of the Director-General.

<p><b>Evidence Sighted:</b> Noted.</p>
<p><b>Compliance Status:</b> Noted.</p>

**Recommended action:**

The Environmental Monitoring Program requires updating within three months once the Independent Environmental Audit has been completed.

**ANNUAL REPORTING**

5. Each year from the date of this consent, the Applicant shall prepare an AEMR to the satisfaction of the Director-General. This report must:

- (a) identify the standards and performance measures that apply to the development;
- (b) include a summary of the complaints received during the past year, and compare this to the complaints received in the previous 5 years;
- (c) include a summary of the monitoring results on the development during the past year,
- (d) include an analysis of these monitoring results against the relevant:
  - limits/criteria in this consent;
  - monitoring results from previous years; and
  - predictions in the EIS;
- (e) identify any trends in the monitoring over the life of the development;
- (f) identify and discuss any non-compliance during the previous year; and
- (g) describe what actions were, or are being, taken to ensure compliance.

**Evidence Sighted:**

An AEMR has been prepared for each year for the period the mine has been operating. Comments on the inaugural AEMR from the DoP and the DPI were positive (letters dated 30 July 2007 and 17 September 2007 respectively). The DPI comments included an Action Plan following the DPI's annual environmental inspection. Discussion of the actions taken to address the DPI comments was included in the 2007-2008 AEMR.

Comments on the 2007-2008 AEMR were provided by the DoP by letter dated 18 August 2008.

Comments on the 2007-2008 AEMR and following the annual environmental inspection were provided by the DPI by letter dated 14 July 2008.

The main section of this audit report discusses the actions undertaken to address these comments.

**Compliance Status:**

Compliant.

**INDEPENDENT ENVIRONMENTAL AUDIT**

6. Within 3 years of commencing the development, and every 3 years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. This audit must:

- (a) be conducted by a suitably qualified, experienced, and independent person whose appointment has been endorsed by the Director-General;
- (b) be consistent with *ISO 19011:2002 – Guidelines for Quality and/or Environmental Systems Auditing*, or equivalent updated versions of these guidelines;
- (c) assess the environmental performance of the development, and its effects on the surrounding environment;
- (d) assess whether the development is complying with the relevant standards, performance measures, and statutory requirements;
- (e) review the adequacy of the Applicant's Environmental Management Strategy and Environmental Monitoring Program; and
- (f) if necessary, recommend measures or actions to improve the environmental performance of the development, and/or the environmental management and monitoring systems.

**Evidence Sighted:**

This audit fulfils the requirement of this condition. Mike Woolley and Helen Pieris were approved by the DoP as suitable to conduct the audit (letter dated 18 February 2009 and email dated 17 March 2009).

**Compliance Status:**

Compliant.

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

**Evidence Sighted:**

A copy of this report will be submitted to the DG.

**Compliance Status:**

Not applicable at the time of the audit.

**COMMUNITY CONSULTATIVE COMMITTEE**

8. Within 3 months of the date of this consent, the Applicant shall establish a Community Consultative Committee to oversee the environmental performance of the development. This committee shall:

(a) be comprised of:

- 2 representatives from the Applicant, including the person responsible for environmental management at the mine;
- 1 representative each from the NSC and GSC; and
- at least 4 representatives from the local community, whose appointment has been approved by the Director-General in consultation with the NSC and GSC;

(b) be chaired by the representative from either NSC or GSC, or by a third party, as approved by the Director-General;

(c) meet at least four times a year, or as determined by the Director-General; and

(d) review and provide advice on the environmental performance of the development, including any construction or environmental management plans, monitoring results, audit reports, or complaints.

<p><b>Evidence Sighted:</b></p> <p>A Community Consultative Committee (CCC) has been established and is comprised of three representatives from Tarrawonga Coal, one representative from Narrabri Shire Council, one representative from Gunnedah Shire Council and four community members.</p> <p>b) The meeting minutes recorded that the chairman was Ken Bates of Narrabri Shire Council.</p> <p>c) CCC meetings were held at least four times per year. Meeting minutes were observed for 1 May 2006 (inaugural meeting), 3 August 2006, 2 November 2006, 1 February 2007, 3 May 2007, 16 August 2007, 1 November 2007, 7 February 2008, 8 May 2008, 6 August 2008, 12 November 2008 and 18 February 2009.</p> <p>d) A review of the meeting minutes indicated that environmental performance was discussed during the CCC meetings. An Environmental Monitoring Report summary is presented to the CCC with the preceding three months results. Copies of these reports were observed to accompany all of the CCC meeting minutes.</p>
<p><b>Compliance Status:</b></p> <p>Compliant.</p>

9. The Applicant shall, at its own expense:

(a) ensure that 2 of its representatives attend the Committee's meetings;

(b) provide the Committee with regular information on the environmental performance and management of the development;

(c) provide meeting facilities for the Committee;

(d) arrange site inspections for the Committee, if necessary;

(e) take minutes of the Committee's meetings;

(f) make these minutes available at the NSC and GSC within 14 days of the Committee meeting, or as agreed to by the Committee;

(g) respond to any advice or recommendations the Committee may have in relation to the environmental management or performance of the development; and

(h) forward a copy of the minutes of each Committee meeting, and any responses to the Committee's recommendations to the Director-General within a month of the Committee meeting.

<p><b>Evidence Sighted:</b></p> <p>Minutes reviewed of CCC meetings indicate that the requirements of this condition appear to have been met. A site visit was undertaken by CCC members during the second CCC meeting on the 3 August 2006 (as documented in the meeting minutes).</p> <p>An audit undertaken by the DoP in January 2008 raised the issue that since March 2007 minutes of each CCC meeting were not being sent to the DoP within a month of the meeting. Copies of the outstanding meeting minutes were reported to be subsequently forwarded to the DoP.</p>
<p><b>Compliance Status:</b></p> <p>Compliant.</p>

**ACCESS TO INFORMATION**

10. Within 1 month of the approval of any management plan/strategy or monitoring program required under this consent (or any subsequent revision of these management plans/strategies or monitoring programs), the completion of the independent audits required under this consent (see conditions 32 of schedule 4 and condition 6 of schedule 6), or the completion of the AEMR (see condition 5 above), the Applicant shall:

(a) provide a copy of the relevant document/s to the NSC, GSC, relevant agencies and the Community Consultative Committee;

(b) ensure that a copy of the relevant documents is made publicly available at the NSC and GSC; and

(c) within 12 months of the date of this consent put a copy of the relevant documents on the Applicant's website; to the satisfaction of the Director-General.

*Note: The Director-General may grant an extension to the time available before the relevant documents need to be put on the Applicant's website to give the Applicant a reasonable amount of time to establish such a website.*

<p><b>Evidence Sighted:</b></p> <p>a) NSC and GSC were provided with copies of the Environmental Strategy, Transport Route Construction Management Plan, Watercourse Crossing Management Plan, Archaeological and Cultural Heritage Management Plan (letters dated 17 February 2006), Air Quality Monitoring Program, Noise Management Program, Road Noise Management Plan, Blasting Monitoring Program (letters dated 6 March 2006), and the Site Water Management Plan (letters dated 11 April 2006). The 2006-2007 AEMR was provided to the DPI, DECC, NSC, GSC, DWE and CCC (observed letters kept on file dated 13 July 2007).</p> <p>The 2007-2008 AEMR was provided to the DPI (letter dated 10 June 2008) and the CCC (letter dated 23 July 2008).</p> <p>b) Whilst copies of the Plans and AEMRs have been provided to the NSC and GSC (as detailed above) it is unsure whether these are made publically available at the NSC and GSC offices.</p> <p>c) the Whitehaven Coal website (Tarrawonga Coal project) includes links to the following plans: Road Noise Management Plan, Archaeology and Cultural Heritage Management Plan, Transport Route Construction Management Plan, Site Water Management Plan, Noise Management Program, Watercourse Crossing Management plan, Air Quality Monitoring Program, Blasting Monitoring Program and Environmental Strategy. The website also contains links to the 2006-2007 AEMR.</p> <p>Whilst the website contains considerable information a number of plans are not included on the website as outlined in the recommendations below. It is understood Whitehaven Coal are planning a complete overhaul of the website.</p>
<p><b>Compliance Status:</b></p> <p>Non Compliant.</p>
<p><b>Recommended action:</b></p> <p>Ensure the website is kept up to date and amended plans and new plans are included on the website. The following should be included on the website:</p> <ul style="list-style-type: none"> <li>- 2007-2008 AEMR</li> <li>- Environmental Monitoring Program</li> <li>- Bushfire Management Plan</li> <li>- Groundwater Contingency Plan</li> <li>- Amended Site Water Management Plan</li> </ul> <p><b>Recommended action:</b></p> <p>Confirm with NSC and GSC whether Plans and AEMRs provided are made publically available at the NSC and GSC offices.</p>

11. During the life of the development, the Applicant shall:
- (a) make the results of the monitoring required under this consent publicly available at the NSC and GSC offices; and
  - (b) update these results on a regular basis (at least every 3 months), to the satisfaction of the Director-General.

<p><b>Evidence Sighted:</b></p> <p>Copies of the Monitoring Reports presented at the CCC meetings are provided to CCC members who include members of NSC and GSC. It is unsure whether these reports are made publically available at the NSC and GSC offices.</p>
<p><b>Compliance Status:</b></p> <p>Indeterminate.</p>
<p><b>Recommendation:</b></p> <p>Confirm with NSC and GSC whether Monitoring Reports provided during CCC meetings are made publically available at the NSC and GSC offices.</p>



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2 October 2009  
Project No. 43177658

Tarrawonga Coal Pty Ltd  
PO Box 600  
Gunnedah, NSW

Attention: Danny Young  
Group Environmental Manager, Whitehaven Coal Ltd  
**Final Addendum Report: Independent Environmental Audit  
Tarrawonga Coal Mine, Boggabri, NSW**

Dear Danny,

## 1.0 Introduction

### 1.1 Background

URS Australia Pty Ltd (URS) was engaged by Tarrawonga Coal Pty Ltd (Tarrawonga Coal) to undertake an independent environmental audit of the open cut coal mining operation at Tarrawonga Coal mine in Boggabri, NSW.

The audit was undertaken to satisfy Condition of Consent (CoC) No. 6 which required the following be undertaken:

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*“Within 3 years of commencement of development, and every three years thereafter, unless the Director-General directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the Development. This audit must:*

- a) be conducted by a suitably qualified, experienced and independent person whose appointment has been endorsed by the Director-General;*
  - b) be consistent with ISO 19011:2002- Guidelines for Quality and/or Environmental Systems Auditing or the equivalent updated version of these guidelines;*
  - c) assess the environmental performance of the development, and its effects on the surrounding environment;*
  - d) assess whether the development is complying with the relevant standards, performance measures, and statutory requirements;*
  - e) review the adequacy of the Applicant’s Environmental Management Strategy and Environmental Monitoring Program; and*
  - f) if necessary, recommend measures or actions to improve the environmental performance of the development, and/or the environmental management and monitoring systems.”*
- 

URS undertook the on-site components of the audit on the 25 and 26 March 2009 and provided Tarrawonga Coal with the final audit report in May 2009 (43177658/Final/Rev\_1). Tarrawonga Coal forwarded the audit report and accompanying Action Plan to the DoP on the 21 July 2009.

Following review of the audit report, the DoP advised Tarrawonga Coal by letter dated 20 August 2009 that it considers the audit has been undertaken in accordance with the requirements of the mine’s consent with one exception, being that Condition 6(d) has not been fully addressed. The DoP noted

that the audit report assessed compliance against the conditions of consent and not against other statutory requirements (except where they are repeated in the consent). The DoP requested that Tarrawonga Coal submit an addendum to the audit report that fully addresses condition 6 (d) of Schedule 6.

## 1.2 Scope

This Addendum to the audit report has been prepared to meet the DoP requirement that CoC 6 (d) be assessed further. As stated above CoC 6(d) requires that the audit assesses whether the development is complying with the relevant standards, performance measures and statutory requirements.

The scope of the addendum audit report was further discussed with Howard Reed of the DoP and Michael Woolley of URS on 1 September 2009. In summary, the DoP indicated that their expectation was that the Addendum audit report include an assessment of the mine's compliance with the site's Environmental Protection Licence (EPL) and Mining Lease as well as observations (where these were made during the conduct of the audit) relating to other statutory requirements.

Therefore, URS' understanding of the scope of this Addendum audit report in order to satisfy DoP requirements as based on the DoP letter and subsequent telephone conversations is to:

- Assess compliance with the EPL;
- Assess compliance with the Mining Lease;
- Discuss implementation of the site's actions to address issues previously raised by the DPI and DoP in their audits/inspections relating to the Annual Environmental Management Report (AEMR), and Mine Operations Plan (MOP); and
- Comment on compliance with other standards such as standards for the storage, handling, and transport Dangerous Goods.

This Addendum audit report supports and should be read in conjunction with the Final Report, Independent Environmental Audit: Tarrawonga Coal Mine, Boggabri, NSW dated May 2009.

## 1.3 Format of this report

The following tables in Section 2.1 and 2.2 provide a detailed assessment of compliance with the EPL and the site's Mining Lease. The original Final Audit Report included a detailed assessment of compliance with the CoC and is not repeated in this Addendum report. Recommendations are provided as considered to be required. Where the EPL requirement has been assessed in the original Final Audit Report, responses and discussion have been copied through to the EPL compliance table.

Section 2.3 provides an assessment of the implementation of actions arising from DoP and DPI reviews and audits against the MOP.

Section 3.0 summarises the additional non compliances made from this assessment against the EPL and Mining Lease.

Section 4.0 summarises the recommendations made from the original audit report as well as the new recommendations specific to this assessment against the EPI and Mining Lease.

## 2.0 Compliance with Relevant Statutory Requirements

The following table identifies the leases, licences and approvals in place for the Tarrawonga Coal mine at the end, the issuing / responsible Authority, dates of issue, duration (where limited) and relevant comments. The list is presented chronologically according to the date of issue.

**Table 2-1 Approvals**

<b>Issuing / Responsible Authority</b>	<b>Type of Lease, Licence, Approval</b>	<b>Date of Issue</b>	<b>Expiry</b>	<b>Comments</b>
Department of Primary Industries (DPI)	Exploration Licence (EL 5967)	24/07/2002	23/07/2012	Renewed 4/10/2007.
Minister for Infrastructure and Planning (Department of Planning – DoP).	Development Application (DA) 88-4-2005 (	9/11/2005	9/11/2017	
Department of Environment and Conservation and Climate (DECC)	Environment Protection Licence No. 12365	9/01/2006	Nil Anniversary date: 1 April Next review: 9/01/2009	DECC understood to be currently undertaking a review of the EPL.
Department of Primary Industries - Mineral Resources	Mining Lease (ML) 1579	3/04/2006	3/04/2027	
Department of Primary Industries - Mineral Resources	Mining Operations Plan (MOP)	1/05/2006	1/02/2012	
Department of Natural Resources (DNR) (now the Department of Water and Energy – DWE)	Water Licence 90BL253276 90BL253278 90BL253279 90BL253280 90BL254253 90BL254254 90BL254255	27/4/2006	Nil	Used for groundwater monitoring purposes.

## 2.1 EPL Compliance

EPL Condition No.	Summary of EPL Condition	Comment	Compliance Status & Recommendation
L1.1	<p>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.</p>	<p>Surface water at the site is either directed to 'clean water' storage dams or 'dirty water' sediment basins. Dirty water is captured within two catchments on the mine site ('disturbed areas' and 'open cut' catchments). Sediment basins, storage dams and associated banks and drains were designed and constructed by the Department of Lands – Soil Services personnel.</p> <p>During the previous AEMR reporting period from May 2007 to May 2008, suspended solids exceeded the EPL limit (50 mg/L 100 percentile limit) on two occasions (17 January and 6 February 2008). An additional discharge off site was recorded on the 7 October 2008 which exceeded the EPL suspended solids limit and the pH limit (6.5-8.5).</p> <p>No exceedances of the EPL oil and grease limits were recorded.</p> <p><u>Mine Discharge Event 17 January 2008</u></p> <p>This discharge event followed 124.8 mm rain in December 2007 and a further 55.8 mm on rain on the 16<sup>th</sup> and 17<sup>th</sup> January 2008. It was reported to be a minor discharge with the water tending to pool adjacent to the site boundary. A TSS level of 837 mg/L was measured at SD-17. The high sediment load was due to the failure of a recently constructed waterway (series of drop structures draining contour banks) on the western face of the rehabilitated emplacement area.</p> <p><u>Mine Discharge Event 6 February 2008</u></p> <p>This discharge event followed additional rainfall in February following on from high velocity rainfall in December 2007 and January 2008. Discharges occurred from storage dams SD-9 and SD-17. A TSS level of 476 mg/L was measured at DS-17. The source of the sediment was related to the eroded waterway which could not be repaired after its initial failure (described above) due to the surface being too wet to allow machinery on site.</p>	<p>Non Compliant</p> <p><b>Recommendations</b></p> <p>Many of the aspects of non compliance have already been addressed by the site.</p> <p>Continue to monitor storage dam levels at discharge points and manage water to avoid discharges. Continue to monitor water quality and confirm SWMP initiatives are effective in managing discharges.</p>

EPL Condition No.	Summary of EPL Condition	Comment	Compliance Status & Recommendation
		<p>Following the discharge event in late February and early March 2008, the waterway was re-constructed by removing topsoil and subsoil by scraper and dozer and rock placed in the waterway to provide for full rock lining. The rock lined waterway was completed in mid April with seed and fertiliser spread across the waterway to provide for groundcover establishment between the rocks.</p> <p>The above discharge events were reported to the DECC by email on the 8 February 2008. A report was also provided dated 7 February 2008 providing additional details of the discharge event.</p> <p>An inspection was undertaken by the DECC on the 1 April 2008. A report was provided to the DECC dated 2 April 2008 outlining the details of the discharge events and the plan for future water management at the site.</p> <p>One of the actions committed to as a result of this discharge was to conduct a full water balance calculation over the site which would also identify storage capacity against storage requirements at the western end where SD-7 and SD-17 are located. This review was conducted by Department of Lands – Soil Services personnel.</p> <p>The rock waterway was inspected during the audit inspection. Grass was observed to have grown between the rocks and the waterway appeared to be stable.</p> <p><u>Mine Discharge Event 7 October 2008</u></p> <p>This discharge event followed 39 mm of rainfall on the 6 October 2008 and whilst water was discharged from the dam it was reported that it pooled at the lease boundary and did not leave the site. It was reported that pump outs from the dam in September following 80 mm of rain reduced the potential for significant discharge.</p>	

<b>EPL Condition No.</b>	<b>Summary of EPL Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
L3.1	<p>Concentration limits – water and land</p> <p>For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.</p>	<p>During the previous AEMR reporting period May 2007 to May 2008, suspended solids exceeded the EPL limit (50 mg/L 100 percentile limit) on two occasions (17 January and 6 February 2008). An additional discharge off site was recorded on the 7 October 2008 which exceeded the EPL suspended solids limit and the pH limit (6.5-8.5). These discharges are discussed under CoC No.23 above.</p> <p>There was an additional discharge event on the 17 February 2009 however monitoring results indicated parameters were within the limits specified by the CoC and the EPL.</p>	<p>Non compliant</p> <p>Refer recommendation above.</p>
L5.1	<p>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.</p>	<p>It was reported that no waste generated outside the premises is received at the premises for storage, treatment, processing, reprocessing or disposal.</p>	<p>Compliant</p>
L5.2	<p>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.</p>	<p>Noted</p>	<p>N/A</p>
L5.3	<p>Reject material from the Whitehaven CHPP can be disposed of at the premises in accordance with the disposal method outlined in the Environmental Impact Statement titled “East Boggabri Joint Venture, Environmental Impact Statement for the Proposed East Boggabri Coal Mine, May 2005” prepared by R.W. Corkery &amp; Co. Pty. Limited dated May 2005, or as otherwise approved by the DEC”</p>	<p>It was reported that emplacement of reject material from the Whitehaven CHPP at the Tarrawonga Coal mine was yet to commence at the time of the audit.</p>	<p>Not yet triggered</p>

<b>EPL Condition No.</b>	<b>Summary of EPL Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
L6.1	<p>Noise from the premises must not exceed:</p> <p>(a) an LAeq (15 minute) noise emission criterion of 40 dB(A) during initial construction period;</p> <p>(b) an LAeq (15 minute) noise emission criterion of 35 dB(A) during the operational stages of the mine; and</p> <p>(c) an LA1(1 minute) noise emission criterion of 45 dB(A) at night</p>	<p>Quarterly attended noise monitoring and six monthly unattended monitoring is undertaken by acoustic consultants Spectrum Acoustics. Attended monitoring is undertaken at four receivers (N1 Templemore, N2 Bollo Creek Station, N3 Tarrawonga and N4 Ambardo). The Templemore property was purchased by Tarrawonga Coal in May 2007 and the Bollo Creek Station property in June 2008.</p> <p>A number of exceedances were reported for the period from January 2007 to December 2008. These are summarised below:</p> <ul style="list-style-type: none"> <li>• July 2007: exceedance at Pine Grove property during the day (5 dB) and Ambardo property during the evening (1 dB). The exceedance at Pine Grove was attributed to trucks driving over cattlegrid.</li> <li>• September 2007: exceedance at Pine Grove property during the day (7 dB) and Ambardo property during the evening (1 dB). The exceedances at Pine Grove were attributed to a high number of truck movements on the haul road during the 15 minute monitoring period.</li> <li>• January 2008: exceedance at Pine Grove property during the day (1 dB) and at Ambardo property during the day (1 dB).</li> <li>• June 2008: exceedance at Ambardo property during the day (7 dB), Tarrawonga property during the day (4 dB), Pine Grove property during the day (8 dB), Bollo Creek Station property during the evening (1 dB) and Ambardo property during the evening (6 dB). The exceedances at the Pine Grove and Ambardo properties were attributed to severely adverse meteorological conditions.</li> <li>• September 2008: exceedance at Ambardo property during the day (3 dB). This exceedance was attributed to a high number of truck movements on the haul road during the 15 minute monitoring period.</li> </ul>	<p>Non Compliant</p> <p><b>Recommendation</b></p> <p>It is recommended Tarrawonga Coal continue to monitor noise levels and implement actions to mitigate exceedances as necessary.</p>

EPL Condition No.	Summary of EPL Condition	Comment	Compliance Status & Recommendation
		<p>In response to the above exceedances Tarrawonga Coal undertook the following activities:</p> <ul style="list-style-type: none"> <li>• removal of the cattlegrid;</li> <li>• commencement of new policy with Toll (haulage contractor) to delay commencement of morning shift operations until 6:45am;</li> <li>• ceasing of early morning short haul operation from Tarrawonga to the Canyon Site reducing number of trucks on the haul road by five;</li> </ul> <p>In addition to the above, a representative from Toll attended the CCC meeting on the 18 February 2009 to discuss community concerns related to haulage trucks. During this meeting it was advised that Toll would trial running several empty trucks back to Tarrawonga by 10pm to park up on site for loading the next morning with the aim of reducing the number of trucks running to site in the morning and the associated noise impact.</p>	
L6.2	Noise from the premises is to be measured at any residence not on the premises to determine compliance with this condition.	Noise is measured at four receivers (N1 Templemore, N2 Bollol Creek Station, N3 Tarrawonga and N4 Ambardo).	Compliant
L6.3	The noise emission limits identified in this licence apply under all meteorological conditions except: (a) during rain and wind speeds (at 10m height) greater than 3m/s; and (b) under "non-significant weather conditions".	Noted	
L6.4	Noise impacts where wind speed exceeds 3 metres per second at 10 metres above the ground must be addressed by: a) documenting noise complaints received to identify any higher level of impacts or wind patterns; Where levels of noise complaints indicate a higher level of impact then actions to quantify and ameliorate any enhanced impacts where wind speed exceeds 3 metres per second at 10 metres above the ground should be developed and implemented.	In the majority of instances noise limits were exceeded as result of truck movements. The exceedance of the noise limit at the Ambardo property in September 2008 was attributed to adverse meteorological conditions. A wind speed of 4 m/s was recorded during this monitoring event. There were no complaints received during this period.	Compliant

<b>EPL Condition No.</b>	<b>Summary of EPL Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
L6.5	<p>The noise limits set by condition L6.1 of the licence do not apply where a current legally binding agreement exists between the licensee and the occupant of a residential property that:</p> <ul style="list-style-type: none"> <li>a) agrees to an alternative noise limit for that property; or</li> <li>b) provides an alternative means of compensation to address noise impacts from the premises.</li> </ul> <p>A copy of any agreement must be provided to the EPA before the licensee can take advantage of the agreement.</p>	<p>It was reported that there are no legally binding agreements between Tarrawonga Coal and any occupant of residential properties.</p>	N/A
L6.6	<p>The noise limits set by condition L6.1 of this licence apply to noise generated solely from the premises. Where the limits are exceeded solely due to cumulative noise impacts from the premises and off premise operations (not under control of the licensee), the licensee must:</p> <ul style="list-style-type: none"> <li>a) Identify significant contributing noise sources and/or meteorological conditions on the premises contributing to the cumulative noise impacts;</li> <li>b) Liaise with the occupier(s) of all off premise operations contributing to the cumulative noise impact to identify the source(s) and/or cause(s) of cumulative noise impacts causing the exceedance;</li> <li>c) Develop a joint noise reduction strategy in conjunction with all off site contributors to the cumulative noise impacts; and</li> <li>d) Implement all noise mitigation measures that relate solely to the premises identified in the joint noise reduction strategy.</li> </ul> <p>A copy of the joint noise reduction strategy must be provided to the DEC's Armidale office within 30 days of any cumulative noise impacts exceeding the limits set by conditions L6.1 of this licence.</p>	<p>The exceedances of the noise limits experienced to date have largely been as result of truck movements and not due to cumulative noise impacts from off premises operations.</p>	N/A

<b>EPL Condition No.</b>	<b>Summary of EPL Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
L7.7	<p>The airblast overpressure level from blasting operations in or on the premises must not exceed:</p> <p>(a) 115 dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; and</p> <p>(b) 120 dB (Lin Peak) at any time.</p> <p>At any point within 30 metres of any non-project related residential building or other noise sensitive location.</p>	<p>During the audit period blast monitoring was undertaken at the following three properties in closest proximity to the mine site: Bollol Creek Station, Templemore and Tarrawonga.</p> <p>URS reviewed blast monitoring results for the period 8 July 2006 to 31 March 2009. During this period an airblast overpressure level of 117 dBL was recorded at Bollol Creek Station in July 2007. It is noted that the Bollol Creek Station property was acquired by Tarrawonga Coal in June 2008 and is now project related.</p> <p>All other results were below 115 dBL.</p>	Compliant
L7.2	<p>The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed:</p> <p>(a) 5mm/s for more than 5% of the total number of blasts carried out on the premises during each reporting period; and</p> <p>(b) 10 mm/s at any time.</p> <p>At any point within 3.5 metres of any non-project related residential building or other noise sensitive location.</p>	<p>The review of the monitoring results for the period 8 July 2006 to 31 March 2009 indicated no instances where the 5 mm/s peak particle velocity was exceeded.</p>	Compliant
L7.3	<p>Blasting operations on the premises must only be carried out between the hours 9am to 5pm, Monday to Friday.</p>	<p>The time of the blast is recorded on the summary of the blast monitoring results. A review of the monitoring results for the period 8 July 2006 to 31 March 2009 indicated no instances where blasts were undertaken outside of these hours.</p>	Compliant
L7.4	<p>The hours of operation for blasting operations specified in condition L7.3 may be varied if the EPA, having regard to the effect that the proposed variation would have on the amenity of the residents in the locality, gives written consent to the variation.</p>	<p>Tarrawonga Coal has not requested that the hours of blasting be varied.</p>	N/A
L7.5	<p>Blasting at the premises is limited to 1 blast on each day on which blasting is permitted.</p> <p>Note: Additional blasts are permitted where it is demonstrated to be necessary for safety reasons and the EPA and neighbours have been notified of the intended blast prior to the additional blast being fired.</p>	<p>A review of the monitoring results for the period 8 July 2006 to 31 March 2009 indicated no instances where more than one blast was conducted per day.</p>	Compliant



<b>EPL Condition No.</b>	<b>Summary of EPL Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
O1.1	<p>Licensed activities must be carried out in a competent manner.</p> <p>This includes:</p> <p>(a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and</p> <p>(b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.</p>	<p>The processing, handling, movement and storage of ROM was generally observed to be carried out in a competent manner.</p> <p>During the audit site inspection poor waste management practices were observed at the contractor waste storage area, specifically regarding the storage of waste solvents, hydrocarbons and batteries. General house keeping improvements are recommended in this area.</p>	<p>Non Compliant</p> <p><b>Recommendation:</b> General house keeping is required at the contractors waste storage area, specifically storage of waste solvents, hydrocarbons and batteries.</p>

EPL Condition No.	Summary of EPL Condition	Comment	Compliance Status & Recommendation
O2.1	<p>All plant and equipment installed at the premises or used in connection with the licensed activity:</p> <p>(a) must be maintained in a proper and efficient condition; and</p> <p>(b) must be operated in a proper and efficient manner.</p>	<p>a) Tarrawonga Coal has developed a Mechanical Management Plan which outlines the management of engineering and maintenance activities undertaken on the Tarrawonga Coal Mine. The Plan defines competencies of personnel, establishes standards, defines procedures and establishes monitoring process for monitoring the effectiveness of the Maintenance and engineering Management Plan. An example of a Heavy Earthmoving Pre-Start Checklist dated 25/03/08 was observed.</p> <p>It was reported that the haulage truck contractor 'Toll' is subject to its own maintenance requirements. It was also reported that the contract between Toll and Tarrawonga Coal includes key performance indicators including coal spills, oil spills and complaints.</p> <p>It was reported that there have been no incidents recorded relating to on-site plant and equipment. One incident was recorded in 2007 relating to a Toll haulage truck splitting a hydraulic hose and leaking oil on the road.</p> <p>It was reported that monitoring equipment is maintained and calibrated. The PM<sub>10</sub> unit is calibrated every two months and the calibration certificates provided by the contractors responsible for the monitoring. The noise loggers for the unattended noise monitoring are also calibrated by contractors and the certificates attached with the reporting.</p> <p>b) It was reported that all operators have the necessary tickets to operate machinery. It was reported that Toll conduct daily toolbox talks with drivers as well as attending weekly meetings with Tarrawonga Coal and monthly meetings with Whitehaven. It was also reported that the Toll supervisor attends the Community Consultative Committee meetings to address community concerns relating to truck movements.</p>	Compliant
O.3.1	<p>All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.</p>	<p>A number of dust control procedures are outlined in the 2007-2008 AEMR. At the time of the site visit two water carts were observed in use along internal haul roads and trucks were observed to be covered.</p> <p>A blasting event was witnessed during the audit site visit. Whilst dust was observed during the blast it was noted that the dust dispersed shortly after the blast.</p>	Compliant

<b>EPL Condition No.</b>	<b>Summary of EPL Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
O3.2	Trucks transporting coal from the premises must be covered immediately after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks.	It was reported that trucks have automatic slide tarpaulins to cover loads. It was reported that there have been some instances where tarpaulins have deteriorated and in response have been replaced. Trucks were observed to be covered at the time of the site visit.	Compliant
O4.1	Effluent must only be applied to the following areas: Point 14 defined in condition P1.3 of this licence. Note: Monitoring of land and receiving waters to determine the impact of wastewater application may be required by the EPA.	Waste water effluent is applied to the utilisation area. It was reported that the EPA has not required monitoring of land and receiving waters to date.	Compliant
O4.2	The quantity of effluent applied to the utilisation area(s) must not exceed the capacity of the utilisation area(s) to effectively utilise the effluent. For the purpose of this condition, "effectively utilise" includes the ability of the soil to absorb the nutrient, salt and hydraulic loads and the applied organic material without causing harm to the environment.	The wastewater effluent is gravity fed from a collection tank to drip irrigate approximately 12 plants. It was reported that the area effectively utilises the effluent.	Compliant
O4.3	Effluent application to the utilisation area(s) must not occur in a manner that causes surface run-off from the utilisation area(s).	It was reported that the effluent application does not cause surface run-off from the utilisation area.	Compliant
O4.4	Spray from effluent application to the utilisation area(s) must not drift beyond the boundary of the utilisation area(s) to which it has been applied.	The effluent is not sprayed onto the utilisation area but rather drip fed to the plants within the area. It was reported that there is no drift beyond the boundary of the utilisation area.	Compliant
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.	Monitoring records including depositional dust, PM10, noise, blast monitoring, wet weather discharge etc, were observed.	Compliant
M1.2	All records required to be kept by this licence must be: (a) in a legible form, or in a form that can readily be reduced to a legible form; (b) kept for at least 4 years after the monitoring or event to which they relate took place; and (c) produced in a legible form to any authorised officer of the EPA who asks to see them.	Monitoring records were observed to be in legible form for the period since January 2006.	Compliant



<b>EPL Condition No.</b>	<b>Summary of EPL Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
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.	The majority of the monitoring records reviewed included the date, time and location of monitoring. However some of the monitoring records did not include the name of the person who collected the sample (eg wet weather discharge and blasting).	Compliant (a to c) Non Compliant (d)  <b>Recommendation:</b> Include the name of the person who collected the sample on sampling records.

EPL Condition No.	Summary of EPL Condition	Comment	Compliance Status & Recommendation																																				
M2.1	<p>For each monitoring/discharge point or utilisation area specified, the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified. The licensee must use the sampling method, units of measure, and sample at the frequency, specified in the EPL.</p> <table border="1" data-bbox="421 564 972 1318"> <thead> <tr> <th data-bbox="421 564 562 639">EPL Monitoring Point</th> <th data-bbox="562 564 703 592">Pollutant</th> <th data-bbox="703 564 824 592">Frequency</th> <th data-bbox="824 564 972 608">Sampling Method</th> </tr> </thead> <tbody> <tr> <td data-bbox="421 639 562 735">1,2,3,4 (wet weather discharge)</td> <td data-bbox="562 639 703 735">Conductivity Oil &amp; Grease TSS pH</td> <td data-bbox="703 639 824 687">After discharge</td> <td data-bbox="824 639 972 687">Representative sample</td> </tr> <tr> <td data-bbox="421 735 562 831">5,6,7,8 (ambient water quality)</td> <td data-bbox="562 735 703 831">Conductivity Oil &amp; Grease TSS pH</td> <td data-bbox="703 735 824 783">After discharge</td> <td data-bbox="824 735 972 783">Representative sample</td> </tr> <tr> <td data-bbox="421 831 562 959">9,10,11,12 (groundwater)</td> <td data-bbox="562 831 703 959">Conductivity lead Standing water level pH</td> <td data-bbox="703 831 824 879">Every six months</td> <td data-bbox="824 831 972 879">Representative sample</td> </tr> <tr> <td data-bbox="421 959 562 1054">13 (surface water quality)</td> <td data-bbox="562 959 703 1054">Conductivity Oil &amp; Grease TSS pH</td> <td data-bbox="703 959 824 1007">Quarterly</td> <td data-bbox="824 959 972 1007">Representative sample</td> </tr> <tr> <td data-bbox="421 1054 562 1102">15</td> <td data-bbox="562 1054 703 1102">PM10</td> <td data-bbox="703 1054 824 1102">Every 6 days</td> <td data-bbox="824 1054 972 1102">AM-18</td> </tr> <tr> <td data-bbox="421 1102 562 1182">15</td> <td data-bbox="562 1102 703 1182">Particulates - Deposited Matter</td> <td data-bbox="703 1102 824 1150">Continuous</td> <td data-bbox="824 1102 972 1150">AM-19</td> </tr> <tr> <td data-bbox="421 1182 562 1262">16,17,19,20,21,22,23</td> <td data-bbox="562 1182 703 1262">Particulates - Deposited Matter</td> <td data-bbox="703 1182 824 1230">Continuous</td> <td data-bbox="824 1182 972 1230">AM-19</td> </tr> <tr> <td data-bbox="421 1262 562 1310">18</td> <td data-bbox="562 1262 703 1310">PM10</td> <td data-bbox="703 1262 824 1310">Every 6 days</td> <td data-bbox="824 1262 972 1310">AM-18</td> </tr> </tbody> </table>	EPL Monitoring Point	Pollutant	Frequency	Sampling Method	1,2,3,4 (wet weather discharge)	Conductivity Oil & Grease TSS pH	After discharge	Representative sample	5,6,7,8 (ambient water quality)	Conductivity Oil & Grease TSS pH	After discharge	Representative sample	9,10,11,12 (groundwater)	Conductivity lead Standing water level pH	Every six months	Representative sample	13 (surface water quality)	Conductivity Oil & Grease TSS pH	Quarterly	Representative sample	15	PM10	Every 6 days	AM-18	15	Particulates - Deposited Matter	Continuous	AM-19	16,17,19,20,21,22,23	Particulates - Deposited Matter	Continuous	AM-19	18	PM10	Every 6 days	AM-18	<p><u>Surface water monitoring</u></p> <p>During the 2006-2007 Annual Return period there were no discharges reported and therefore no monitoring undertaken at EPL monitoring points 1, 2, 3, 4, 5, 6, 7 and 8.</p> <p>One round of quarterly monitoring was undertaken at EPL point 13 for conductivity, oil and grease, TSS and pH. It was reported that there was no access to the mine void on the first sample date.</p> <p>During the 2007-2008 Annual Return the following discharges were reported:</p> <ul style="list-style-type: none"> <li>- EPL point 1: two discharges</li> <li>- EPL point 2: two discharges</li> <li>- EPL point 3: one discharge</li> <li>- EPL point 4: no discharges</li> <li>- EPL point 5: one discharge</li> <li>- EPL point 6: two discharges</li> <li>- EPL point 7: no discharges</li> <li>- EPL point 8: no discharges</li> </ul> <p>Monitoring of TSS, conductivity, oil and grease and pH was undertaken during these events.</p> <p>Two rounds of quarterly surface monitoring were undertaken at EPL point 13 for conductivity, oil and grease, TSS and pH. It was reported that there was no access to the mine void during the other two sampling events.</p> <p><u>Groundwater monitoring</u></p> <p>During the 2006-2007 Annual Return period two rounds of groundwater monitoring were reported to be undertaken however results of the second monitoring event were not available at the time of reporting. Monitoring of conductivity, lead, pH and standing water level was undertaken at EPL point 9, 10, 11 and 12.</p> <p>During the 2007-2008 Annual Return period two rounds of groundwater monitoring were undertaken at EPL points 9,10, 11 and 12. Results from an additional two sampling rounds undertaken by Boggabri Coal were included in the Annual Return for EPL point 11.</p>	<p>Compliant wet weather, ambient water quality, groundwater, PM10 and Deposited Matter.</p> <p>Non compliant with respect to surface water quality.</p> <p>There were some instances where the required number of surface water quality samples were not obtained due restricted access to the mine void during the sampling events.</p>
EPL Monitoring Point	Pollutant	Frequency	Sampling Method																																				
1,2,3,4 (wet weather discharge)	Conductivity Oil & Grease TSS pH	After discharge	Representative sample																																				
5,6,7,8 (ambient water quality)	Conductivity Oil & Grease TSS pH	After discharge	Representative sample																																				
9,10,11,12 (groundwater)	Conductivity lead Standing water level pH	Every six months	Representative sample																																				
13 (surface water quality)	Conductivity Oil & Grease TSS pH	Quarterly	Representative sample																																				
15	PM10	Every 6 days	AM-18																																				
15	Particulates - Deposited Matter	Continuous	AM-19																																				
16,17,19,20,21,22,23	Particulates - Deposited Matter	Continuous	AM-19																																				
18	PM10	Every 6 days	AM-18																																				



EPL Condition No.	Summary of EPL Condition	Comment	Compliance Status & Recommendation
		<p><u>Air quality monitoring</u></p> <p>Deposited dust is currently monitored at eight locations by Tarrawonga Coal and at four locations by Idemitsu Boggabri Coal (IBC). Two of these monitoring locations (EB-10 and EB-11) were established in March 2007 in order to improve assessment of cumulative dust impacts. Monitoring was also previously conducted at the Jerralong property (EB-3) but was ceased in January 2009. Monitoring by Tarrawonga Coal at Tarrawonga (EB-7), Thuin (EB-8) and Pine Grove (EB-9) is additional to the monitoring stipulated by the EPL.</p> <p>Dust gauges are collected by Tarrawonga Coal personnel and sent to Nata accredited laboratory, ALS ACIRL Pty Ltd, for analysis on a monthly basis.</p> <p>The report from ALS ACIRL states that samples are analysed in accordance with AS3580.10.1 Parts 8.2 and 8.3 which correlates to AM-19.</p> <p>PM<sub>10</sub> is monitored by Tarrawonga Coal at the Templemore property (EBA-4). Monitoring is also conducted at the Merriown property (EBA-1 / D7) by Idemitsu Boggabri Coal and the data shared with Tarrawonga Coal. These monitoring points are stipulated in the EPL for the Tarrawonga Coal Mine. PM10 sampling and analysis is conducted by ALS ACIRL. The report from ALS ACIRL states that samples are analysed in accordance with AS3580.9.6 which correlates to AM-18.</p>	



<b>EPL Condition No.</b>	<b>Summary of EPL Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
M3.1	Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with: (a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or (b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or (c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.	Noted	N/A
M3.2	Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.	Noted	N/A
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.	Details of complaints are recorded on a "Complaints Form".	
M4.2	(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.	The "Complaints Form" requires that the information required by (a) to (f) is recorded. The completed complaint forms observed during the audit generally documented this information. For the majority of the complaints the response action involved arranging for the haulage company manager to follow up with the resident. It is recommended that the final follow up action taken to close out the complaint is also recorded on the complaints form.	Compliant  <b>Recommendation:</b> It is recommended that where the follow up action involves other people (e.g. notifying Toll Manager to contact resident) the final follow up action taken to close out the complaint should also be recorded on the complaints form.

<b>EPL Condition No.</b>	<b>Summary of EPL Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
M4.3	The record of a complaint must be kept for at least 4 years after the complaint was made.	Noted	N/A
M4.4	The record must be produced to any authorised officer of the EPA who asks to see them.	It was reported that this requirement has not been triggered.	N/A
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.	Tarrawonga maintains a designated complaints line which is reportedly checked by the Environmental Officer on a daily basis.	Compliant
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.	It was reported that the telephone number is published in the local newspaper on an annual basis.	Compliant
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 on the licensee under clause 10 of that regulation.	Noted.	N/A
M7.1	Requirement to monitor weather For each monitoring point specified in the table below, the licensee must monitor (by sampling and obtaining results by analysis) or obtain the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.	A meteorological station is operating Tarrawonga Coal and was observed during the audit site inspection. During a DoP audit in February 2008 it was observed that there was no temperature sensor at 10 m at the meteorological monitoring station. It was reported that a new temperature sensor was installed at 10 m by Carbon Based Environmental Pty in March 2008.	Compliant

EPL Condition No.	Summary of EPL Condition	Comment	Compliance Status & Recommendation																				
M8.1	<p>Noise and blast monitoring</p> <p>For each monitoring point specified below, the Licensee must monitor the noise or vibration parameter specified in Column 1. The Licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns.</p> <p>Points N1, N2, N3, N4</p> <table border="1" data-bbox="421 571 972 991"> <thead> <tr> <th>Parameter</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling method</th> </tr> </thead> <tbody> <tr> <td>Ambient Noise</td> <td>L<sub>Aeq</sub> (15 minute) L<sub>Amax</sub> L<sub>A1</sub> L<sub>A10</sub> L<sub>A90</sub> L<sub>Amin</sub></td> <td>As detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05</td> <td>Type 1 noise meter unattended and/or attended monitoring as detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05</td> </tr> </tbody> </table> <p>Points N1, N2, N3</p> <table border="1" data-bbox="421 1031 972 1238"> <thead> <tr> <th>Parameter</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling method</th> </tr> </thead> <tbody> <tr> <td>Blast Noise</td> <td>DB(Lin Peak)</td> <td>Every blast</td> <td>Type 1 noise blast logger</td> </tr> <tr> <td>Blast Vibration</td> <td>Mm/s</td> <td>Every blast</td> <td>Geophone logger or similar</td> </tr> </tbody> </table> <p>N1 = within 30m of the residence on Templemore N2 = within 30m of the residence on Bollol Creek Station N3 = within 30m of the residence on Tarrawonga N4 = within 30 m of the residence on Ambardo</p>	Parameter	Units of measure	Frequency	Sampling method	Ambient Noise	L <sub>Aeq</sub> (15 minute) L <sub>Amax</sub> L <sub>A1</sub> L <sub>A10</sub> L <sub>A90</sub> L <sub>Amin</sub>	As detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05	Type 1 noise meter unattended and/or attended monitoring as detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05	Parameter	Units of measure	Frequency	Sampling method	Blast Noise	DB(Lin Peak)	Every blast	Type 1 noise blast logger	Blast Vibration	Mm/s	Every blast	Geophone logger or similar	<p><u>Noise Monitoring</u></p> <p>During the audit period quarterly attended noise monitoring and six monthly unattended monitoring was undertaken by acoustic consultants Spectrum Acoustics.</p> <p>Attended monitoring was undertaken at the Templemore, Bollol Creek Station, Tarrawonga and Ambardo properties. The Templemore property was purchased by Tarrawonga Coal in May 2007 and the Bollol Creek Station property in June 2008.</p> <p>The requirement to monitor noise at the Templemore and Bollol Creek Station properties and the requirement to undertake unattended monitoring was removed from the EPL in November 2008.</p> <p>Spectrum Acoustics report that a Type 1 noise meter is used to measure noise emissions.</p> <p>The attended monitoring reports provided by Spectrum Acoustics do not include results of the L<sub>Amax</sub>, L<sub>A1</sub>, L<sub>A10</sub>, L<sub>A90</sub> and L<sub>Amin</sub>. It is recommended that these results are included in the reports.</p> <p><u>Blast Monitoring</u></p> <p>During the audit period blast monitoring (noise and vibration) was conducted by Orica Limited at the Templemore, Tarrawonga and Bollol Creek Station properties during every blast. The Bollol Creek Station property was acquired by Tarrawonga Coal in June 2008 and monitoring at this location ceased in January 2009. The requirement to monitor at the Bollol Creek Station property was removed from the EPL in November 2008.</p> <p>The type of logger used by Orica is not specified on the Blast Summary sheet.</p>	<p>Non Compliant</p> <p><b>Recommendation:</b> It is recommended that Tarrawonga Coal request Spectrum Acoustics to include monitoring results for the L<sub>Amax</sub>, L<sub>A1</sub>, L<sub>A10</sub>, L<sub>A90</sub> and L<sub>Amin</sub> in its reports.</p> <p><b>Recommendation:</b> It is recommended that Tarrawonga Coal request Orica to include details of the type of logger used for blast noise and blast vibration monitoring on its Blast Summary record sheet.</p>
Parameter	Units of measure	Frequency	Sampling method																				
Ambient Noise	L <sub>Aeq</sub> (15 minute) L <sub>Amax</sub> L <sub>A1</sub> L <sub>A10</sub> L <sub>A90</sub> L <sub>Amin</sub>	As detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05	Type 1 noise meter unattended and/or attended monitoring as detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05																				
Parameter	Units of measure	Frequency	Sampling method																				
Blast Noise	DB(Lin Peak)	Every blast	Type 1 noise blast logger																				
Blast Vibration	Mm/s	Every blast	Geophone logger or similar																				
R1	The licensee must complete and supply to the EPA an Annual Return in the approved form.	Annual returns were observed for 9 Jan 2006 to 8 Jan 2007 and 9 Jan 2008 to 8 Jan 2009.	Compliant																				

<b>EPL Condition No.</b>	<b>Summary of EPL Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
R2	<p>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.</p>	<p>The EPA was notified by email on the 8 February 2008 of an incident on the 7 February where surface water discharged from the site with suspended solids exceeding the EPL limit of 50 mg/L. A report was also provided to the EPA providing additional details of the discharge event. An inspection was undertaken by the DECC on the 1 April 2008. A report was provided to the DECC dated 2 April 2008 outlining the details of the discharge events and the plan for future water management at the site.</p> <p>Two other discharge events in January and October 2008 were not reported to the EPA as they were reported by Tarrawonga Coal to be minor discharges with the water tending to pool adjacent to the site boundary and were not believed to have caused or threatened material harm.</p>	Compliant
R3	<p>Where an authorised officer of the EPA suspects on reasonable grounds that:</p> <p>(a) where this licence applies to premises, an event has occurred at the premises; or</p> <p>(b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies),</p> <p>the authorised officer may request a written report of the event.</p>	It was reported that this requirement has not been triggered.	
G1	<p>A copy of this licence must be kept at the premises to which the licence applies.</p> <p>The licence must be produced to any authorised officer of the EPA who asks to see it.</p> <p>The licence must be available for inspection by any employee or agent of the licensee working at the premises.</p>	A copy of the licence was observed at the premises.	Compliant

EPL Condition No.	Summary of EPL Condition	Comment	Compliance Status & Recommendation
E1.1	<p>An Erosion and Sediment Control Plan (ESCP) must be prepared and implemented. The plan must describe the measures that will be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities. The ESCP should be prepared in accordance with the requirements for such plans outlined in <i>Managing Urban Stormwater: Soils and Construction</i> (available from the Department of housing).</p>	<p>The Erosion and Sediment Control Plan was incorporated into the Site Water Management Plan prepared for the site. The Site Water management Plan was provided to the DECC for consultation and was approved by the DoP (Rev 1 approval dated 17 October 2007).</p> <p>Further amendments to the Site Water Management Plan are required to reflect current site conditions.</p> <p>The ESCP has generally been implemented on the site however the site has had some historical issues with sediment and erosion control, specifically relating to a series of drop structures draining contour banks on the western face of the rehabilitated emplacement area.</p> <p>The aforementioned constructed waterway failed in January 2008 following heavy rainfall in December 2007 and January 2008. By March 2008 works had been completed to improve sediment and erosion control measures associated with this waterway. At the time of the audit site inspection the waterway appeared stable and grasses had established in between rock spaces.</p> <p>In some places minor cracks and breaks in the contour drains were observed.</p> <p>Tarrawonga Coal indicated that drains are inspected following rainfall events and repairs undertaken as required. It is recommended that this process is formalised and documented.</p>	<p>Non Compliant</p> <p><b>Recommendation:</b> Further amend Site Water Management Plan to reflect current storage dams and revised water balance and provide copy to the DoP and the DECC.</p> <p><b>Recommendation:</b> It is recommended that a formalised system is established and implemented for checking the performance of contour drains and other sediment and erosion control structures following significant rainfall.</p>
E2.1	<p>A Stormwater Management Scheme must be prepared for the development and must be implemented. Implementation of the Scheme must mitigate the impacts of stormwater run-off from and within the premises following the completion of construction activities. The Scheme should be consistent with the Stormwater management Plan for the catchment(s). Where a Stormwater Management Plan has not yet been prepared the Scheme should be consistent with the guidance contained in <i>Managing Urban Stormwater: Council Handbook</i> (available from the EPA).</p>	<p>Stormwater run-off mitigation is included within the Site Water Management Plan. As discussed above the Plan was provided to the DECC and approved by the DoP.</p>	<p>Compliant</p>

<b>EPL Condition No.</b>	<b>Summary of EPL Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
E3.1	<p>Prior to the construction and operational activities on the premises commencing, the proponent must prepare, and subsequently implement, a Noise Management protocol. The protocol must include, but need not be limited to, the following matters:</p> <ul style="list-style-type: none"> <li>a) compliance standards;</li> <li>b) community consultation;</li> <li>c) complaint handling monitoring/ system;</li> <li>d) site contact person to follow up complaints;</li> <li>e) mitigation measures;</li> <li>f) the design/ orientation of the proposed mitigation methods demonstrating best practice;</li> <li>g) operating time;</li> <li>h) contingency measures where noise complaints are received;</li> <li>i) monitoring methods and program</li> </ul>	<p>A Noise Management Program was developed by Tarrawonga Coal and provided to the DECC for consultation. The Plan was approved by the DoP in February 2006.</p> <p>Tarrawonga Coal are in the process of reviewing the Noise Monitoring Plan (in particular removal of monitoring requirements) in consultation with the DECC.</p>	Compliant
E4.1	<p>A Blasting/ Vibration Management Protocol must be prepared in relation to the development and implemented. The protocol must include, but need not be limited to, the following matters:</p> <ul style="list-style-type: none"> <li>a) compliance standards;</li> <li>b) mitigation measures;</li> <li>c) remedial action;</li> <li>d) monitoring methods and program;</li> <li>e) monitoring program for flyrock distribution;</li> <li>f) measures to protect underground utilities (eg: rising mains, subsurface telecommunication and electrical cables) and livestock nearby;</li> <li>g) notification procedures for neighbouring prior to detonation of each blast; and</li> <li>h) measures to ensure no damage by flyrock to people, property, livestock and powerlines.</li> </ul>	<p>A Blasting Monitoring Program was developed in consultation with the DECC and approved by the DoP (Rev 1 approved 23 December 2008).</p>	Compliant

## 2.2 Mining Lease Compliance

Mining Lease Condition No.	Summary of Mining Lease Condition	Comment	Compliance Status & Recommendation
1	<p>Within a period of three months from the date of grant/renewal of this lease, the lease holder must serve on each landholder of the land a notice in writing indicating that the 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.</p> <p>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 areas.</p>	<p>The Mining Lease applies to land owned by Tarrawonga Coal and Boggabri Coal.</p>	<p>N/A</p>
2	<p>Mining operations, including mining purposes, must be conducted in accordance with a Mining Operations Plan (MOP) satisfactory to the Director General. The Plan must be lodged with the DG prior to the commencement of mining operations and subsequently as appropriate prior to the expiry of any current plan.</p> <p>The plan must present a schedule of proposed mine development for a period of up to seven years.</p> <p>During the life of the MOP, proposed modifications to the Plan must be lodged with the DG and will be subject to review.</p>	<p>The Mining Operations Plan was approved by the DPI on the 9 May 2006.</p>	<p>Compliant</p>

<b>Mining Lease Condition No.</b>	<b>Summary of Mining Lease Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
3	<p>The leaseholder must lodge an Annual Environmental Management Report (AEMR) with the DG.</p> <p>The AEMR must be lodged with the DG's guidelines current at the time of reporting and contain a review and forecast of performance for the preceding and ensuing twelve months.</p> <p>The leaseholder shall, as and when directed by the Minister co-operate with the DG to conduct and facilitate review of the AEMR involving other government agencies and the local council.</p>	<p>The 2006-2007 AEMR was provided to the DoP and the DPI on the 13 July 2007 and 6 July 2008 respectively.</p> <p>The 2007-2008 AEMR was provided to the DoP and DPI on the 13 June 2008 and 6 June 2008 respectively.</p> <p>The DPI conducted a review of the 2006-2007 including a site inspection on the 29 August 2007.</p> <p>The DPI conducted a review of the 2007-2008 AEMR including a site inspection on the 17 June 2008.</p> <p>A discussion of the implementation of actions arising from these reviews is provided in Section 2.3.1 below.</p>	Compliant
4	<p>The lease holder shall prepare a Subsidence Management Plan prior to commencing any underground mining operations which will potentially lead to subsidence.</p>	<p>Not applicable as underground mining operations are not conducted at Tarrawonga Coal mine.</p>	N/A
5	<p>The leaseholder must ensure that at least 27 competent people are efficiently employed on the lease area on each week day except Sundays or public holidays; or expend on operations carried out a minimum of \$472,500 per annum whilst the lease is in force.</p>	<p>It was reported that Tarrawonga Coal employs 67 people on a daily basis on the lease area.</p>	Compliant
6	<p>If an Environmental Officer of the Department believes the lease holder is not complying with any provision of the Act or any condition of this lease he may direct the leaseholder to cease working.</p>	<p>It was reported that there have been no occasions where the Department has directed Tarrawonga Coal to cease working the lease or part of the operation.</p>	N/A
7	<p>The lease holder must provide an exploration report, within a period of twenty-eight days after each anniversary of the date this lease has effect, of each year.</p>	<p>A Statutory Declaration is prepared by the Exploration Project Geologist and forwarded to the DPI. The Statutory Declaration lists the location of exploration holes drilled and confirms sealing and rehabilitation of exploration sites. The June 2007 Statutory Declaration was observed.</p>	Compliant
8	<p>The lease holder grants the Minister licence to use the exploration reports.</p>	<p>Noted.</p>	

<b>Mining Lease Condition No.</b>	<b>Summary of Mining Lease Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
9	All exploration reports submitted will be kept confidential.	Noted	
10	Terms of non-exclusive copyright licence granted under condition 8 are listed in condition 10.	Noted	
11a)	The lease holder must ensure that the ground vibration peak particle velocity generated by any blast within the lease area does not exceed 10mm/s and does not exceed 5mm/s in more than 5% of the total number of blasts over a 12 month period at any dwelling or occupied premises, unless otherwise determined by the DEC.	Refer Condition L7.2 above.	Compliant
11b)	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, unless otherwise determined by the DEC.	Refer Condition L7.1 above.	Compliant
12	Operations must be carried out in a manner that ensures the safety of persons or stock in the vicinity of the operations. All drill hole shafts and excavations must be appropriately protected, to the satisfaction of the DG, to ensure that access to them by persons or stock is restricted.	Stock have been excluded from the Mining Lease area. It was reported that all exploration holes are appropriately mapped and rehabilitated in accordance with DPI guidelines on completion.	Compliant

<b>Mining Lease Condition No.</b>	<b>Summary of Mining Lease Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
13	Land disturbed must be rehabilitated to a stable and permanent form suitable for a subsequent land use acceptable to the DG and in accordance with the MOP.	<p>Plan 5a of the MOP details the proposed rehabilitation for year 1 and 2, Plan 5b details the proposed rehabilitation for year 4 and 6 and Plan 6 of the MOP details the conceptual final landform at lease relinquishment.</p> <p>The final land use will reportedly comprise agricultural land, native vegetation and a stock exclusion / offset area.</p> <p>Rehabilitation activities had occurred on the north western dump batters and southern batters at the time of the audit inspection. It was reported that contour bank design is conducted by the Soil Conservation Service. Drainage on the western batters is directed in a south westerly direction towards the 'dirty water' sediment basins which are located along the south western side of the open cut void. It was indicated that the contours have been designed to have the capacity to direct stormwater to the sediment basins.</p> <p>The north western and southern batters of mine emplacement material are at various stages of rehabilitation. At the time of the audit site inspection, the north western batter had been contoured and cover crops established. From the mid to the bottom of the western batters tube stocks had been planted in June 2008. Logs had been placed on the batters (perpendicular to the contour) amongst the tube stocks for habitat. Tube stocks of native vegetation had been planted. It was reported during the site inspection that the western edge of the rehabilitation area was to be seeded in the next few weeks. A good cover was evident on areas of rehabilitation on the western batter. It was evident that there were some areas of weed in the revegetation. Advice had been sought by management on how to manage this weed and it was reported that areas of roly-poly weed would diminish with time and was useful protective cover for some other plant species.</p> <p>Tarrawonga Coal reported that seed collection was undertaken from the Tarrawonga mine site and adjacent areas for the establishment of seedlings. Seeds are being propagated at the Whitehaven Coal Handling and Preparation Plant as well as off site by local contractors.</p> <p>The southern batter has recently been shaped and was awaiting topsoil and crop seeding. Significant self sown revegetation had occurred on this area (prior to topsoil being placed) indicating it had been in this state for a while.</p>	<p><b>Recommendation:</b> It is recommended that topsoiling and revegetation be conducted as soon as possible on the southern batter to prevent weeds and erosion from occurring and to get final revegetation established as soon as practicable.</p> <p><b>Recommendation:</b> It is recommended that future third party reports also include wider ranging comment than just focussed on the quadrants. The reports should be a tool for management to gain input on their techniques, how successful they have been towards a specific criteria and how they can improve.</p> <p><b>Recommendation:</b> Although a Rehabilitation Plan is not required by the CoC, Mining Lease or MOP, it is considered best practice that a plan is developed to provide a systematic approach to rehabilitation.</p>

Mining Lease Condition No.	Summary of Mining Lease Condition	Comment	Compliance Status & Recommendation
		<p>Topsoil is currently stored at the bottom of the southern batter. It was reported that there is enough topsoil available for the mine rehabilitation. A detailed assessment of topsoil management was not undertaken by URS as part of this audit and topsoils volumes were not verified.</p> <p>Annual flora and fauna monitoring is undertaken by Geoff Cunningham Natural Resource Consultants Pty Ltd. Seven control quadrants were established in April 2007 with an additional quadrant established in May 2007 on former cultivation land. It was reported that additional quadrants will be established over rehabilitated areas to assist in monitoring the success of rehabilitation efforts and to identify additional actions required to achieve required species composition and densities. In May 2008 three additional quadrants were established in the western rehabilitation area. At the time of this monitoring event Japanese millet had established in these quadrants. The recommended actions within the GCNRC May 2008 report focused on establishing fences and sign posting the new quadrants and making staff aware of the need to avoid driving through the quadrants. There was little or no comment generally about the overall success of the rehabilitation, areas for improvement generally or specifically on rehabilitation or easily available information to provide the site with a sense of how they were travelling towards specific closure criteria i.e. was the rehabilitation successful.</p> <p>The regulatory authorities (DoP and DPI) have not provided written comment on the rehabilitation at the site.</p>	
14	The leaseholder must comply with the direction given by the DG regarding the stabilisation and revegetation of any mine residues, tailings or overburden dumps situated on the lease area.	<p>It was reported that there has been no direction given by the DG to date relating to this requirement.</p> <p>The mine does not produce mine residue or tailings as coal washing is not conducted at the site.</p>	N/A
15 (1)	At least twenty eight days prior to commencement of drilling operations the lease holder must notify the relevant DNR regional hydrogeologist of the intention to drill exploratory drill holes together with information on the location of the proposed holes.	<p>It was reported that this requirement was not previously complied with. Tarrawonga Coal contacted the DWE and sought clarification regarding notification requirements and has committed to notifying the DWE prior to exploratory drilling in future.</p>	<p>Non Compliant</p> <p><b>Recommendation:</b> Ensure the DWE are notified 28 days prior to the commencement of exploratory drilling and relevant information is provided.</p>

Mining Lease Condition No.	Summary of Mining Lease Condition	Comment	Compliance Status & Recommendation
15 (2)	<p>If the lease holder drills exploratory drill holes it must satisfy the DG that:</p> <ul style="list-style-type: none"> <li>a) all cored holes are accurately surveyed and permanently marked in accordance with the Departmental guidelines so that their location can be easily established.</li> <li>b) All holes cored or otherwise are sealed to prevent the collapse of the surrounding surface</li> <li>c) All drill holes are permanently sealed with cement plugs to prevent surface discharge of groundwaters</li> <li>d) If any drill hole meets natural or noxious gases it is plugged or sealed to prevent their collapse</li> <li>e) If any drill hole meets an artesian or sub-artesian flow it is effectively sealed to prevent contamination of aquifers.</li> <li>f) Once any drill hole ceases to be used the hole must be sealed in accordance with Departmental guidelines. Alternatively the hole must be sealed as instructed by the DG.</li> <li>g) Once any drill hole ceases to be used the and its immediate vicinity is left in a clean, tidy and stable condition.</li> </ul>	<p>As discussed under ML Condition No.7 a Statutory Declaration is prepared by the Exploration Project Geologist and forwarded to the DPI. The Statutory Declaration lists the location of each exploration drill hole and confirms sealing and rehabilitation of exploration sites.</p> <p>In addition in June 2007 a Renewal Report was prepared to accompany the Renewal Application for Exploration Lease 5967. The Renewal Report (and application) was submitted to the DPI and included a geology report, proposed exploration program, report on the sealing of drill holes etc.</p> <p>It is recommended that the Statutory Declaration form is modified to include discussion of the specific requirements of this Condition.</p>	<p>Compliant</p> <p><b>Recommendation:</b> It is recommended that the Statutory Declaration form is modified to include discussion of the specific requirements of this Condition.</p>
16	<p>Operations must be carried out in a manner that does not cause or aggravate air pollution, water pollution or soil contamination or erosion, unless otherwise authorised by a relevant approval and in accordance with an accepted MOP.</p>	<p>The mine's EPL stipulates limits and conditions relating to air pollution, water pollution and soil contamination. Refer to assessment of compliance with EPL.</p>	<p>Refer to assessment of compliance with EPL.</p>

<b>Mining Lease Condition No.</b>	<b>Summary of Mining Lease Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
17	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 DG.	It was reported that operations have not interfered with on-site utilities.	Compliant
18	Activities on the lease area must not interfere with or damage fences without the prior written approval of the owner thereof or the Minister. Gates within the lease area must be closed or left open in accordance with the requirements of the landholder.	Tarrawonga Coal and Boggabri Coal are the owners of the land.	N/A
19	Operations must not affect any road unless in accordance with an accepted MOP or written prior approval of the DG. The lease holder must pay to the designated authority in control of the road the costs incurred in fixing any damage to the roads caused by operations carried out under the lease.	Prior to the transport of coal from the mine, Tarrawonga Coal constructed a sealed road from the mine site to Whitehaven mine including intersections with Goonbri Road, Rangari Road and Hoad Lane. These works were approved by Narrabri Shire Council. Whitehaven Coal Mining Pty Ltd entered into a road maintenance agreement with Gunnedah Shire Council to meet its requirements for the Tarrawonga Coal mine and Whitehaven Coal Mine. Under this agreement Gunnedah Shire Council is responsible for maintaining the specified public roads with payment provided by Whitehaven Coal on a monthly basis. A maintenance agreement was negotiated with Narrabri Shire Council specifying that East Boggabri Coal (now Tarrawonga Coal) will maintain the haul road to the mine at its cost for the duration of the mining operations (letter dated 6 December 2005).	Compliant
20	Access tracks must be kept to a minimum and be positioned so that they do not cause any unnecessary damage to the land. The design and construction of access tracks must be in accordance with specifications fixed by the DNR.	A tar sealed access road was constructed to access the mine facilities area in accordance with CoC 45. Other access roads are kept to a minimum and where possible utilise existing farm tracks.	Compliant

<b>Mining Lease Condition No.</b>	<b>Summary of Mining Lease Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
21	<p>The lease holder must not fell trees, strip bark or cut timber on the lease without the consent of the landholder.</p> <p>The leaseholder must not cut, destroy, ringbark or remove any timber or other vegetative cover on the lease area except such as directly obstructs or prevents the carrying on of operations. Any clearing not authorised under the Mining Act 1992 must comply with the provisions of the Native Vegetation Act 2003. The lease holder must obtain all necessary approvals or licence before using timber from any Crown land within the lease area.</p>	<p>The land is owned by Tarrawonga Coal and Boggabri Coal.</p> <p>During the 2006-2007 AEMR reporting period, vegetation removal was undertaken over an area of 58 ha designated for mining lease infrastructure such as internal roads, coal processing and mine facility areas and soil stockpile areas. This area was predominantly open grassland.</p> <p>During the 2007-2008 AEMR reporting period, vegetation removal was undertaken over an area of approximately 4.5ha comprising shrubby White Box woodland and regenerating White Cypress Pine – Narrow leaved Ironbark. Clearing works were undertaken following a pre-start clearing check by Countrywide ecological services. Clearing was required for mining activities.</p> <p>It was reported that no Crown land timber has been used by the mine.</p>	Compliant
23 (note there is no condition 22)	<p>If at anytime the DG is of the opinion that minerals which the lease entitles the leaseholder 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, he may give notice in writing to the lease holder requiring the holder to recover such minerals.</p>	<p>It was reported that no notice has been issued by the DG relating to this requirement.</p>	N/A

<b>Mining Lease Condition No.</b>	<b>Summary of Mining Lease Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
24	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 incidents 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.	Operations associated with Tarrawonga Coal mine are not undertaken on Crown land and therefore this requirement is not considered applicable by the site.	N/A
25	A security in the sum of \$100,000 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.	Site management indicated that the security was held, however, this was sighted by URS.	Not Determined.



## 2.3 Other relevant standards, performance measures and regulatory requirements

### 2.3.1 Compliance with issues raised by DPI & DoP

The following table summarises the issues/observations identified by the DoP and the DPI during regulatory inspections conducted in 2008. The tables also include the actions taken by Tarrawonga Coal to address the issues/observations identified, a review of the implementation of the actions by URS, and recommendations provided where URS considered the actions still had not addressed the issues raised.

<b>URS Issue No.</b>	<b>Department and Request Date</b>	<b>DPI/DoP Issue/Observation (Summary)</b>	<b>Response by Tarrawonga Coal to Address Issue (summary)</b>	<b>Review of Implementation by URS (March 2009)</b>
A1	Department of Primary Industries - Mineral Resources (DPI) AEMR review and annual environmental inspection 14 July 2008	Tarrawonga and Boggabri Mines to complete a review to understand the cumulative impacts of the two sites incorporating the environmental and meteorological data.	Response to be documented in 2008-2009 AEMR.	Tarrawonga Coal reported that it resumed monthly meetings with Boggabri Coal to discuss the cumulative impacts of the two sites Minutes were observed for a meeting held on the 16 December 2008. Items discussed included proposed expansions, dust monitoring, blasting and lighting. <b>URS recommendation:</b> It is recommended these meetings continue and minutes are retained on file.
A2	DPI 14 July 2008	Provide DECC, DPI and DWE a copy of the current Water Management Plan as well as the Water Management Plan that is currently being reviewed for submission for DoP approval.	Response to be documented in 2008-2009 AEMR.	Evidence was not available to demonstrate that the current Site Water Management Plan (Rev 1 dated August 2007) was submitted to the DECC, DPI and DWE. Further amendments to the Site Water Management Plan are required to reflect current storage dams and revised water balance. <b>URS recommendation:</b> It is recommended the Plan is amended and provided to the DECC, DPI, DWE and DoP.
A3	DPI 14 July 2008	The AEMR Plans are to show proposed activities for the next period.	Response to be documented in 2008-2009 AEMR.	To be checked in future AEMRs.

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
A4	DPI 14 July 2008	Complete a full review and provide a justification to DoP, DPI and DECC that a noise bund is not required.	Response to be documented in 2008-2009 AEMR.	<p>Tarrawonga Coal submitted a revised Noise Monitoring Plan to the DoP and DECC which was accompanied by a report from Spectrum Acoustics (dated 24 June 2008). The Spectrum report included results of modelling to predict noise levels at receivers to the south of the site if the 15m acoustic bund recommended in the project EA was not constructed. The results indicated the criteria would not be exceeded at the nearest receivers.</p> <p>The DoP was "not convinced" with the predictions and referred the report to a noise expert for review (email from Colin Phillips of the DoP to Danny Young dated 9 December 2008).</p> <p>Following the technical review the DoP outlined in an email dated 23 December 2008 (which also included a copy of the technical review) that it believes the company has a continuing obligation under the consent to construct the noise bund and a request to change this obligation would require a modification to the consent. The DoP indicated that the existing noise assessment was not sufficient to support such an application.</p> <p>Tarrawonga Coal reported that it is in the process of addressing the DoP comments on the noise assessment.</p>
A5	DPI 14 July 2008	Review options to enhance the visual screening along Goonbri Road.	Response to be documented in 2008-2009 AEMR.	To be checked in future AEMRs.
A6	DPI 14 July 2008	When reporting on site water discharges, Tarrawonga is to compare the discharges against decile measurements to demonstrate the quantity of the rainfall and discharge event.	Response to be documented in 2008-2009 AEMR.	To be checked in future AEMRs.
A7	DPI 14 July 2008	Tarrawonga are to notify DECC when a neighbouring property is purchased.	Response to be documented in 2008-2009 AEMR.	Noted.



<b>URS Issue No.</b>	<b>Department and Request Date</b>	<b>DPI/DoP Issue/Observation (Summary)</b>	<b>Response by Tarrawonga Coal to Address Issue (summary)</b>	<b>Review of Implementation by URS (March 2009)</b>
A8	DPI 14 July 2008	Provide DECC with a justification for the changes to the unattended noise monitoring program.	Response to be documented in 2008-2009 AEMR.	An email was observed from Jessica Barnes of the DECC to Danny Young of Tarrawonga Coal dated 3 September 2008 stating that the DECC is happy for unattended noise monitoring to be removed from the licence along with attended monitoring at Bollo Creek and Templemore. Licence variation dated 10 November 2008 removed the requirement for unattended monitoring.
A9	DPI 14 July 2008	Provide DECC and DPI with the MW3 data.	Tarrawonga Coal has requested that Idemitsu Boggabri Coal provide the annual monitoring data for MW3 for inclusion in the 2008-2009 AEMR which is currently being produced.	To be checked in future AEMRs.
A10	DPI 14 July 2008	The soil stockpiles adjacent to the Southern Emplacement are currently higher than 2 metres as committed in the MOP.	Tarrawonga Coal indicated that discussions were held with the DPI on this matter at the last AEMR review where it was pointed out that the existing stockpile areas marked on the MOP were insufficient to cater for the quantity of material resulting in marginally higher stockpiles. The previous year a verbal ok was given to higher stockpiles on the western boundary for the same reason.  Due to the progressive rehabilitation of the southern dump, the topsoil will be stockpiled at a greater height but for a shorter period of time limiting the effect on soil structure.	At the time of the audit site inspection the topsoil stockpile from the southern dump was being utilized by scrapers and was yet to be seeded. It was reported that there were plans to seed the topsoil stockpile in early April 2009.  To be checked in future audits.



URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
A11	DPI 14 July 2008	Submit a licence variation to the DECC for the Southern Emplacement Discharge Point.	Response to be documented in 2008-2009 AEMR.	Tarrawonga Coal reported that it is in the process of getting some redesign works done by the Soil Services with regard to drainage of the south waste emplacement and subsequent direction of flows which will be incorporated into a new site Water Management Plan which will be forwarded to the DECC for its review. In the meantime a licence variation application was submitted changing the discharge point from SD16 (not yet constructed) to the existing SD14 with the intention that upon construction of the new storage on the southern side a new variation would be submitted. URS observed an email to Jessica Barnes of the DECC from Danny Young dated 3 September 2008 outlining above approach. Licence variation dated 10 November 2008 changed discharge point SD16 to SD14.
B1	Department of Planning (DoP) audit 30 Feb 2008	<u>Finding of Non compliance</u> Exceedance of TSS limit on 1 March 2007.	Tarrawonga Coal will continue to monitor storage dam levels at discharge points and direct pumping from those storages direct to water carts or back through the sediment basin system to bring storage dam levels down. Tarrawonga Coal will continue to undertake quarterly surface water samples from storage dams to assess levels of TSS to determine if additional actions are required to assist in the sediment settling process.	Since the exceedance of the TSS limit in March 2007 there have additional exceedances of the TSS criteria notably in January and February 2008. Refer to issue C1 below.

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B2	DoP 30 Feb 2008	<p><u>Finding of Non compliance</u> Exceedance of noise limit on 11 July 2007 and 25 September 2007 at Pine Grove.</p>	<p>Advice from Spectrum Acoustics indicated that the cause of these exceedances at the Pine Grove residence was related to conditions at the time (-4 degrees with relative humidity at a maximum and frost cover on the ground which is conducive to a worst case scenario for noise propagation) and trucks crossing the cattle grid. Subsequent to this noise monitoring event, the cattle grids on the private haul roads at both the Pine Grove and Ambardo end have been removed.</p>	<p>Monitoring results since September 2007 continue to show exceedances with noise criteria at the Pine Grove and Ambardo properties. Noise levels are attributed to truck movements along the haul route. In response Tarrawonga Coal have undertaken the following activities:</p> <ul style="list-style-type: none"> <li>- removal of the cattlegrid;</li> <li>- commencement of new policy with Toll (haulage contractor) to delay commencement of morning shift operations until 6:45am;</li> <li>- ceasing of early morning short haul operation from Tarrawonga to the Canyon Site reducing number of trucks on the haul road by five;</li> </ul> <p>In addition to the above, a representative from Toll attended the CCC meeting on the 18 February 2009 to discuss community concerns related to haulage trucks. During this meeting it was advised that Toll would trial running several empty trucks back to Tarrawonga by 10pm to park up on site for loading the next morning with the aim of reducing the number of trucks running to site in the morning and the associated noise impact.</p> <p><b>URS Recommendation:</b> It is recommended Tarrawonga Coal continue to monitor noise levels and implement actions to mitigate exceedances as necessary.</p>



URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B3	DoP 30 Feb 2008	<u>Finding of Non compliance</u> No evidence that $L_{Amax}$ , $L_{A1}$ , $L_{A90}$ , $L_{Amin}$ are measured. Are these measured?	Review of unattended monitoring reports confirms measurements at the above criteria. To date only the data relevant to the $L_{Aeq}$ limits specified in the consent have been tabulated. Tarrawonga Coal will discuss with the acoustical consultant the provision of all data in future reports.	The unattended monitoring reports present the $L_{Amax}$ , $L_{A1}$ , $L_{A90}$ , $L_{Amin}$ monitoring results as charts in Appendix A. <b>URS Recommendation:</b> The requirement for unattended monitoring has recently been removed from the EPL therefore it is recommended the $L_{Amax}$ , $L_{A1}$ , $L_{A90}$ , $L_{Amin}$ are included in the attended monitoring program.
B4	DoP 30 Feb 2008	<u>Finding of Non compliance</u> There was no temperature sensor at 10 m at the meteorological monitoring station.	Carbon Based Environmental Pty Ltd has been engaged to supply and fit temperature sensors (10m) on all our meteorological monitoring stations. This will take place over the next 1-2 months.	It was reported that a new temperature sensor was installed at 10 meters in March 2008.

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B5	DoP 30 Feb 2008	<p><u>Finding of Non compliance</u> There was no evidence that the following were sent to Council and they were not on the mine's website: Groundwater Contingency Plan, Flora and Fauna Management Plan, Bushfire Management Plan. Also the 2006-2007 AEMR was not on the mine's web site.</p>	<p>The 2006-2007 AEMR has been placed on the website. Action will proceed over the next month to provide copies of the Groundwater Contingency Plan, Flora and Fauna Management Plan and Bushfire Management Plan to Gunnedah and Narrabri Shire Council's, as well as post these documents on the website.</p>	<p>Letters were available on file to show that the 2006-2007 AEMR was sent to Gunnedah and Narrabri Shire Council (13 July 2007) and that the Bushfire Management Plan was provided to Narrabri Shire Council (14 August 2006). Evidence that the Groundwater Contingency Plan and Flora and Fauna Management Plan were provided to Council was not available. At the time of the audit the 2006-2007 AEMR and the Flora and Fauna Management Plan were available on the Company's website. The following however were not available on the website:</p> <ul style="list-style-type: none"> <li>- 2007-2008 AEMR</li> <li>- Environmental Monitoring Program</li> <li>- Bushfire Management Plan</li> <li>- Groundwater Contingency Plan</li> </ul> <p><b>URS recommendation:</b> It is recommended that Tarrawonga Coal provide Council with the Groundwater Contingency Plan and the Flora and Fauna Management Plan.</p> <p><b>URS recommendation:</b> It is recommended that the website is updated to include a copy of the plans and reports listed above that are currently not available as well as any plans that have been amended since they were originally posted on the website.</p>
B6	DoP 30 Feb 2008	<p><u>Finding of Non compliance</u> Since March 2007, there was no evidence that a copy of the minutes of each CCC meeting had been sent to the DoP within a month of the meeting.</p>	<p>Copies of the meeting minutes that had not been forwarded were provided subsequent to the inspection.</p>	<p>It is reported that CCC minutes are provided to the DoP. Cover letters were observed dated 16 June 2008 and 29 December 2008 enclosing the minutes from the CCC meetings held on the 7 February 2008, 8 May 2008, 6 August 2008 and 12 November 2008.</p>

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B7	DoP 30 Feb 2008	<u>Improvement Opportunity</u> Recommended that water storages SB7 and SD 17 (which discharge to the environment) are drawn down as soon as possible to avoid discharge of sediment laden stormwater in the event of heavy rainfall.	Tarrawonga Coal monitors water levels in storages to avoid discharge and enable re-use back onto the mine site. The main source of discharge from the site has been associated with SD17 on the western boundary. This storage has graded access and a pump for direct filling of water carts. Water from this storage has also been pumped back up the sediment basin system within the mining lease to ensure appropriate capture and settling of sediment and re-use of water on the site.	During the site inspection the water cart was observed to be drawing water from SD 17 for use in dust suppression.
B8	DoP 30 Feb 2008	<u>Improvement Opportunity</u> Evidence that major stormwater drain on emplacement area had eroded in recent heavy rainfall. Since that time the steep drain had been regarded and rock retaining walls built across it. It is agreed that there is a need to improve the erosion and sediment control measures associated with this drain.	Initially as a trial to avoid significant aesthetic impacts, a series of rock walls were placed within the waterway to aid in reducing velocity of flows. The area was seeded to promote establishment of cover crop. Due to significant storm events, substantial water entered the waterway prior to groundcover getting established, thereby resulting in substantial erosion. As a consequence, Tarrawonga Coal has now removed 600 mm of subsoil and topsoil from the waterway for the placement of rock for the full length of the structure. Rock lining will be completed by the end of March 2008. In addition to rock lining, the waterway will again be seeded to promote groundcover establishment in spaces between rock in an attempt to reduce visual impact.	At the time of the site inspection the rock lined waterway had been completed and grasses observed to have been established in between rock spaces.

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B9	DoP 30 Feb 2008	<u>Improvement Opportunity</u> Road surface breaking up at the intersection of the haul route with the Kamilaroi Highway. It is recommended that representation be made to Gunnedah Council to rectify the situation.	A maintenance agreement is in place with Gunnedah Shire Council in relation to road maintenance on public roads utilised by mine associated vehicles. This arrangement is on the basis that Whitehaven provide a financial contribution to Council on an agreed basis for ongoing works. Whitehaven will continue to liaise with Gunnedah Shire Council in relation to required road works to ensure roads are maintained in a safe and trafficable condition.	The Road Maintenance Agreement between Whitehaven Coal Mining Pty and Gunnedah Shire Council dated 21 December 2005 was observed. The Agreement states that Council is responsible for determining the level of routine maintenance required and performing the maintenance and that Whitehaven Coal will be invoiced for their contribution to the maintenance work performed.
B10	DoP 30 Feb 2008	<u>Improvement Opportunity</u> Although the diesel fuel tanks were included in the bunded area, the refuelling hoses were not bunded.	The Tarrawonga Fuel tanks are above ground and self bunded to 110% capacity of the tanks. In addition to this, a concrete bund is provided adjacent to the fuel tanks for storage of oils/lubes, with drainage from this bund reporting back to a central sump and run through an oil separator unit. The fuel filling rig that fills the fuel tanks parks alongside the fuel tank area which is outside the concrete bund. The risk of significant spill during the fuel transfer process is considered minimal and controllable by operator cut off to the refuel process in the event of a connection or hose leakage. Tarrawonga Coal will continue to monitor this procedure as part of the daily management of the fuel farm area.	At the time of the audit site inspection some localised staining was observed in the gravel and soil in the vicinity of the fuel tanks. Following the inspection in mid April 2009 a concrete apron was established at the Tarrawonga fuel farm to catch drips from the fuel fill point. This new work was not assessed by URS.  To be checked in future audits.

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B11	DoP 30 Feb 2008	<u>Improvement Opportunity</u> Although an amended Site Water Management Plan has been approved by the DoP (17 October 2007), the version on the website has not been updated.	The amended Site Water Management Plan will be posted on the website within the next month.	At the time of the audit the amended Site Water Management Plan was yet to be posted on the website. It was reported that the Plan was in the process of being further amended to reflect current storage dams and revised water balance and that once these amendments were complete the Plan would be submitted to the relevant authorities and uploaded onto the website. <b>URS recommendation:</b> Include current Site Water Management Plan on website. Establish a process for ensuring revised plans are uploaded onto the website.
B12	DoP 30 Feb 2008	<u>Improvement Opportunity</u> It is noted that the LDP1 in the EPL should be changed from SD2 to SD17.	This issue has been addressed with the DECC and a licence variation correcting this anomaly is pending.	This was amended by Licence Variation dated 25 February 2008.
B13	DoP 30 Feb 2008	<u>Improvement Opportunity</u> According to the groundwater monitoring site MW2 is at Thuin, whereas according to the EPL it is at Bollol Creek Station.	The original EIS for the Tarrawonga Project identified MW2 as being at the Bollol Creek Station property which would have formed the basis for the initial EPL. The subsequent approved SWMP has MW2 located on the Templemore property which was a transcription error as the coordinates of the actual bore are within the Thuin property but immediately adjacent to the Templemore boundary. Whilst the property description for the monitoring point varies from the EPL, the ongoing monitoring remains relevant to the groundwater outcomes. Tarrawonga will seek advice from DECC as to their requirements in relation to this anomaly in due course.	Noted. Issue to be addressed with the DECC.

URS Issue No.	Department and Request Date	DPI/DoP Issue/Observation (Summary)	Response by Tarrawonga Coal to Address Issue (summary)	Review of Implementation by URS (March 2009)
B14	DoP 30 Feb 2008	<u>Improvement Opportunity</u> Lead was not reported in the monitoring results in the 2006-2007 AEMR or the Environmental Monitoring Reports, although it was included in the mine's groundwater monitoring spreadsheet.	The omission of lead results from these results was an oversight. Lead levels form part of the 6 monthly analysis of groundwater quality and will be included in future AEMR's and monitoring results reports.	Tarrawonga Coal indicated it does not intend to include the full suite of analytical results (conducted on a six monthly basis) in the environmental monitoring reports provided to the CCC as it creates significant quantities of data and makes the reports less user friendly. It was reported that the full groundwater monitoring report as produced by the consultant is made available to the CCC members should they wish to see it. Tarrawonga intends to include the results in the AEMRs. To be checked in Future AEMRs.
B15	DoP 30 Feb 2008	<u>Improvement Opportunity</u> PM <sub>10</sub> measurements are joined in a line graph in the 2006-2007 AEMR. These should be plotted as daily bar graphs as it is not advisable to interpolate PM <sub>10</sub> readings between monitored values.	The use of line based graphs has not been raised as an issue by other agencies in the review of the AEMR. However future AEMR's will include the PM10 data as a bar graph to avoid inadvertent interpolation of results.	Noted. To be checked in future AEMRs.
C1	DoP 2007-2008 AEMR comments 18 Aug 2008	Discharges on the 17 January and 6 February 2008 had high TSS levels. The DoP will continue to review the mine's monitoring data and will consider the full range of remedies available should water discharge quality criteria again be exceeded.	Response to be documented in 2008-2009 AEMR.	Since the discharges noted on the 17 January and 6 February 2008 there has been one additional discharge on the 7 October 2008 which exceeded the TSS and pH limit. It was reported that the event followed 39 mm of rainfall on the 6 October 2008 and whilst water was discharged from the dam it pooled at the lease boundary and did not leave the site. It was reported that pump outs from the dam in September following 80 mm of rain reduced the potential for significant discharge.



<b>URS Issue No.</b>	<b>Department and Request Date</b>	<b>DPI/DoP Issue/Observation (Summary)</b>	<b>Response by Tarrawonga Coal to Address Issue (summary)</b>	<b>Review of Implementation by URS (March 2009)</b>
C2	DoP 2007-2008 AEMR comments 18 Aug 2008	The greenhouse gas emissions section of the AEMR does not fulfil the requirements of CoC 51 of Schedule 4 of the mine's consent. This section should include emissions from any purchased electricity, the use of explosives and fugitive emissions from the open cut mining operations as per the <i>National Greenhouse Gas (NGA) Factors January 2008</i> .	Response to be documented in 2008-2009 AEMR.	Noted. To be checked in future AEMRs.
C3	DoP 2007-2008 AEMR comments 18 Aug 2008	The company is required to include a summary of complaints received during the past year and compare this to the complaints received in the previous 5 years in the AEMR. This has not been included in the 2007-2008 AEMR.	Response to be documented in 2008-2009 AEMR.	Noted. To be checked in future AEMRs.
C4	DoP 2007-2008 AEMR comments 18 Aug 2008	All quarterly noise monitoring data appended to the AEMR claim that the mine's noise impact assessment criteria must be exceeded by more than 2dB(A) to be considered as non-compliant with the relevant criteria. This does not accurately reflect the wording of the CoC. The DoPs view is that the company would be non complaint should these criteria be systematically exceeded. i.e repeated exceedance of any magnitude is considered to be non compliant, a one-off exceedance is not.	Response to be documented in 2008-2009 AEMR.	Noted.

### 2.3.2 Dangerous Goods

A complete audit of Dangerous Goods storage against the relevant regulations and standards was not conducted as part of this audit however the following was noted:

- At the time of the site visit hydrocarbons were generally observed to be stored within a designated concrete bunded area adjacent to the workshop which drains to an oil water separator.
- Poor waste hydrocarbon storage was observed in contractor storage areas e.g. storage of drums containing waste hydrocarbons and old batteries were observed without cover or secondary containment on unsealed areas.
- Two 60,000 L diesel tanks are located on site for fuelling of mobile equipment. The tanks are above ground and self bunded. The audit conducted by the DoP on the 30 January 2008 identified (as an improvement opportunity) that the refuelling hoses attached to the tanks are not bunded. Localised staining of the gravel and soil was observed in the vicinity of the fuel tanks. Following the audit site inspection, Tarrawonga Coal installed a concrete apron at the fuel farm to catch spills from the fuel fill point in mid April.
- Copies of MSDS are held within the site office.
- A Dangerous Goods Notification (as provided by WorkCover) was not available at the time of the site visit. Following issue of the Final Audit Report, Tarrawonga Coal notified WorkCover of the dangerous goods stored on site and an *Acknowledgment of Notification* was received from WorkCover (dated 30 July 2009) for the two above ground diesel tanks.

It was reported that explosives are brought onto site as required by Orica Explosives and are not stored on site.

The following recommendations are made with regards to Dangerous Goods management:

**URS Recommendation:**

General house keeping is required at the contractors waste storage area, specifically storage of waste solvents, hydrocarbons and batteries.

**URS Recommendation:**

Monitor performance of concrete apron and spill containment at the fuel fill point.

## 3.0 Summary of Additional Non Compliances

In general the assessment of compliance with the EPL, Mining Lease and other relevant standards, performance measures and statutory requirements identified the same or similar issues to those identified and presented within the Final Report, Independent Environmental Audit: Tarrawonga Coal Mine, Boggabri, NSW dated May 2009.

Table 3-1 below summarises the additional non compliances identified as a result of this specific assessment against the EPL and Mining Lease. The table also includes conditions assessed as compliant where recommendations for improvement are made.



Table 3-1 Summary of additional non conformances identified with EPL and Mining Lease

<b>Condition No.</b>	<b>Summary of Condition</b>	<b>Comment</b>	<b>Compliance Status &amp; Recommendation</b>
EPL 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.	The majority of the monitoring records reviewed included the date, time and location of monitoring. However some of the monitoring records did not include the name of the person who collected the sample (e.g. wet weather discharge and blasting).	Compliant (a to c) Non Compliant (d)  <b>Recommendation:</b> Include the name of the person who collected the sample on sampling records.

Condition No.	Summary of Condition	Comment	Compliance Status & Recommendation																																				
EPL M2.1	<p>For each monitoring/discharge point or utilisation area specified, the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified. The licensee must use the sampling method, units of measure, and sample at the frequency, specified in the EPL.</p> <table border="1" data-bbox="394 539 994 1342"> <thead> <tr> <th>EPL Monitoring Point</th> <th>Pollutant</th> <th>Frequency</th> <th>Sampling Method</th> </tr> </thead> <tbody> <tr> <td>1,2,3,4 (wet weather discharge)</td> <td>Conductivity Oil &amp; Grease TSS pH</td> <td>After discharge</td> <td>Representative sample</td> </tr> <tr> <td>5,6,7,8 (ambient water quality)</td> <td>Conductivity Oil &amp; Grease TSS pH</td> <td>After discharge</td> <td>Representative sample</td> </tr> <tr> <td>9,10,11,12 (groundwater)</td> <td>Conductivity lead Standing water level pH</td> <td>Every six months</td> <td>Representative sample</td> </tr> <tr> <td>13 (surface water quality)</td> <td>Conductivity Oil &amp; Grease TSS pH</td> <td>Quarterly</td> <td>Representative sample</td> </tr> <tr> <td>15</td> <td>PM10</td> <td>Every 6 days</td> <td>AM-18</td> </tr> <tr> <td>15</td> <td>Particulates - Deposited Matter</td> <td>Continuous</td> <td>AM-19</td> </tr> <tr> <td>16,17,19,20,21,22,23</td> <td>Particulates - Deposited Matter</td> <td>Continuous</td> <td>AM-19</td> </tr> <tr> <td>18</td> <td>PM10</td> <td>Every 6 days</td> <td>AM-18</td> </tr> </tbody> </table>	EPL Monitoring Point	Pollutant	Frequency	Sampling Method	1,2,3,4 (wet weather discharge)	Conductivity Oil & Grease TSS pH	After discharge	Representative sample	5,6,7,8 (ambient water quality)	Conductivity Oil & Grease TSS pH	After discharge	Representative sample	9,10,11,12 (groundwater)	Conductivity lead Standing water level pH	Every six months	Representative sample	13 (surface water quality)	Conductivity Oil & Grease TSS pH	Quarterly	Representative sample	15	PM10	Every 6 days	AM-18	15	Particulates - Deposited Matter	Continuous	AM-19	16,17,19,20,21,22,23	Particulates - Deposited Matter	Continuous	AM-19	18	PM10	Every 6 days	AM-18	<p><u>Surface water monitoring</u></p> <p>During the 2006-2007 Annual Return period there were no discharges reported and therefore no monitoring undertaken at EPL monitoring points 1, 2, 3, 4, 5, 6, 7 and 8.</p> <p>One round of quarterly monitoring was undertaken at EPL point 13 for conductivity, oil and grease, TSS and pH. It was reported that there was no access to the mine void on the first sample date.</p> <p>During the 2007-2008 Annual Return the following discharges were reported:</p> <ul style="list-style-type: none"> <li>- EPL point 1: two discharges</li> <li>- EPL point 2: two discharges</li> <li>- EPL point 3: one discharge</li> <li>- EPL point 4: no discharges</li> <li>- EPL point 5: one discharge</li> <li>- EPL point 6: two discharges</li> <li>- EPL point 7: no discharges</li> <li>- EPL point 8: no discharges</li> </ul> <p>Monitoring of TSS, conductivity, oil and grease and pH was undertaken during these events.</p> <p>Two rounds of quarterly surface monitoring were undertaken at EPL point 13 for conductivity, oil and grease, TSS and pH. It was reported that there was no access to the mine void during the other two sampling events.</p> <p><u>Groundwater monitoring</u></p> <p>During the 2006-2007 Annual Return period two rounds of groundwater monitoring were reported to be undertaken however results of the second monitoring event were not available at the time of reporting. Monitoring of conductivity, lead, pH and standing water level was undertaken at EPL point 9, 10, 11 and 12.</p> <p>During the 2007-2008 Annual Return period two rounds of groundwater monitoring were undertaken at EPL points 9,10, 11 and 12. Results from an additional two sampling rounds undertaken by Boggabri Coal were included in the Annual Return for EPL point 11.</p>	<p>Compliant - wet weather, ambient water quality, groundwater, PM10 and Deposited Matter.</p> <p>Non compliant - surface water quality</p> <p>There were some instances where the required number of surface water quality samples were not obtained due restricted access to the mine void during the sampling events.</p>
EPL Monitoring Point	Pollutant	Frequency	Sampling Method																																				
1,2,3,4 (wet weather discharge)	Conductivity Oil & Grease TSS pH	After discharge	Representative sample																																				
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Condition No.	Summary of Condition	Comment	Compliance Status & Recommendation																				
EPL M8.1	<p>Noise and blast monitoring</p> <p>For each monitoring point specified below, the Licensee must monitor the noise or vibration parameter specified in Column 1. The Licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns.</p> <p>Points N1, N2, N3, N4</p> <table border="1" data-bbox="398 544 945 962"> <thead> <tr> <th>Parameter</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling method</th> </tr> </thead> <tbody> <tr> <td>Ambient Noise</td> <td>L<sub>Aeq</sub> (15 minute) L<sub>Amax</sub> L<sub>A1</sub> L<sub>A10</sub> L<sub>A90</sub> L<sub>Amin</sub></td> <td>As detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05</td> <td>Type 1 noise meter unattended and/or attended monitoring as detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05</td> </tr> </tbody> </table> <p>Points N1, N2, N3</p> <table border="1" data-bbox="398 1002 945 1209"> <thead> <tr> <th>Parameter</th> <th>Units of measure</th> <th>Frequency</th> <th>Sampling method</th> </tr> </thead> <tbody> <tr> <td>Blast Noise</td> <td>DB(Lin Peak)</td> <td>Every blast</td> <td>Type 1 noise blast logger</td> </tr> <tr> <td>Blast Vibration</td> <td>Mm/s</td> <td>Every blast</td> <td>Geophone logger or similar</td> </tr> </tbody> </table> <p>N1 = within 30m of the residence on Templemore            N2 = within 30m of the residence on Bollol Creek Station            N3 = within 30m of the residence on Tarrawonga            N4 = within 30 m of the residence on Ambardo</p>	Parameter	Units of measure	Frequency	Sampling method	Ambient Noise	L <sub>Aeq</sub> (15 minute) L <sub>Amax</sub> L <sub>A1</sub> L <sub>A10</sub> L <sub>A90</sub> L <sub>Amin</sub>	As detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05	Type 1 noise meter unattended and/or attended monitoring as detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05	Parameter	Units of measure	Frequency	Sampling method	Blast Noise	DB(Lin Peak)	Every blast	Type 1 noise blast logger	Blast Vibration	Mm/s	Every blast	Geophone logger or similar	<p><u>Noise Monitoring</u></p> <p>During the audit period quarterly attended noise monitoring and six monthly unattended monitoring was undertaken by acoustic consultants Spectrum Acoustics.</p> <p>Attended monitoring was undertaken at the Templemore, Bollol Creek Station, Tarrawonga and Ambardo properties. The Templemore property was purchased by Tarrawonga Coal in May 2007 and the Bollol Creek Station property in June 2008.</p> <p>The requirement to monitor noise at the Templemore and Bollol Creek Station properties and the requirement to undertake unattended monitoring was removed from the EPL in November 2008.</p> <p>Spectrum Acoustics report that a Type 1 noise meter is used to measure noise emissions.</p> <p>The attended monitoring reports provided by Spectrum Acoustics do not include results of the L<sub>Amax</sub>, L<sub>A1</sub>, L<sub>A10</sub>, L<sub>A90</sub> and L<sub>Amin</sub>. It is recommended that these results are included in the reports.</p> <p><u>Blast Monitoring</u></p> <p>During the audit period blast monitoring (noise and vibration) was conducted by Orica Limited at the Templemore, Tarrawonga and Bollol Creek Station properties during every blast. The Bollol Creek Station property was acquired by Tarrawonga Coal in June 2008 and monitoring at this location ceased in January 2009. The requirement to monitor at the Bollol Creek Station property was removed from the EPL in November 2008.</p> <p>The type of logger used by Orica is not specified on the Blast Summary sheet.</p>	<p>Non Compliant</p> <p><b>Recommendation:</b> It is recommended that Tarrawonga Coal request Spectrum Acoustics to include monitoring results for the L<sub>Amax</sub>, L<sub>A1</sub>, L<sub>A10</sub>, L<sub>A90</sub> and L<sub>Amin</sub> in its reports.</p> <p><b>Recommendation:</b> It is recommended that Tarrawonga Coal request Orica to include details of the type of logger used for blast noise and blast vibration monitoring on its Blast Summary record sheet.</p>
Parameter	Units of measure	Frequency	Sampling method																				
Ambient Noise	L <sub>Aeq</sub> (15 minute) L <sub>Amax</sub> L <sub>A1</sub> L <sub>A10</sub> L <sub>A90</sub> L <sub>Amin</sub>	As detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05	Type 1 noise meter unattended and/or attended monitoring as detailed in the Noise Management Plan Dec 05 and Road Noise Management Plan Dec 05																				
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Condition No.	Summary of Condition	Comment	Compliance Status & Recommendation
ML 15 (1)	At least twenty eight days prior to commencement of drilling operations the lease holder must notify the relevant DNR regional hydrogeologist of the intention to drill exploratory drill holes together with information on the location of the proposed holes.	It was reported that this requirement was not previously complied with. Tarawonga Coal contacted the DWE and sought clarification regarding notification requirements and has committed to notifying the DWE prior to exploratory drilling in future.	<p>Non Compliant</p> <p><b>Recommendation:</b> Ensure the DWE are notified 28 days prior to the commencement of exploratory drilling and relevant information is provided.</p>
15 (2)	<p>If the lease holder drills exploratory drill holes it must satisfy the DG that:</p> <ul style="list-style-type: none"> <li>a) all cored holes are accurately surveyed and permanently marked in accordance with the Departmental guidelines so that their location can be easily established.</li> <li>b) All holes cored or otherwise are sealed to prevent the collapse of the surrounding surface</li> <li>c) All drill holes are permanently sealed with cement plugs to prevent surface discharge of groundwaters</li> <li>d) If any drill hole meets natural or noxious gases it is plugged or sealed to prevent their collapse</li> <li>e) If any drill hole meets an artesian or sub-artesian flow it is effectively sealed to prevent contamination of aquifers.</li> <li>f) Once any drill hole ceases to be used the hole must be sealed in accordance with Departmental guidelines. Alternatively the hole must be sealed as instructed by the DG.</li> <li>g) Once any drill hole ceases to be used its immediate vicinity is left in a clean, tidy and stable condition.</li> </ul>	<p>As discussed under ML Condition No.7 a Statutory Declaration is prepared by the Exploration Project Geologist and forwarded to the DPI. The Statutory Declaration lists the location of each exploration drill hole and confirms sealing and rehabilitation of exploration sites. In addition in June 2007 a Renewal Report was prepared to accompany the Renewal Application for Exploration Lease 5967. The Renewal Report (and application) was submitted to the DPI and included a geology report, proposed exploration program, report on the sealing of drill holes etc.</p> <p>The Statutory Declaration does not specifically address all of the requirements of the condition.</p> <p>In order to reflect the requirements of the condition, it is recommended that the Statutory Declaration form is modified to include discussion of the specific requirements of this Condition.</p>	<p>Compliant</p> <p><b>Recommendation:</b> It is recommended that the Statutory Declaration form is modified to include discussion of the specific requirements of this Condition.</p>

## 4.0 Summary of Recommendations

In general the assessment of compliance with the EPL, Mining Lease and other relevant standards, performance measures and statutory requirements identified the same or similar recommendations to those identified and presented within the Final Report, Independent Environmental Audit: Tarrawonga Coal Mine, Boggabri, NSW dated May 2009. These are summarised in Table 4-1 below.

Some additional recommendations specific to this assessment of compliance with the EPL and Mining lease were made and are summarised in Table 4-2.

**Table 4-1 Summary of recommendations (from original Final Audit Report)**

Reference	Recommendation
A1	It is recommended the monthly meetings to discuss cumulative impacts between Idemitsu Boggabri Coal and Tarrawonga Coal continue and minutes are retained on file.
A2	It is recommended the Site Water Management Plan is amended to reflect current storage dams and revised water balance and provided to the DECC, DPI, DWE and DoP.
B2 & Sch 4 CoC 6	It is recommended Tarrawonga Coal continue to monitor noise levels and implement actions to mitigate exceedances as necessary.
B3 & Sch 4 CoC 6	It is recommended the LAMax, LA1, LA90, LAmin are included in the attended monitoring program and that a discussion of compliance with the LA1 criteria is provided in the monitoring reports by Spectrum Acoustics.
Sch 4 CoC 6	It is recommended that Tarrawonga Coal continues to consult with the DECC regarding noise criteria exceedances.
B5 & Sch 4 CoC 31	It is recommended that Tarrawonga Coal provide Council with the Groundwater Contingency Plan and the Flora and Fauna Management Plan.
Sch 4 CoC 32	It is recommended that Tarrawonga Coal engages consultants to conduct independent review on surface and groundwater monitoring and observable trends.
B14	It is recommended that Tarrawonga Coal ensures the Environmental Monitoring Reports presented at CCC meetings include lead levels as part of the summary of groundwater monitoring results
Section 4.2 of original Audit Report	It is recommended that where a complaint follow up action involves other people (eg notifying Toll Manager to contact resident) the final follow up action taken to close out the complaint should also be recorded on the complaints form.
Section 4.3 of original Audit Report	It is recommended that a formalised system is established and implemented for checking the performance of contour drains and other sediment and erosion control structures following significant rainfall
Section 4.9 of original Audit Report	Although a Rehabilitation Plan is not required by the CoC it is considered best practice that a plan is developed to provide a systematic approach to rehabilitation. This plan should include: <ul style="list-style-type: none"> <li>○ Formally defined Standards and rehabilitation closure criteria as defined by representative native vegetation communities around the mine;</li> <li>○ Systematic approach to rehabilitation and should include detailed design of structures (e.g. contours), procedures for rehabilitation (e.g. top soil depth, sub soil depth, seed mixes);</li> <li>○ Planned final landforms and a detailed description of final landuse;</li> <li>○ Detail a site specific monitoring program required to be conducted against the closure criteria and specifications and how monitoring is to be recorded. The monitoring program should assess the long term stability and functioning of the re-established ecosystems;</li> <li>○ Define an audit approach against all rehabilitation methodologies including expert third party review. This would cover experts on soil chemistry and management, flora and fauna management, drainage specialist etc;</li> <li>○ Define actions to be taken if closure criteria and rehabilitations standards are not being met;</li> <li>○ Define maintenance approaches to the rehabilitation such as weed management;</li> </ul>

Reference	Recommendation
	<ul style="list-style-type: none"> <li>○ How external stakeholders such as the DPI, DoP and community provide input to the rehabilitation plan and monitoring on an ongoing basis eg through annual AEMR and other inspections etc;</li> <li>○ The process for sign off of rehabilitated land with the DPI;</li> <li>○ How the rehab plan will be updated to reflect lessons learnt and emerging/improved rehabilitation practices;</li> <li>○ The incorporation of mine planning in mine closure planning.</li> </ul>
Section 4.9 of original Audit Report & Sch 4 CoC 48	It is recommended that topsoiling and revegetation be conducted as soon as possible on the southern batter to prevent weeds and erosion from occurring and to get final revegetation established as soon as practicable (subject to growing seasons, rainfall etc).
Sch 4 CoC 1	It is recommended that Tarrawonga Coal continues to monitor deposited dust at additional monitoring site adjacent to Forest View and if exceedances of dust goal continue, review with IBC and implement additional measures as appropriate.
Sch 4 CoC 23	It is recommended that Tarrawonga Coal continues to monitor storage dam levels at discharge points and manage water to avoid discharges. Continue to monitor water quality and confirm SWMP initiatives are effective in managing discharges.
Sch 4 CoC 33	It is recommended that Tarrawonga Coal implements biodiversity offset strategy as per the EIS and Condition of Consent.
Sch 4 CoC 34	It is recommended that Tarrawonga Coal implements arrangements to provide long term security for the offset.
Sch 4 CoC 36	It is recommended that Tarrawonga Coal implements offset strategy and undertake performance reviews as required by the CoC.
Sch 4 CoC 36 & Section 4.9 of original Audit Report	It is recommended that Tarrawonga Coal increases the scope of the annual review of the Flora and Fauna Management Plan to include weed management and rehabilitation performance and report in the AEMR. The reports should be a tool for management to gain input on their rehabilitation techniques, how successful they have been towards a specific rehabilitation criteria, provide advice on what areas of rehabilitation requires maintenance or addressing and how site can improve rehabilitation practices for improved outcomes. The monitoring should fit into an overall Rehabilitation Plan as recommended in Section 4.9.
Sch 4 CoC 48	Although a Rehabilitation Plan is not required by the CoC it is considered best practice that a plan is developed. See Section 4.9 Recommendation.
Sch 4 CoC 48	It is recommended that Tarrawonga Coal seeds the batters of storage dam (SD16) in the vicinity of the Thuin property.
Sch 4 CoC 48	It is recommended that Tarrawonga Coal continues to work towards seeding the topsoil area.
Sch 4 CoC 51	It is recommended that Tarrawonga Coal address the DoP comment and include more comprehensive greenhouse gas emissions calculation in future AEMRs.
Sch 4 CoC 52	It is recommended that Tarrawonga Coal ensures all waste disposed and recycled is recorded in the Waste Register.
Sch 4 CoC 52	It is recommended that Tarrawonga Coal implements a more thorough system of monitoring and recording waste disposal and recycling to enable better investigation of ways to minimise waste generation.
Sch 4 CoC 54	It is recommended that Tarrawonga Coal improves general house keeping at the contractors waste storage area, specifically storage of waste solvents, hydrocarbons and batteries.
Sch 4 CoC 54	It is recommended that Tarrawonga Coal monitor the performance of the newly constructed concrete apron at the fuel fill point within the fuel farm area.
Sch 5 CoC 3	It is recommended that Tarrawonga Coal undertakes a review of relevant human health studies and update the brochure to the satisfaction of the DG.

<b>Reference</b>	<b>Recommendation</b>
Sch 5 CoC 10, B5 & B11	It is recommended that Tarrawonga Coal ensures the website is kept up to date and amended plans and new plans are included on the website. The following should be included on the website: <ul style="list-style-type: none"> <li>- 2007-2008 AEMR</li> <li>- Environmental Monitoring Program</li> <li>- Bushfire Management Plan</li> <li>- Groundwater Contingency Plan</li> <li>- Amended Site Water Management Plan</li> </ul>
B5 and B11	It is recommended that a process is established for ensuring revised plans are uploaded onto the website.
Sch 5 CoC 10	It is recommended that Tarrawonga Coal confirms with NSC and GSC whether Plans and AEMRs provided are made publically available at the NSC and GSC offices.
Sch 5 CoC 11	It is recommended that Tarrawonga Coal confirms with NSC and GSC whether Monitoring Reports provided during CCC meetings are made publically available at the NSC and GSC offices.
Section 6.4 of original Audit Report	It is recommended that Tarrawonga Coal revise the EMS to reflect the current name of the mine, current site operations, current licenses and current responsibilities. The EMS should reference the various management and monitoring plans that have been developed and ensure that this list is kept up to date. In addition the EMS would benefit by the addition of discussion of quality control procedures, reporting requirements, record keeping procedures, training requirements and the review process.
Section 6.4 of original Audit Report	It is recommended that a site inspection process, potentially including a checklist or form is developed for checking and documenting the effectiveness of environmental controls. The process for conducting the site inspections (eg frequency, by whom, how identified issues are communicated and auctioned etc) should be outlined in the EMS.
Section 6.4 of original Audit Report	It is recommended that the environmental plans and programs be reviewed and updated to reflect current operations and a program is established to periodically review the monitoring and management plans to ensure they are kept up to date.

**Table 4-2 Additional recommendations from this assessment against the EPL and Mining Lease**

<b>Reference</b>	<b>Recommendation</b>
EPL M1.3	Include the name of the person who collected the sample on sampling records.
EPL M8.1	It is recommended that Tarrawonga Coal request Spectrum Acoustics to include monitoring results for the $L_{Amax}$ , $L_{A1}$ , $L_{A10}$ , $L_{A90}$ and $L_{Amin}$ in its reports.
EPL M8.1	It is recommended that Tarrawonga Coal request Orica to include details of the type of logger used for blast noise and blast vibration monitoring on its Blast Summary record sheet.
ML 15 (1)	Ensure the DWE are notified 28 days prior to the commencement of exploratory drilling and relevant information is provided.
ML 15 (2)	It is recommended that the Statutory Declaration form prepared by the Exploration Project Geologist is modified to include discussion of the specific requirements of this Condition.



Yours faithfully,

**URS AUSTRALIA PTY LTD**

A handwritten signature in black ink, appearing to read 'Helen Pieris', with a long, sweeping underline.

Helen Pieris

Senior Environmental Scientist

A handwritten signature in black ink, appearing to read 'Michael Woolley', with a stylized, cursive script.

Michael Woolley

Principal Environmental Engineer