

Independent Environmental Audit

Biodiversity Offset Management Plan



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Biodiversity Offset Management Plan

Prepared for

Werris Creek Coal

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Executive Summary

AECOM Australia Pty Limited has been commissioned by Werris Creek Coal Pty Limited to conduct the 2011 Independent Environmental Audit for the Werris Creek Coal Mine operated by Whitehaven Coal Limited in accordance with the Development Consent DA-172-7-2004 (as modified). Under Condition 42, Schedule 4 of DA-172-7-2004 (as modified) a separate independent audit of the Biodiversity Offset Management Plan (BOMP) is also required. The audit of the BOMP was completed in parallel with the overall site audit. This report contains the results and recommendations from the BOMP audit. A separate report has been prepared to document the findings of the overall site audit.

The audit was undertaken generally in accordance with *AS/NZS ISO 19011:2003 – Guidelines for quality and/or environmental management systems auditing*. The audit covers the period between 2008 and 2011. The audit was conducted by AECOM's Peter Horn and Rochelle Lawson (assisted by Jessica Miller) and consisted of a detailed desktop review of documentation, interviews with key Whitehaven staff and a site visit of Werris Creek mine. Additional desktop reviews were conducted prior to and following the site inspection.

It was generally considered that the development is operating in accordance with the commitments made in the BOMP. The non-compliances identified during the audit were primarily due to overly-prescriptive wording in the BOMP rather than actual failings in the management of the biodiversity offset area.

The audit identified three non-compliances against the BOMP, all regarding feral animal control. A number of actions were also recommended to improve the clarity of the BOMP and to improve the performance and compliance of the site against the BOMP.

Overall, Whitehaven has documented systems and sound procedures for record keeping relating to environmental activity. An adequate level of resources is devoted to environmental matters through a competent environmental and operations team. It was observed that a good standard of biodiversity and rehabilitation management was being applied to the operation of Werris Creek at the time of the audit as indicated by the field inspection.

1.0 Introduction

1.1 Background

AECOM Australia Pty Ltd (AECOM) was commissioned by Werris Creek Coal Pty Ltd to undertake an Independent Environmental Audit (IEA) of Werris Creek Coal Mine (WCC) in accordance with Condition 6, Schedule 6 of the Development Consent DA-172-7-2004 (as modified). WCC is a wholly owned subsidiary of Whitehaven Coal Limited (WCL).

The audit was undertaken consistent with the relevant planning approval condition for WCC and focused on verification of the site's compliance against key licences, approvals and supporting documents. The audit covers the period 2008-2011.

Under Condition 42, Schedule 4 of DA-172-7-2004 (as modified), a separate independent audit of the Biodiversity Offset Management Plan (BOMP) is also required. This audit of the BOMP was completed in parallel with the overall audit of site compliance. As the BOMP was only prepared and approved in 2010, the BOMP audit period covered a period from December 2010 to current.

This report contains the results and recommendations from the BOMP audit. A separate report has been prepared to document the findings of the overall site audit.

1.2 Site Description

WCL operates the WCC located approximately 4 km south of Werris Creek and 11 km north-northwest of Quirindi in central northern New South Wales.

Mining commenced at the WCC in 2005, and WCL acquired a 100% interest in the WCC in December 2007.

WCC is located in a predominately rural agricultural area. It lies within a 679 ha area covered by Mining Lease 1563 which incorporates the "Narrawolga" property and parts of the "Eurunderee" and "Cintra" properties.

WCC is mined using a conventional haulback system with truck and excavator operations. The mining sequence generally moves in a northerly direction with the emplacement of overburden occurring originally into the out of pit overburden emplacement area and then into the pit as mining progressed. The Mine produces approximately 1.5 million tonnes of raw coal per annum for sale in the domestic and export markets. The majority of the coal is transported directly by rail from WCC from where it is sold to markets via the Port of Newcastle with a small portion supplied to local industry.

The WCC Biodiversity Offset Area (BOA) covers an area of approximately 362.16 ha and consists of remnant woodland, grassland and shrubby open forest. The vegetation has been mapped in four condition classes (including cleared land) on the former "Narrawolga", "Eurunderee" and "Railway View" properties. The offset properties are located approximately 6 km south of the township of Werris Creek and have been acquired by WCC to provide the biodiversity offset requirements for the current and proposed future operations. The BOA also includes 52.2 ha of mine rehabilitation for a corridor linking the eastern and western sections to provide landscape connectivity.

A Biodiversity Offset Strategy (BOS) was prepared and approved as part of the original application for the mine in February 2005, which provided an offset area of 200 ha. The development consent was subsequently modified to extend the mine area further to the north, which would involve impacting on the originally proposed offset area. A revised BOS was submitted and approved in September 2008 which provided an alternative offset area of 330 ha. Further modifications were approved in April and September 2009 and the BOS was subsequently revised to include additional land, bringing the total requirement of the BOA to 362 ha.

The April 2009 modification included the requirement to prepare and implement a Biodiversity Offset Management Plan for the BOS. The final BOS described within the BOMP was accepted by the Department of Planning in August 2010. WCC committed to preparing and implementing a management plan to ensure that the offset area is improved and maintained in a suitable condition and to place a conservation covenant on the title of the affected land to provide in perpetuity security. The BOS objectives are based around the three specific categories of integrating landscapes, achieving sustainable growth and development, and establishing the final land use.

1.3 Scope of Work

The scope of work for this audit is set out in Condition 42, Schedule 4 of DA-172-7-2004 (as modified). Table 1 lists the requirements of this condition and indicates where each has been addressed in this audit report.

Table 1 Auditing conditions and where each is address in this report

| No. | Condition | Where addressed in this report |
|--------|--|--------------------------------|
| 42 | Prior to 31 August 2011, and every 3 years thereafter, the Applicant shall commission, and pay the full cost of, an Independent Audit of the Biodiversity Offset Management Plan. This audit must: | This Report |
| 42 (a) | Be conducted by a suitably qualified, experienced, and independent person whose appointment has been approved by the Director-General; | Section 1.4 |
| 42 (b) | Assess the performance of the Biodiversity Offset Management Plan; and | Section 2.0 and Appendix A |
| 42 (c) | If necessary, recommend actions or measures to improve the performance of the Biodiversity Offset Management Plan. | Section 2.0 and Appendix A |

1.4 Audit Approach

The overall site audit and the BOMP audit were undertaken generally in accordance with *AS/NZS ISO 9011:2003 – Guidelines for quality and/or environmental management systems auditing* by the following AECOM staff:

- Peter Horn (Associate Director Environment) – Lead Auditor.
- Rochelle Lawson (Senior Ecologist) – Auditor.
- Jessica Miller (Graduate Environmental Professional) – Assistant Auditor.

The NSW Department of Planning and Infrastructure (DP&I) confirmed by letter (dated 6 July 2011) that the Director-General has endorsed the appointment of the above audit team.

The audit consisted of a detailed desktop review of documentation, interviews with WCC Environmental Officer Andrew Wright and a site visit of WCC on 1, 2 and 3 August 2011.

An agenda for this audit and for the IEA is included in Appendix B as these two audits were undertaken in parallel with one another. The agenda contains information about site meetings and an itinerary for the site inspection components of the audit (both inclusive of attendees).

A general field inspection was undertaken on 1 August 2011. Weather at the time of the field inspection was warm and fine.

1.4.1 Limitations of the Audit

The AECOM audit team received complete cooperation from all staff during the audit. However, the following issues should be noted, which limit to some extent, the audit findings:

- Opinions presented in this report apply to the site's conditions and features as they existed at the time of AECOM's site visit in August 2011 and those reasonably foreseeable. They necessarily cannot apply to conditions and features which AECOM is unaware of and has not had the opportunity to evaluate.
- The conclusions presented in this report are professional opinions based solely on AECOM's visual observations of the site and the immediate vicinity, and upon AECOM's interpretations of the documentation reviewed, interviews and conversations with personnel knowledgeable about the site and other available information, as referenced in this report. These conclusions are intended exclusively for the purpose stated herein, at the site listed, and for the project indicated.
- This report does not, and does not purport to, give legal advice on the actual or potential environmental liabilities of any individual or organisation, or to draw conclusions as to whether any particular circumstances constitute a breach of relevant legislation.

1.5 Documents Reviewed

The focus of this audit was compliance with and performance of the Biodiversity Offset Management Plan (Eco Logical, 20 October 2010).

A number of monitoring reports, subsidiary documents and correspondence documentation were reviewed during the audit. These are referenced within the Compliance Audit table in Appendix A.

1.6 Report Structure

This report is structured generally in accordance with Condition 42, Schedule 4 of DA-172-7-2004 (as modified) as follows:

Section 1.0 provides an introduction, background, and description of WCC, describes the requirements for the audit and provides a guide to the structure of the report.

Section 2.0 provides a discussion of the audit findings, including the non-compliances identified and the recommended actions or measures to improve the performance of the BOMP.

The Appendices contain the assessment of compliance against each of the commitments made in the BOMP and the Audit Agenda.

2.0 Environmental Compliance

The performance of the BOMP was assessed by reviewing the compliance with commitments made within the BOMP document and relevant sections of DA-172-7-2004 (as modified).

In the assessment of compliance, the status of each commitment is described as “Compliant” or “Non Compliant.” Where commitments have not yet been activated or are no longer applicable (due to activities not being commenced or requests not being made for example), the term “Not Triggered” has been applied. Due to time and budgetary constraints, some conditions were unable to be tested as part of the audit (Table 4). These conditions have been categorised as “Not Able to Verify,” and it is recommended that these conditions be prioritised in future audits.

It was generally considered that the development is operating in accordance with the commitments made in the BOMP. The non-compliances identified during the audit were primarily due to overly-prescriptive wording in the BOMP rather than actual failings in the management of the biodiversity offset area.

At the time of the audit, revegetation at the site had not commenced. The wording of the BOMP indicated that the initial revegetation strategies were due to be implemented within the first year of the operation of the BOMP. As this audit takes place within the first year of the BOMP, the completion of these revegetation actions has not been triggered yet, as they are not due for completion until 14 December when the BOMP reaches one year of implementation. It is understood that the intent of the rehabilitation strategy is to achieve infill planting of the overstorey and understorey within the first three years of the management period.

The non-compliances identified and recommendations made to improve the performance and measurability of the BOMP are summarised in Table 2. Ultimately three commitments within the BOMP were found to be non-compliant. These non conformances were largely associated with the wording of commitments within the BOMP document itself, which left little room for flexibility in implementation onsite.

Table 2 Summary of Non-Compliances with BOMP

| Section | Requirement | Audit Finding | Recommendation |
|-------------|--|--|---|
| 4.14 | Feral Cats will be controlled opportunistically when observed (i.e. Shooting by person with firearms licence using high powered calibre rifle as humanely as possible e.g. single shot to head). | The Biodiversity Offset Area Monitoring Report Spring 2010 (Eco Logical 2010) recorded a single feral cat, but there was no record indicating if action was undertaken in response. In the absence of targets and action triggers, the presence of a single animal may not warrant a control response, though the BOMP wording indicates control by shooting will be implemented, the requirement is worthy of future clarification. | It is recommended that triggers and targets for feral cat control be established within the BOMP that are related to a management outcome. |
| 4.14 | Fox control through baiting program across BOA twice/year (autumn and spring). Use 1080 poison baits. | BOA Annual Review (30 March 2011) identified hares and foxes to be added to control program for 2011-12. BOA Monitoring Report Spring 2010 also recommended fumigation of stag tree currently acting as a fox den. | It is recommended that triggers and targets for fox control be established within the BOMP that are related to a management outcome. |
| 5, Table 11 | Rabbit control undertaken annually in summer. | No feral animal control programs have been implemented. This requirement also appears to conflict with the requirements in section 4.13.1. | It is recommended that triggers and targets for rabbit control be established within the BOMP that are related to a management outcome (e.g. successful regeneration of natives within offset area). It is recommended that the conflict between this section and section 4.13.1 be resolved. |

In addition to recommendations for non-compliances, the audit team has made some further recommendations for potential amendment of the BOMP (refer Table 3). These recommendations may be used as a guide by WCC if it decides to amend the BOMP in the future. The aim of these additional recommendations is to streamline the requirements contained within the BOMP, and so to make it easier for WCC to manage compliance with these conditions.

Table 3 Other Recommendations for Improving BOMP Performance

| BOMP Reference | Audit Finding | Recommendation |
|--|-----------------------------------|--|
| General | Not Audited – Recommendation Only | It is recommended that the BOMP be revised to consolidate discussion of management actions into one section only. Currently the BOMP contains three sections with management actions (Section 3: Management Strategies, Section 4: Management Actions, and Section 5: Management Strategy). Management actions should be listed in one section and not included in other sections of the document. This would ensure internal consistency within the document and improve the ability of WCC to comply with requirements of the BOMP. |
| General | Not Audited – Recommendation Only | A flora species of significance was noted to be adjacent to the biodiversity offset area (and possibly within the offset area) and is not mentioned in the BOMP (despite being pictured on the front cover). Tiger Orchid (<i>Cymbidium canaliculatum</i>) is part of an Endangered Population (listed under the <i>Threatened Species Conservation Act 1999</i>) in the Hunter Valley catchment. Although the population and species is not listed in the Namoi catchment, the presence of the species close to the offset area should be mentioned in the report. |
| Sections 3.2.1, 3.2.2, 3.2.3 and 3.2.4 | Complies – Recommendation Made | It is recommended that this section (relating to management zones for weed control) be rewritten to consolidate and improve the clarity of the information. For example, Section 3.2 currently describes various management zones with specific weed control measures and targeted weed species for each zone. However in Table 11 of Section 5.1 the management actions and comments are the same for each zone. The audit revealed that some weeds are being targeted in the weed control program, but not others. The auditors were satisfied that the weed control program being implemented is satisfactorily targeting the highest risk weed species. It is therefore recommended that the wording of the BOMP be revised to require weed management control of noxious weeds or priority weeds of concern on the site using the most appropriate and cost-effective methods. |
| Section 3.2.7 | Complies – Recommendation Made | It is recommended that the BOMP be revised to clarify the requirement for future dam management, which is currently ambiguous. The requirement for filling in dams for the stated goal of macropod control may not be appropriate as there is no evidence that Eastern Grey Kangaroo numbers can be controlled by dam closure (Olsen and Low, 2006). The management action makes the assumption that macropods are overabundant and that removing dams will reduce macropod density. In order to justify these management actions, macropod grazing pressure data would need to be collected as part of a monitoring program in order to determine whether macropod densities are likely to be unsustainable in the grassy woodland community. Evidence of dam usage by animals should be monitored and analysed before actions to remove the dams are implemented. |

| BOMP Reference | Audit Finding | Recommendation |
|--|--|---|
| Section 4.13.1, Section 4.14, and Section 5.1 Table 11 | Section 4.13.1 Compliant Section 4.14 and Section 5.1, Table 11 Not Compliant as per Table 2 Recommendation Made for all | It was identified that rabbit and fox control programs were required; however no feral animal control programs have been implemented as yet. Rabbits are known to occur on the site (BOA Monitoring Report Spring 2010). This Section 4.13.1 requirement relating to rabbits also appears to conflict with the requirements in section 5, Table 11. There is a lack of definition regarding timing for control and the size of a rabbit population that requires control that allows compliance to be recorded on this requirement. It is recommended that targets be established within the BOMP for each management action. For example, in Section 4.13 the current wording states that feral animal control is required after an increase in feral animal numbers. However, feral animal numbers are not monitored as part of the annual flora and fauna monitoring. Therefore data are not collected to identify that this requirement has been triggered. A suggestion to improve measurability is to add targets and triggers which relate to specific management outcomes to the BOMP. During the site inspection, evidence of rabbits was noted but there was no clear evidence of environmental damage or degradation as a result of the presence of the rabbits. |
| Section 8.4 | Complies – Recommendation Made | Section 3.5.2 of the AEMR 2010-2011 contains a summary of the progress that was made under the BOMP during its first year of implementation. However, in future it would be best to make it clearer that this section contains the concluding remarks in relation to the BOMP's annual performance. |
| Section 9.1 | Not Audited – Recommendation Only | It is recommended that at the next appropriate opportunity, this section be reworded to state that the BOMP would be updated and submitted at a "minimum" of every three years for approval (rather than at a maximum of every three years as it currently states). This is required to align with the consent requirement (Schedule 4, Condition 41) which requires the BOMP to be amended as required after annual review to the satisfaction of the Director-General. |

Reference: Olsen, P. and Low, T. (2006) *Update on Current State of Scientific Knowledge on Kangaroos in the Environment, Including Ecological and Economic Impact and Effect of Culling*. Report prepared for the Kangaroo Management Advisory Panel, March 2006.

Table 4 BOMP Condition Not Able to be Audited

| Condition | Comment | Recommendation | |
|-----------|---|--|--|
| BOMP 4.10 | No control of grassy/herbaceous weeds will occur along creek line until >50% cover of native vegetation. This weed control would be selective to prevent creation of bare areas of soil. All woody weeds along creek line controlled by cut and paint method. Woody debris left in creek bed. | Due to time restraints of the audit team, creek line areas were unable to be visually inspected to confirm this procedure. | It is recommended that future audits confirm WCC's compliance with this condition. |

3.0 Conclusion

The audit team identified three non-compliances with the BOMP, and have made a range of recommendations for WCC to consider in review of the BOMP as part of the new Project Approval for WCC Life of Mine Project (10_0059). It should be noted that most of these non-compliances and recommendations for improvement stem from the overly strict wording of the BOMP which does not provide WCC staff with the flexibility to adapt to new conditions, improved technologies/techniques, changes in regulatory and legislative requirements and changes in best practise as these arise.

Overall the audit team found that the environmental performance of WCC in relation to the offset areas, and noted the good condition of the offset areas. The Environmental Officer appears to be well prepared to undertake more intensive rehabilitation of the site as required in the future.

Appendix A

Audit Compliance Table

Appendix A Audit Compliance Table

| Section | Requirement | Evidence | Audit Finding |
|------------------------------|--|--|---------------------------------|
| Management Strategies | | | |
| 3.2.5 | For Zone MZ5, between 2010-2012, the only works that take place are: removal of grazing cattle; regular visual monitoring to determine if active erosion is occurring. In 2012, if revegetation not occurring, consult geomorphologist. | The Annual Review Protocol for 2010 and 2011 states that cattle-grazing has been removed from the area, and quarterly visual monitoring is taking place. Requirements regarding geomorphology have not been triggered. | Complies Recommendation Made |
| 3.2.6 | Rubbish surrounding old rubbish dump in south-western corner of BOA will be collected/disposed via burial within the waste emplacement onsite. Bare soil then revegetated using sterile rye cover crop to prevent erosion. After 2010, any weeds regenerating in this area will be controlled using most applicable weed control technique. If no native species regeneration by 2012, will be revegetated using ground layer species in Table 10 BOMP with indicative density of 40,000 plants/ha or 2/m ² . | The AEMR 2010-11 states that rubbish has been removed and a cover crop sown. Native species regeneration in this location will need to be monitored. No natives have been established yet. Regeneration is being monitored. Needs to be reseeded. | Complies |
| 3.2.7 | Dams will either be filled in/contoured to surrounding landscape and sown with a sterile rye crop to prevent soil erosion. Or retained for use to water planted tubestock. After 2010, any regenerated weeds will be controlled using most applicable weed control technique. If no native species regenerate, they will be revegetated as per species/numbers in Table 10 BOMP. | <p>Dams have been retained. A visual inspection during the audit confirmed that they were not filled. Weed control is undertaken as per weed control across the offset area.</p> <p>It is recommended that the BOMP be revised to clarify the requirement for future dam management, which is currently ambiguous. The requirement for filling in dams for the stated goal of macropod control may not be appropriate as there is no evidence that Eastern Grey Kangaroo numbers can be controlled by dam closure (Olsen and Low, 2006). The management action makes the assumption that macropods are overabundant and that removing dams will reduce macropod density.</p> <p>In order to justify these management actions, macropod grazing pressure data would need to be collected as part of a monitoring program in order to determine whether macropod densities are likely to be unsustainable in the grassy woodland community. Evidence of dam usage by animals should be monitored and analysed before actions to remove the dams are implemented.</p> | Complies Recommendation Made |
| 4.12 | All rocky habitat in BOA will be retained in the BOA and won't be removed for any purpose. | The Biodiversity Offset Area (BOA) Annual Review (30 March 2011) indicates no change to this rocky habitat. | Complies |

| Section | Requirement | Evidence | Audit Finding |
|---------------------------|---|--|---------------|
| 5, Table 11 | Retention of all rocks on BOA will be demonstrated in photo monitoring points. | The BOA Monitoring Report Spring 2010 includes photographs of monitoring points along transects for comparison of site condition over time. | Complies |
| 5, Table 11 | Establish annual monitoring program following guidelines in section 7 BOMP during 2010-2012. | The first Werris Creek Coal Mine - Biodiversity Offset Area Annual Monitoring Report Spring 2010 (Eco Logical) was prepared. Next annual report is due in Spring 2011 and is outside of reporting period. | Complies |
| 5, Table 11 | Undertake monitoring program on annual basis during 2010-2012. | The first Werris Creek Coal Mine - Biodiversity Offset Area Annual Monitoring Report Spring 2010 (Eco Logical) was prepared. Next annual report is due in Spring 2011 and is outside of reporting period. | Complies |
| 5, Table 11 | Annual monitoring reports submitted to DP&I as per section 8 BOMP. | The first Werris Creek Coal Mine - Biodiversity Offset Area Annual Monitoring Report Spring 2010 (Eco Logical) was prepared. A letter dated 31 May 2011 was sighted which evidenced submission of the report to I&I and DP&I and other organisations/departments as required. The next annual report is due in Spring 2011 and is outside of reporting period. | Complies |
| Management Actions | | | |
| 4.2 | Minimise human disturbance by maintaining fences and signage (lock boundary gates and gates with neighbouring properties at all times). Ongoing dialogue with neighbours so aware of management objectives and consequences of mismanagement. | The AEMR 2010-11 states that approximately 10 km of maintenance and new fence construction has been undertaken. The BOA Annual Review (30 March 2011) states that signage has been installed. | Complies |
| 4.2 | Appoint this person to be responsible for coordinating implementation/reporting on all aspects of BOMP. | Andrew Wright has been appointed as Biodiversity Offset Property Manager. | Complies |
| 4.2 | Property Manager approval is required before access/activities on BOA takes place. | This authority has been delegated to Environmental Officer. | Complies |
| 4.3 | Where existing fences don't adequately restrict human/cattle access from BOA, new fences will be installed/repared as required by 2012. Signage will be installed on all gates of the BOA outside of the mine site on Eurunderee and Railway View properties. | The AEMR 2010-11 states that approximately 10km of new fencing and maintenance of existing fencing has been constructed/repared. The last of the old fences were removed in April 2011. The BOA Annual Review (30 March 2011) states that signage installed. | Complies |

| Section | Requirement | Evidence | Audit Finding |
|------------------------|--|---|--|
| 4.4 | Stock grazing cattle will be excluded from BOA until 2012 with stock proof fencing around boundary. All internal fences will be removed by end of 2012. Grazing not permitted in BOA. | The BOA Annual Review (30 March 2011) states that cattle were excluded in November 2012 and new fencing was completed in February 2011. The AEMR 2010-2011 includes a photo of the new BOA boundary fence (Figure 3.5). | Complies |
| Flora and Fauna | | | |
| 2.6 | Baseline flora/fauna inventories will be undertaken as part of implementing the BOMP. | The BOA Monitoring Report Spring 2010 fulfils these requirements. | Complies |
| 3.2 | Opportunities for direct seeding will be undertaken in circumstances allowing for rates/densities to be modified given changes in environmental conditions (e.g. natural regrowth/poor soil moisture). | This has not been undertaken yet and is not required to be undertaken until 14 December 2011. | Not Triggered |
| 3.2.1 | Zone MZ1 requires revegetation of the overstorey in the 1st year, with revegetation of understoreys being undertaken in subsequent years. | This has not been undertaken yet and is not required to be undertaken until 14 December 2011. | Not Triggered |
| 3.2.1 | Zone MZ1 requires extensive weed control of introduced grasses. Target Pigeon Grass with regular slashing and spot spraying & using grass-specific herbicide (e.g. fusillade). Target Patterson's Curse and St John's Wort with spot spraying and broadleaf herbicide (e.g. metsulfuron methyl). Target Horehound with non-specific herbicide (e.g. glyphosate) before it flowers. | <p>Overall site is subject to ongoing weed management control. This is outlined in the AEMR 2010-11. Visual inspection of the site by the ecologist confirmed that weed control appears to be satisfactory.</p> <p>It is recommended that this section (relating to management zones for weed control) be rewritten to consolidate and improve the clarity of the information. For example, Section 3.2 currently describes various management zones with specific weed control measures and targeted weed species for each zone. However in Table 11 of Section 5.1 the management actions and comments are the same for each zone.</p> <p>The audit revealed that some weeds are being targeted in the weed control program, but not others. The auditors were satisfied that the weed control program being implemented is satisfactorily targeting the highest risk weed species. It is therefore recommended that the wording of the BOMP be revised to require weed management control of noxious weeds or priority weeds of concern on the site using the most appropriate and cost-effective methods.</p> | <p>Complies</p> <p>Recommendation Made</p> |

| Section | Requirement | Evidence | Audit Finding |
|---------|---|--|--|
| 3.2.1 | In Zone MZ1 White Box Grassy Woodland will require revegetation using both understorey (planted at indicative density of 20,000 plants/ha or 2/m ²) and overstorey (planted at indicative density of 50 trees/ha or 1/200m ²) species in Table 7 BOMP. | Revegetation has not been undertaken yet. | Not Triggered |
| 3.2.2 | For weeds in Zone MZ2 target Pigeon Grass with regular slashing/spot spraying with grass-specific herbicides (e.g. Fusillade). Target Patterson's Curse and St John's Wort with regular spot spraying and broadleaf herbicide (e.g. metsulfuron methyl).Target Horehound with non-specific herbicide (e.g. glyphosate) before it flowers. | <p>The overall site is subject to an ongoing program of weed management control. This is outlined in the AEMR 2010-11. Visual inspection of the site by the ecologist during the audit confirmed that weed control of the site appears to be satisfactory.</p> <p>It is recommended that this section (relating to management zones for weed control) be rewritten to consolidate and improve the clarity of the information. For example, Section 3.2 currently describes various management zones with specific weed control measures and targeted weed species for each zone. However in Table 11 of Section 5.1 the management actions and comments are the same for each zone.</p> <p>The audit revealed that some weeds are being targeted in the weed control program, but not others. The auditors were satisfied that the weed control program being implemented is satisfactorily targeting the highest risk weed species. It is therefore recommended that the wording of the BOMP be revised to require weed management control of noxious weeds or priority weeds of concern on the site using the most appropriate and cost-effective methods.</p> | <p>Complies</p> <p>Recommendation Made</p> |
| 3.2.2 | In Zone 1 (MZ2) White box grassy woodland will require revegetation with indicated numbers/species as listed in Table 8 BOMP. | This revegetation has not been undertaken yet | Not Triggered |

| Section | Requirement | Evidence | Audit Finding |
|---------|--|--|--|
| 3.2.3 | For weeds in Zone MZ3. Target Patterson's Curse and St John's Wort with regular spot spraying and broadleaf herbicide (e.g. metsulfuron methyl). Target African Boxthorn with cut and paint techniques using non-specific herbicide (i.e. glyphosate). Target Prickly Pear by digging out and disposal by burying at the waste emplacement onsite. | <p>The overall site is subject to ongoing weed management control. This is outlined in the AEMR 2010-11. Visual inspection of the site by the ecologist during the audit confirmed that weed control appears to be satisfactory.</p> <p>It is recommended that this section (relating to management zones for weed control) be rewritten to consolidate and improve the clarity of the information. For example, Section 3.2 currently describes various management zones with specific weed control measures and targeted weed species for each zone. However in Table 11 of Section 5.1 the management actions and comments are the same for each zone.</p> <p>The audit revealed that some weeds are being targeted in the weed control program, but not others. The auditors were satisfied that the weed control program being implemented is satisfactorily targeting the highest risk weed species. It is therefore recommended that the wording of the BOMP be revised to require weed management control of noxious weeds or priority weeds of concern on the site using the most appropriate and cost-effective methods.</p> | <p>Complies</p> <p>Recommendation Made</p> |
| 3.2.3 | If no natural overstorey regeneration in Zone MZ3 by 2015, revegetation work will be required. Species/numbers as per Table 9 BOMP. | This requirement comes into effect in 2015. | Not Triggered |

| Section | Requirement | Evidence | Audit Finding |
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| 3.2.4 | For weeds in Zone MZ4. Target Patterson's Curse and St John's Wort with regular spot spraying and broadleaf herbicide (e.g. metsulfuron methyl). Target African Boxthorn with cut and paint techniques using non-specific herbicide (i.e. glyphosate). Target Prickly Pear by digging out and disposal by burying at the waste emplacement onsite. | <p>The overall site is subject to ongoing weed management control. This is outlined in the AEMR 2010-11. Visual inspection of the site by the ecologist during the audit confirmed that weed control appears to be satisfactory.</p> <p>It is recommended that this section (relating to management zones for weed control) be rewritten to consolidate and improve the clarity of the information. For example, Section 3.2 currently describes various management zones with specific weed control measures and targeted weed species for each zone. However in Table 11 of Section 5.1 the management actions and comments are the same for each zone.</p> <p>The audit revealed that some weeds are being targeted in the weed control program, but not others. The auditors were satisfied that the weed control program being implemented is satisfactorily targeting the highest risk weed species. It is therefore recommended that the wording of the BOMP be revised to require weed management control of noxious weeds or priority weeds of concern on the site using the most appropriate and cost-effective methods.</p> | Complies Recommendation Made |
| 3.3 | When revegetating, trees will be planted as either tubestock with tree guards and follow up watering as required, or direct seeding if appropriate. Understorey species planted as hiko cells and won't require tree guards or direct hand drilling. Planted early in autumn/spring depending on rainfall. Watered in when planted, follow up watering as required. | This revegetation has not been undertaken yet. | Not Triggered |
| 4.5 | Weed control techniques undertaken using minimal disturbance control techniques. | After consultation with Northern Inland Weeds Council, Grazon was recommended for use on St John's Wort. The outcome of using this product has been effective control of St John's Wort with minimal impact on surrounding native grasses. | Complies |
| 4.5.1 | Control strategy for Prickly Pear involves: (a) all plants/seedlings are dug out using shovel; (b) all plant material bagged/disposed of onsite (buried with overburden waste). | Prickly Pear has not been found to be a significant weed on the site. As Prickly Pear is therefore not a high priority weed, it is not currently being controlled. | Not Triggered |

| Section | Requirement | Evidence | Audit Finding |
|---------|---|---|---------------|
| 4.2.1 | Control strategy for African Boxthorn involves: a) control of African Boxthorn >0.5m high using cut and paint or drill and fill method during Nov/Dec when plants have good foliage cover; b) spot spraying of seedlings (plants <0.5m high) and regrowth using non-selective herbicide (i.e. glyphosate) when seedlings have good foliage cover; and c) all weed waste remains <i>in situ</i> where plant felled on property. | African Boxthorn has not been found to be a significant weed on the site. As African Boxthorn is therefore not a high priority weed, it is not currently being controlled. | Not Triggered |
| 4.2.1 | Control strategy for these weeds includes: a) spot spraying infestations and individual plants of Patterson's Curse and St John's Wort using selective herbicide (i.e. metsulfuron methyl) prior to plants flowering; b) spot spraying infestations/individual Horehound plants using non-selective herbicide (i.e. glyphosate) prior to plants flowering; c) small infestations of Horehound can be dug out and bagged immediately/disposed of appropriately onsite; and d) follow up work required for all species to control new growth/seedlings. | The overall site is subject to ongoing weed management control. This is outlined in the AEMR 2010-11. Visual inspection of the site by the ecologist during the audit confirmed that weed control appears to be satisfactory. | Complies |
| 4.7 | BOA regrowth is to be retained and similar regrowth is to be promoted across BOA. No clearing of native vegetation permitted in BOA. | None of this vegetation has been cleared. | Complies |
| 4.8 | If overstorey species (<i>Eucalyptus albens</i> or <i>Eucalyptus melliodora</i>) don't regenerate after 5 yrs, in fill planting required to establish overstorey. | This requirement comes into effect in 2015. | Not Triggered |
| 4.8 | Seed for revegetation collected from BOA and propagated for planting as tube stock. When tube stock planted, combination of fertiliser pellet, water retaining crystals and tree guards may be utilised and watered in. Tube stock planted in autumn/spring to around the higher summer rainfall. Tree species planted with density of 1 plant/200m ² or 50 trees/ha to achieve final density of 1 plant/400 m ² or 25 trees/ha, or canopy cover between 5-25%. Species and numbers for planting outlined in Section 3.2 of BOMP. | This revegetation has not been undertaken yet. | Not Triggered |
| 4.9 | All fallen timber retained onsite and not used for any other purpose than habitat (e.g. not for fencing/firewood). | The BOA Annual Review (30 March 2011) indicates no change to retention of fallen and standing dead trees. | Complies |

| Section | Requirement | Evidence | Audit Finding |
|----------------------------|---|--|---------------|
| 5, Table 11 | Retention of dead timber will be demonstrated in photo monitoring points. | The BOA Monitoring Report Spring 2010 includes photo monitoring points along transects for comparison of site condition over time. | Complies |
| 5, Table 11 | Table 11 appears to be inconsistent. Prescribes weeds for primary treatment (2010) and secondary treatment (2011-2012) for zones MZ1, MZ2, MZ3 and MZ4. The weeds prescribed in the Table are the same for each zone, whereas section 3.1 outlines different weed species at each zone. Table requires: a) primary treatment (during 2010) of African Boxthorn (cut and paint), spot spraying pasture grasses, Horehound, St John's Wort and Patterson's Curse, and dig out Prickly Pear and dispose; b) secondary treatment (during 2011-2012) of same species, spot spraying of all species except for Prickly Pear which is to be dug out and disposed of. | The overall site is subject to ongoing weed management control. This is outlined in the AEMR 2010-11. Visual inspection of the site by the ecologist during the audit confirmed that weed control appears to be satisfactory. | Complies |
| Bushfire Management | | | |
| 4.6.1 | No fire management for conservation purposes implemented in BOA until 2040 when overstorey trees sufficiently mature to withstand fire damage. | This requirement comes into effect in 2040. | Not Triggered |
| 4.6.1 | If wildfires occur on BOA, will be managed through appropriate response from Rural Fire Service to extinguish/contain fire/fire spread. | The AEMR 2010-11 states that no bushfires have occurred yet. | Not Triggered |
| 4.6.2 | Maintain suitable fire control unit onsite to address/control fire outbreaks in conjunction with Rural Fire Service. Includes: (a) fire equipment according to Coal Mines Health and Safety Regulation 2008 (note: this Regulation is actually dated 2006 and refers to emergency provisions which are required (i.e. plans and trained personnel) but not actual equipment). All firefighting equipment kept in operational condition and routinely inspected to ensure equipment is operational. | The Bushfire Management Plan 2007 outlines how fire equipment is located onsite. Water carts are the main fire fighting equipment. Hoses can be pressurised if required. The EO has not experienced a fires onsite during his term of employment. Dozers and graders are available to cut fire breaks if needed. Water is also stored onsite and can be accessed if necessary. | Complies |

| Section | Requirement | Evidence | Audit Finding |
|---|--|---|--------------------|
| 4.6.2 | All firefighting equipment kept in operational condition and routinely inspected to ensure equipment is operational. | The Bushfire Management Plan 2007 outlines how fire equipment is located on site. Water carts are the main fire fighting equipment. Hoses can be pressurised if required. The EO has not experienced fires onsite during his term of employment. Dozers and graders are available to cut fire breaks if needed. Water is also stored onsite and can be accessed if necessary. | Complies |
| 5, Table 11 | In MZ1, in fill planting of overstorey and understorey species are planted as required in the appropriate vegetation community by 14 December 2013. | This revegetation has not been undertaken yet. | Not Triggered |
| 5, Table 11 | In MZ2, in fill planting of understorey ground cover species as required in appropriate vegetation community by 2012. | This revegetation has not been undertaken yet. | Not Triggered |
| Erosion and Sediment Control | | | |
| 4.10 | Periodic monitoring of status of creek line. Remove cattle grazing from this paddock. | The BOA Annual Review (30 March 2011) states that cattle were excluded in November 2010. The annual Inspection from 2010 that states cattle have been excluded from grazing on the site. | Complies |
| 4.10 | No control of grassy/herbaceous weeds will occur along creek line until >50% cover of native vegetation. This weed control would be selective to prevent creation of bare areas of soil. All woody weeds along creek line controlled by cut and paint method. Woody debris left in creek bed. | The AEMR 2010-11 suggests the presence of weeds in this location. Due to time restraints of the audit team, creek line areas were unable to be visually inspected to confirm this procedure. It is recommended that future audits confirm WCC's compliance with this condition. | Not able to Verify |
| Feral Animals and Overabundant Native Herbivores | | | |
| 4.13 | If feral animals/introduced herbivore numbers increase, control programs will be implemented. | The BOA Annual Review (30 March 2011) identified that hares and foxes should be added to the control program for 2011-12. These are to be measured by annual inspection. No feral animal control programs have been implemented. | Not Triggered |
| 4.13.1 | If control program is implemented, will include: a) closing of non-required watering points within BOA; b) baiting Rabbits when they are observed; c) shooting feral Goats if they are observed on the property; and d) shooting of Eastern Grey Kangaroos and Euro's (following required permits from OAH). | No feral animal control programs have been implemented. | Not Triggered |

| Section | Requirement | Evidence | Audit Finding |
|---------|---|---|-------------------------------------|
| 4.13.1 | If shooting of feral Goats undertaken, must be by person with firearms licence, using high powered calibre rifle as humanely as possible (e.g. single shot to head). | No feral animal control programs have been implemented. | Not Triggered |
| 4.13.1 | If Rabbit populations observed, controlled through: (a) Pindone baits or 1080 poisoned oats; and/or (b) Shooting. | <p>Rabbits are known to occur on the site (BOA Monitoring Report Spring 2010). No feral animal control programs have been implemented. This requirement relating to rabbits also appears to conflict with the requirements in section 5, Table 11. There is a lack of definition regarding timing for control and the size of a rabbit population that requires control that allows compliance to be recorded on this requirement. It was identified that rabbit control programs were required; however no feral animal control programs have been implemented as yet. It is recommended that targets be established within the BOMP for each management action. For example, in Section 4.13 the current wording states that feral animal control is required after an increase in feral animal numbers. However, feral animal numbers are not monitored as part of the annual flora and fauna monitoring. Therefore data are not collected to identify that this requirement has been triggered.</p> <p>A suggestion to improve measurability is to add targets and triggers which relate to specific management outcomes to the BOMP.</p> <p>During the site inspection, evidence of rabbits was noted but there was no clear evidence of environmental damage or degradation as a result of the presence of rabbits.</p> | Complies Recommendation Made |
| 4.13.1 | Native herbivore control undertaken where significant numbers of animals in BOA preventing native flora regeneration. Control by spotlight shooting by person with firearms licence, using high-powered calibre rifle as humanely as possible (e.g. single shot to head). | This has not occurred yet. | Not Triggered |

| Section | Requirement | Evidence | Audit Finding |
|---------|--|--|---------------|
| 4.14 | Feral Cats will be controlled opportunistically when observed (i.e. Shooting by person with firearms licence using high powered calibre rifle as humanely as possible e.g. single shot to head). | <p>The Biodiversity Offset Area Monitoring Report Spring 2010 (Eco Logical 2010) recorded a single feral cat, but there was no record indicating if action was undertaken in response. In the absence of targets and action triggers, the presence of a single animal may not warrant a control response, though the BOMP wording indicates control by shooting will be implemented, the requirement is worthy of future clarification.</p> <p>It is recommended that targets be established within the BOMP for each management action. For example, in Section 4.13 the current wording states that feral animal control is required after an increase in feral animal numbers. However, feral animal numbers are not monitored as part of the annual flora and fauna monitoring. Therefore data are not collected to identify that this requirement has been triggered.</p> <p>A suggestion to improve measurability is to add targets and triggers which relate to specific management outcomes to the BOMP.</p> | Not Compliant |
| 4.14 | Fox control through baiting program across BOA twice/year (autumn and spring). Use 1080 poison baits. | <p>BOA Annual Review (30 March 2011) identified hares and foxes to be added to control program for 2011-12. The BOA Monitoring Report Spring 2010 also recommended fumigation of a stag tree currently acting as a fox den.</p> <p>It was identified that fox control programs were required; however no feral animal control programs have been implemented as yet. It is recommended that targets be established within the BOMP for each management action. For example, in Section 4.13 the current wording states that feral animal control is required after an increase in feral animal numbers. However, feral animal numbers are not monitored as part of the annual flora and fauna monitoring. Therefore data are not collected to identify that this requirement has been triggered.</p> <p>A suggestion to improve measurability is to add targets and triggers which relate to specific management outcomes to the BOMP.</p> | Not Compliant |

| Section | Requirement | Evidence | Audit Finding |
|-------------|---|---|---------------|
| 5, Table 11 | Rabbit control undertaken annually in summer. | <p>No feral animal control programs have been implemented.</p> <p>It was identified that rabbit control programs were required; however no feral animal control programs have been implemented as yet. It is recommended that targets be established within the BOMP for each management action. For example, in Section 4.13 the current wording states that feral animal control is required after an increase in feral animal numbers. However, feral animal numbers are not monitored as part of the annual flora and fauna monitoring. Therefore data are not collected to identify that this requirement has been triggered.</p> <p>A suggestion to improve measurability is to add targets and triggers which relate to specific management outcomes to the BOMP.</p> <p>During the site inspection, evidence of rabbits was noted but there was no clear evidence of environmental damage or degradation as a result of the presence of rabbits. The evidence sighted as a sample during the inspection indicated low numbers of rabbits.</p> | Not Compliant |
| 5, Table 11 | Feral Goat control documented with numbers of feral Goats killed. | <p>No feral animal control programs have been implemented. It is recommended that targets be established within the BOMP for each management action. For example, in Section 4.13 the current wording states that feral animal control is required after an increase in feral animal numbers. However, feral animal numbers are not monitored as part of the annual flora and fauna monitoring. Therefore data are not collected to identify that this requirement has been triggered.</p> <p>A suggestion to improve measurability is to add targets and triggers which relate to specific management outcomes to the BOMP.</p> | Not Triggered |

| Section | Requirement | Evidence | Audit Finding |
|---|---|--|---------------|
| Flora and Fauna Monitoring Program | | | |
| 7.1 | <p>Quarterly visual inspections undertaken by Environmental Officer as per Appendix 3 of BOMP, include:</p> <ul style="list-style-type: none"> a) Vegetation components (overstorey, understorey, and ground cover where applicable); b) presence of exotic weed and feral animal species; and c) presence of available microhabitat; and d) disturbance factors including fire and unauthorised access e.g. rubbish dumping. | <p>Quarterly inspections were performed in January 2011 and May 2011.</p> | Complies |
| 7.1 | <p>Black Gully Creek line erosion visually monitored on regular basis, particularly after high rainfall events. If slumping occurs, appropriate action taken, including seeking geomorphologist advice.</p> | <p>The BOA Annual Review (30 March 2011) suggests minimal erosion occurring onsite, but that Black Gully will continue to be monitored. Also recorded in AEMR 2010-11 that Black Gully erosions still active. Slumping not recorded.</p> | Complies |
| 7.2 | <p>Annually, composite soil samples collected by Environmental Officer from soils within the Rehabilitation, BOA and soil stockpile areas of and analysed by the Sydney Soil Environmental and Soil Laboratory. Looks at key chemical parameters (pH/electrical conductivity) to be measured for woodland ecological communities and compared against analogous sites towards achieving the completion criteria in Table 16 BOMP to determine changes in soil/vegetation condition over time.</p> | <p>The AEMR 2010-11 states that soil analysis was not completed during the 2010-11 reporting period. This will be completed early during the next reporting period.</p> | Not Triggered |
| 7.3 | <p>Vegetation monitoring will use CSIRO's Ecosystem Function Analysis (EFA) including:</p> <ul style="list-style-type: none"> a) Landscape Function Analysis; and b) Vegetation Assessment. | <p>The BOA Monitoring Report Spring 2010 describes the EFA method undertaken, which included LFA and vegetation assessment.</p> | Complies |
| 7.3 | <p>Each vegetation monitoring site will be permanently marked by a star picket at the start and end of a 50m transect established perpendicular to the contour.</p> | <p>The BOA Monitoring Report Spring 2010 - figure 2 shows these locations.</p> | Complies |

| Section | Requirement | Evidence | Audit Finding |
|---------|--|--|-----------------|
| 7.3.1 | <p>EFA will be undertaken within the BOA (including the mine rehabilitation component) by qualified ecologist. As a minimum:</p> <ul style="list-style-type: none"> i) compare monitoring results against rehabilitation and biodiversity offset area objectives; ii) Identify issues, trends and actions for areas requiring improvement; iii) Link implementation records to determine causes and explain results; iv) Assess effectiveness of environmental controls implemented; v) Where necessary, identify modifications required for the monitoring program, practices or areas requiring research; vi) Compare flora species present against revegetation species used and analogue (benchmark) sites; vii) Assess vegetation health; viii) Assess vegetation structure (upper, mid and lower storey); and ix) Where applicable, assess native fauna species diversity and the effectiveness of habitat creation for target fauna species. | <p>The BOA Monitoring Report Spring 2010 describes the EFA method undertaken, which included LFA and vegetation assessment.</p> | <p>Complies</p> |
| 7.3.1 | <p>EFA methodology consists of LFA tool and vegetation assessment.</p> | <p>The BOA Monitoring Report Spring 2010 describes the EFA method undertaken, which included LFA and vegetation assessment.</p> | <p>Complies</p> |
| 7.3.1 | <p>For each transect monitoring, additional flora monitoring will be undertaken to enable comparative measurement of vegetation status against completion criteria in Table 16 BOMP. Using starting point of each EFA transect, components of Biometric Assessment Methodology will measure status of vegetation condition for each replicate against the criteria in Table 16 BOMP. Additional monitoring using Biometric Assessment Methodology are:</p> <ul style="list-style-type: none"> a) native plant species number and cover per 400m² (20m x 20m quadrat); b) overstorey cover range measures at 10 points along a 50m transect; c) mid storey cover range at 10 points along a 50m transect; and d) bare ground and litter measured at 50 points along a 50m transect. | <p>BOA Monitoring Report Spring 2010 describes the method undertaken, including additional monitoring, biometric assessment methodology etc.</p> | <p>Complies</p> |

| Section | Requirement | Evidence | Audit Finding |
|---------|---|---|---------------|
| 7.3.1 | Where necessary, rehabilitation and biodiversity offset area restoration practices will be amended, or as more data becomes available regarding analogous sites or the targeted ecological community benchmarks, completion criteria in Table 16 BOMP can be updated. | This data is not available yet. | Not Triggered |
| 7.3.1 | Ecologist will provide WCC with indexed results to be incorporated into a Vegetation Monitoring Database. The Vegetation Monitoring Database will also include flora and fauna species register of potential and recorded species at WCC. | The BOA Monitoring Report Spring 2010 states that vegetation monitoring database has been developed. | Complies |
| 7.3.1 | Monitoring results will identify particular vegetation communities that may not be tracking towards closure criteria in Table 16 BOMP. This allows Environmental Officer to prioritise specific management actions to address deficiencies and/or amend procedures. | It is too early in the rehabilitation program for sufficient data to be available regarding this matter. | Not Triggered |
| 7.4 | Fauna monitoring undertaken by qualified ecologist. Surveys specifically target threatened species previously recorded or with potential to occur within the area. Targeted fauna monitoring directed by previous fauna survey work. | The BOA Monitoring Report Spring 2010 fulfils these requirements. | Complies |
| 7.4 | 2010 monitoring covers all species groups to establish baseline datasets for ongoing comparison. | The BOA Monitoring Report Spring 2010 states that its monitoring covered all species groups to provide baseline data. | Complies |
| 7.4 | In 2011 and onwards, fauna monitoring programs will focus on woodland birds and microbats. | The BOA Monitoring Report Spring 2010 states that ongoing monitoring will focus on woodland birds and microbats. | Complies |
| 7.4 | Post 2020, fauna monitoring program will be expanded to cover other species groups including ground mammals. | This requirement comes into effect in 2020. | Not Triggered |
| 7.4 | WCC will maintain a fauna species register based on the likelihood that a species would be present and documenting from previous monitoring programs actual species recorded onsite. | The BOA Monitoring Report Spring 2010 states that a fauna species register has been developed. | Complies |
| 7.4 | Fauna monitoring sites will be selected at most relevant vegetation monitoring sites for consistency other than in the Cypress Pine Community and the Class 3 White Box Grassy Woodland. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |

| Section | Requirement | Evidence | Audit Finding |
|--------------|--|---|---------------|
| 7.4 Table 15 | Elliot traps placed in straight lines on ground for three consecutive nights. Each site (note: it is not clear what constitutes a 'site' under this Table 15) requires 10 medium (Elliot A) traps and three large cage traps. This is done in 2010 for baseline data, then again in 2020, and subsequently every three years after 2020. This is done in spring. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |
| 7.4 Table 15 | Hair funnels placed at each site for minimum of four nights. Set in habitat trees if present. Target small/medium sized mammals. Set 10 funnels per site in 2010 for baseline data. This is then done in 2020 and subsequently every three years after 2020. This is done in spring. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |
| 7.4 Table 15 | Pedestrian spotlighting surveys for two nights at each site. These target nocturnal mammals, birds, reptiles and amphibians. Involves 1 hr of spotlighting covering a transect of 1 km and is repeated over two nights. Takes place annually during spring. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |
| 7.4 Table 15 | Call playback for two nights at each site in conjunction with spotlighting. Targets nocturnal birds. Involves 5 mins broadcasting plus 10 minutes listening. Takes place annually during spring. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |
| 7.4 Table 15 | Inspect nest boxes in rehabilitation areas upon installation to check for use and if possible identify what species are using them. Subsequently inspected annually in early spring. | None installed - BOA Monitoring Report Spring 2010 recommends that nest boxes be installed. | Not Triggered |
| 7.4 Table 15 | Anabat recordings are taken to identify microbat species occurring onsite. Undertaken for two nights at each site with one detector set for minimum of 4 hrs. Undertaken annually in spring. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |
| 7.4 Table 15 | Bird surveys, timed, within fixed areas for diurnal birds, observing and listening. Undertaken for 20 minutes/ha count at morning and dusk over two days. Undertaken annually during spring. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |
| 7.4 Table 15 | Herpetological surveys done with timed, fixed areas, direct searches for reptiles, scanning surfaces, rolling logs/rocks, raking leaf litter. 1/5 hr of searching of microhabitat on two separate days. Undertaken annually in spring. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |
| 7.4 Table 15 | Dam inspections for amphibians. Dams/waterways inspected for frogs, once during day and once during night. Undertaken annually in summer. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |

| Section | Requirement | Evidence | Audit Finding |
|---|---|--|---------------|
| 7.4 Table 15 | Collection of scats. Collect scats and send to laboratory for analysis of predator/prey species. Undertaken opportunistically whilst other fauna monitoring activities are being carried out throughout the year. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |
| 7.4 | Results of fauna monitoring will be analysed and compared to previous survey results to determine general population trends. If negative trends are identified, indicating a decline of a threatened species, appropriate amelioration measures will be recommended. | BOA Monitoring Report Spring 2010 - this year provides first year of data as baseline for comparison. | Complies |
| 7.4 | If new populations of threatened species or additional threatened species are identified, records will be assessed by a qualified ecologist to advise on any changes required to management of BOA. | BOA Monitoring Report Spring 2010 states that no new threatened flora or fauna species were recorded. | Complies |
| 7.4 | If further threatened species or significant records of existing threatened species are collected, the significance of such records will be reviewed, as will the likely impact of existing or proposed management activities, and any options for minimising impacts on these species. | BOA Monitoring Report Spring 2010 states that no new threatened flora or fauna species were recorded. | Complies |
| Annual BOA and Rehabilitation Report | | | |
| 8 | Annual BOA Report will be incorporated into AEMR (reporting period 1 April-31 March). Will consist of 2 parts: (a) summary of implementation of management actions within the BOMP including inspection results and review findings; and (b) results of the flora/fauna monitoring program. | The BOMP was incorporated into the AEMR 2010-11. This included details regarding the implementation of actions and flora/fauna monitoring. | Complies |
| 8.1 | Annual BOMP Report provides summary of all actions implemented during previous year, documented from Property Manager's Monthly/Quarterly Inspections. Any significant events occurring during the year and any recommended changes to the management actions / duration / intensity / relative priority identified through the Annual Review by the Property Manager are to be included. | The BOA Annual Review (30 March 2011) provides actions undertaken and recommendations. | Complies |

| Section | Requirement | Evidence | Audit Finding |
|---------|---|--|---------------|
| 8.2 | Annual vegetation monitoring reporting is to include written summary of methodology and current year's findings for each vegetation plot, including average results of each variable recorded. Plot monitoring records and field data sheets will be included in the appendix. A flora species list with corresponding plot numbers where species were recorded is to be included in an appendix. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |
| 8.2 | Discussion section included. Compares results from current monitoring year with previous years either through actual annual records or mean value where several previous years are being compared. | The BOA Monitoring Report Spring 2010 includes a discussion section. No comparison was included in that report as it consists of the first full year of data. Comparisons can be made in future years with this data as a baseline for comparison. A comparison with earlier data therefore cannot be triggered. | Complies |
| 8.2 | Annual Report is to include statistical graphs illustrating changes in diversity and cover/abundance of each attribute recorded within each condition zone. | The BOA Monitoring Report Spring 2010 includes graphs, but does not record any changes yet as this year will provide baseline data for future comparison. A comparison with earlier data therefore cannot be triggered. | Complies |
| 8.3 | Annual Report includes methods/results of fauna monitoring and significant findings, including any new records of threatened species. Fauna species list with corresponding transect numbers/survey site numbers where species occurred is included as an appendix. | The BOA Monitoring Report Spring 2010 confirms this procedure was carried out. | Complies |
| 8.3 | A discussion section included, comparing species diversity results, as absolute numbers and grouped into various guilds representing diversity of habitat types present from the current monitoring year with previous years. | The BOA Monitoring Report Spring 2010 includes a discussion section. No comparison is included in that report as it provides the first year of data for future comparison. A comparison with earlier data therefore cannot be triggered. | Complies |
| 8.3 | Annual Report includes statistical graphs/tables illustrating changes in nocturnal birds, bats, diurnal birds, and reptiles/abundance over time. | The BOA Monitoring Report Spring 2010 includes a discussion section. No comparison is included in that report as it provides the first year of data for future comparison. A comparison with earlier data therefore cannot be triggered. | Complies |
| 8.3 | If monitoring program has been expanded during the last reporting period discussion includes other species groups such as ground mammals, arboreal mammals, and amphibian abundance and diversity within each monitoring period. | As this was the first year of the monitoring program, it was not required to be expanded. | Not Triggered |

| Section | Requirement | Evidence | Audit Finding |
|---------|--|--|-------------------------------------|
| 8.3 | Bat diversity will be measured in: a) Megachiropteran (i.e. Flying-foxes); b) Microchiropteran (micro bats) that forage in the sub canopy; and c) Microchiropteran that are canopy or above canopy forages. Statistical graphs or tables illustrating changes in bat diversity in each of these groups are to be developed for each monitoring plot. | The BOA Monitoring Report Spring 2010 includes bat diversity as described. Graphs and tables are included, but no comparisons have been undertaken as this year's data provides baseline data for future comparison. A comparison with earlier data therefore cannot be triggered. | Complies |
| 8.3 | Bird diversity is to be measured in three different groups: a) Raptors/birds of prey including nocturnal and diurnal; b) Ground and Shrub Guild, including woodland birds such as finches, wrens and warblers; c) Generalists such as parrots and honeyeaters. Statistical graphs or tables that illustrate changes in avian diversity in each of these three groups are to be developed for each zone. | The BOA Monitoring Report Spring 2010 includes bird diversity as described. Graphs and tables are included but no comparisons undertaken yet this year provide baseline data for future comparison. A comparison with earlier data therefore cannot be triggered. | Complies |
| 8.4 | Prepare concluding section within the AEMR highlighting/describing significant findings, either positive or negative. Changes to management will be recommended for following year. | Section 3.5.2 of the AEMR 2010-2011 contains a summary of the progress that was made under the BOMP during its first year of implementation. However, in future it would be best to make it clearer that this section contains the concluding remarks in relation to the BOMP's annual performance. | Complies Recommendation Made |
| 9 | Review Protocol in Appendix 4 BOMP completed by Property Manager annually in March. Findings reported to management and in the AEMR, and if required, BOMP will be updated for DP&I approval. | The BOA Annual Review (30 March 2011) deals with this. Findings were reported in the AEMR 2010-11. | Complies |
| 9 | BOMP will be revised if: a) deficiencies identified; b) outcomes from the Annual Review; c) recommendations from the Annual Review; d) changing environmental conditions; e) improvements in knowledge or new technology becoming available; f) changes in legislation or approvals; and g) changes in activities/operations. | The AEMR 2010-11 recommended that the BOMP be amended to include existing hayshed and soil stockpiles within BOA and to modify the monitoring replicates and LFA frequencies. These recommendations have yet to be implemented, and are due to be included in the BOMP by March 2012. | Not Triggered |

| Section | Requirement | Evidence | Audit Finding |
|---------|--|--|---|
| 9.1 | As a minimum, BOMP will be updated with findings of annual review or independent audits and submitted to DP&I at a maximum of every three years for approval. | <p>The findings of the annual review are due for inclusion in the BOMP by 14 December 2011.</p> <p>It is recommended that at the next appropriate opportunity, this section be reworded to state that the BOMP would be updated and submitted at a “minimum” of every three years for approval (rather than at a maximum of every three years as it currently states). This is required to align with the consent requirements (Schedule 4, Condition 41) which requires the BOMP to be amended as required after annual review to the satisfaction of the Director-General.</p> | <p>Not Triggered</p> <p>Recommendation Made</p> |
| 10 | AEMR will include annual assessment of completion criteria in Table 16 BOMP. If standards are not met, remedial action will be implemented as soon as practical by the Property Manager. | The AEMR states that all sites do not yet meet completion criteria, as it is the first year of restoration program. | Complies |

Appendix B

Audit Agenda

Appendix B Audit Agenda

Agenda of Meeting

Werris Creek IEA

| | | | |
|--------------|---|------|---------------------------------|
| Subject | Agenda for Independent environmental and Offsets Audits | Page | 1 |
| Venue | Werris Creek Mine | Time | |
| Participants | Andrew Wright, Peter Horn, Rochelle Lawson and Jessica Miller Interviewees will Michael Post (Project Manager), Robert George (Mine Superintendent), Peter Easey (Coal Processing Manager), Scott Tuckey (Workshop Supervisor), Des George (Manager Mining Engineering), Danny Young (WHC Group Environmental Manager) | | |
| File/Ref No. | | Date | 1st, 2nd and 3rd of August 2011 |
| Distribution | As above | | |

AECOM PPE

Staff will wear full length pants and shirts, safety glasses, steel capped boots and will have safety hats.

Day 1 – Monday 1st August 2011

Location: TBA

Attendees:

Peter Horn – AECOM

Rochelle Lawson – AECOM

Jessica Miller - AECOM

Andrew Wright –Environment Officer – Werris Creek Coal

| Interviewee | Time Start | Duration |
|--|------------|-----------|
| Administration Andrew Wright | 10.00 | 30 mins |
| Overview of Conditions and Documentation AECOM | 10:30 | 45 mins |
| Overview of Werris Creek Operations Andrew Wright | 11:15am | 15 mins |
| Review Structure of offset areas and discuss offset strategy Andrew Wright | 11.30am | 30mins |
| Lunch | 12:00noon | 30 min |
| Werris Creek Offset Site Tour Andrew Wright PH RL and JM. | 12:30pm | 2.0 hours |
| Offset Conditions and Documentation AECOM and Andrew Wright | 14:30pm | 2.5 hours |

| | | |
|---------------------|---------|--|
| Finish day 1 | 17.00pm | |
|---------------------|---------|--|

Day 2 – Tuesday 2nd August 2011

Location: TBA

Attendees:

Peter Horn – AECOM

Rochelle Lawson – AECOM

Jessica Miller – AECOM

Andrew Wright –Environment Officer – Werris Creek Coal

| Interviewee | Time Start | Duration |
|--|-------------------|-----------------|
| Administration | 8:30am | 30 mins |
| Werris Creek Mine Tour Andrew Wright | 9:00am | 2 hours |
| Consent Conditions, EPL, other approvals Andrew Wright <ul style="list-style-type: none"> • Traffic & transport • Visual impact • Flora & Fauna | 11.00am | 1 hour |
| Lunch | 12:00 noon | 30 min |
| Environmental Monitoring Andrew Wright | 12:30pm | 1 hour |
| Mine Planning, Blasting and Water Management Project Manager, Mine Superintendent, Drill & Blast Supervisor, Orica Representatives | 13:30pm | 1 hour |
| Environmental Management, Audits and Reporting Andrew Wright | 14.30pm | 1 hour |
| Fill, extra questions re Offsets or other information to date Andrew Wright | 15.30pm | 1 hour float |
| Finish Day 2 | 16.30pm | |

Day 3 – Wednesday 3rd August 2011

Location: TBA

Attendees:

Peter Horn – AECOM

Rochelle Lawson – AECOM

Jessica Miller - AECOM

Andrew Wright –Environment Officer – Werris Creek Coal

| Interviewee | Time Start | Duration |
|---|------------|-----------|
| Administration | 8:30am | 30 mins |
| Consent Conditions, EPL, other approvals Andrew Wright <ul style="list-style-type: none"> • Air Quality • Noise • Aboriginal Cultural Heritage • Land & Property • Bushfire • Waste • Training | 9:00am | 2.0 hours |
| Workshop Workshop Supervisor | 11.00am | 15 mins |
| Coal Processing & Rail Load-out Facility Coal Processing Manager | 11.15am | 15 mins |
| Rehabilitation Andrew Wright | 11.30am | 30 mins |
| Lunch | 12:00 | 30 min |
| Rehabilitation Andrew Wright | 12:30pm | 1 hour |
| Float time for final tidy up AECOM | 13:30pm | 1 hour |
| Close out Meeting – Potential Non-Compliances and Recommendations AECOM | 14:30pm | 45 mins |
| Finish Day 3 | 15.15pm | |