



# Centennial Coal

Angus Place



## *Longwalls 900W and 910 Heritage Management Plan*

### Angus Place Colliery

November 2013



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## Abbreviations

<b>AEMR</b>	Annual Environmental Management Report (now known as Annual Review)
<b>AHIMS</b>	Aboriginal Heritage Information Management System
<b>CCL</b>	Consolidated Coal Lease
<b>DgS</b>	Ditton Geotechnical Services
<b>DP&amp;I</b>	NSW Department of Planning and Infrastructure
<b>DTIRIS</b>	NSW Department of Trade and Investment, Regional Infrastructure and Services – Division of Resources and Energy
<b>EA</b>	Environmental Assessment
<b>GNSS</b>	Global Navigation Satellite Systems
<b>LGA</b>	Local Government Area
<b>ML</b>	Mining Lease
<b>Mtpa</b>	Million tonnes per annum
<b>OEH</b>	NSW Office of Environment and Heritage
<b>PAD</b>	Potential Archaeological Deposit
<b>ROM</b>	Run of mine
<b>SMP</b>	Subsidence Management Plan
<b>TARP</b>	Trigger Action Response Plan

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## 1. INTRODUCTION

Angus Place Colliery (Angus Place) is an underground coal mining operation located approximately five kilometres north of the village of Lidsdale, eight kilometres northeast of the township of Wallerawang and approximately 15 kilometres northwest of the city of Lithgow in the Blue Mountains region of NSW. It is bordered by Springvale Colliery to the south, Ivanhoe Colliery to the northwest and Wolgan Valley and Newnes Plateau to the north and east, respectively. The regional locality of Angus Place is shown on **Figure 1**.

Angus Place has been in operation since 1979 and is operated by Centennial Angus Place Pty Ltd, a joint venture company owned in equal share between the Centennial Coal Company Ltd and SK Kores of Korea. Secondary extraction of coal is currently undertaken at Angus Place utilising the longwall method of mining within Mining Lease (ML) 1424 and Consolidated Coal Lease (CCL) 704.

Project Approval (PA 06\_0021) was granted by the then NSW Department of Planning (now Department of Planning and Infrastructure (DP&I)) on 13 September 2006. This approval allowed for an extension of underground longwall mining operations (Longwalls 920 – 980) and an increase in run of mine (ROM) coal production to 3.5 million tonnes per annum (Mtpa). PA 06\_0021 has been modified on two occasions. Modification 1 (Mod 1) was approved on 29 August 2011 and allowed for the development and extraction of two additional longwall panels (Longwall 900W and 910) as well as an increase in production limit to 4 Mtpa. Modification 2 (Mod 2) was approved in April 2013 and allowed for the development of underground roadways and the construction and operation of a Ventilation Facility (APC-VS2) and supporting infrastructure.

This *Longwalls 900W and 910 Heritage Management Plan* (Heritage Management Plan) has been developed in accordance with Schedule 3, Condition 3C(h) of PA 06\_0021 (as modified) and the *Draft Guidelines for the Preparation of Extraction Plans* (DP&I, 2012). Regulatory requirements applicable to the development of this Plan are outlined in **Section 4**.

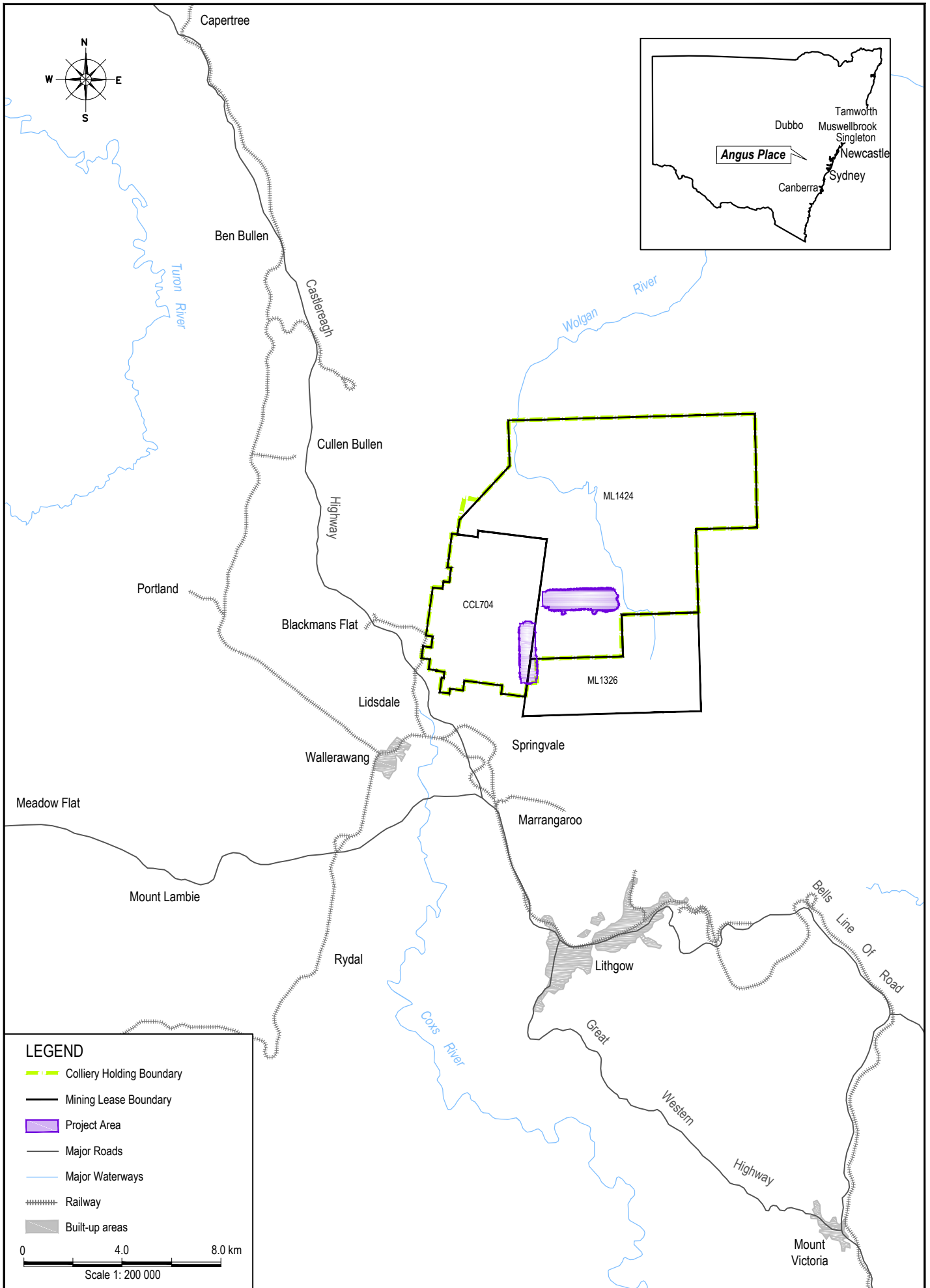
## 2. PURPOSE

The purpose of this Heritage Management Plan is to outline the monitoring and management measures to be implemented to manage potential environmental consequences specifically from the secondary extraction of Angus Place Longwalls 900W and 910 upon Aboriginal heritage sites or values. Required actions and responsibilities are defined to ensure detection of any potential damage from mining induced subsidence.

## 3. SCOPE

This Heritage Management Plan applies to any items of Aboriginal heritage located within the Longwall 900W and 910 area (herein referred to as the Project Area). In accordance with the requirements of the *Guidelines for Applications for Subsidence Management Approvals* (2003), published by the NSW Department of Mineral Resources (now the NSW Department of Trade and Investment, Regional Infrastructure and Services – Division of Resources and Energy (DTIRIS)), this Project Area has been calculated by combining the areas bound by the following limits (see **Figure 2**):

- A 26.5° angle of draw line from the limit of proposed extraction; and
- The predicted limit of vertical subsidence, taken as the 20mm subsidence contour resulting from the extraction of the Longwalls 900W and 910.



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Longwalls 900W and 910 Heritage Management Plan  
Regional Locality

**FIGURE 1**





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## 4. REGULATORY REQUIREMENTS

### 4.1. Project Approval and Statement of Commitments

Project Approval PA 06\_0021 (as modified) includes a number of conditions relevant to the preparation and implementation of a Heritage Management Plan for the Project Area. Conditions relating specifically to the preparation of this Plan have been summarised in **Table 1**. This table also outlines the sections where these conditions have been addressed within this document.

**Table 1. Relevant Project Approval Conditions**

Condition	Condition Requirement	Section Addressed	
Schedule 3, Condition 3	The Proponent shall ensure that underground mining does not cause any exceedances of the performance measures in Table 1A, to the satisfaction of the Director General. <i>Table 1A: Subsidence Impact Performance Measures</i>	Section 7	
	<i>Aboriginal heritage features</i>		
	Sites that may be determined to hold "special significance" as a result of studies required for extraction plans.		Negligible subsidence impacts or environmental consequences.
	Other Aboriginal heritage sites	Less than 10% of aboriginal heritage sites within any longwall mining domain are affected by subsidence impacts.	
Schedule 3, Condition 3C	The Proponent shall prepare and implement Extraction Plan/s for the second workings in Longwalls 910 and 900W to the satisfaction of the Director-General. Each Extraction Plan must: (h) include: <ul style="list-style-type: none"> <li>a Heritage Management Plan, which has been prepared in consultation with OEH and relevant stakeholders for Aboriginal heritage, to manage the potential environmental consequences of the proposed second workings on Aboriginal heritage sites or values.</li> </ul>	This document	

**Table 2** provides the details of the relevant commitments made by Angus Place in the Mod 1 Statement of Commitments, included as Appendix 4 of PA 06\_0021 (as modified). The table also details where the commitments have been addressed within this management plan.

**Table 2. Relevant Statement of Commitments**

Condition	Commitment	Section Addressed
2.1	Within 6 months of obtaining approval, the Environmental Management Plan will be revised to require ongoing liaison with Aboriginal Community as per the DECCW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 during the proposed works, should any matters relating to Aboriginal heritage occur.	Section 10

Please note that the Mod 2 Statement of Commitments relevant to cultural heritage, provided as Appendix 6 to PA 06\_0021 (as modified) relate specifically to the Ventilation Facility Project, therefore these commitments have not been addressed by this Heritage Management Plan for Longwalls 900W and 910.

## 4.2. Mining Leases

The Project Area is associated with three mining tenements; ML 1326, ML 1424 and CCL 704. There are no relevant conditions within these leases relating specifically to the preparation of this Heritage Management Plan.

## 4.3. Longwalls 930 – 980 SMP Approval

In accordance with the requirements of relevant mining tenements, Angus Place received Subsidence Management Plan (SMP) Approval from the then NSW Department of Primary Industries (now DTIRIS) in December 2005 allowing first workings and secondary extraction within Longwalls 930 - 980. This SMP Approval includes one condition that is relevant to the management of Abotiginal heritae at Angus Place. This condition and where it has been addressed within this Heritage Management Plan is listed in **Table 3**.

While the SMP Approval for Longwalls 930 – 980 does not relate to the subject Longwalls 900W and 910, **Table 3** has been included to demonstrate that the typical conditions associated with an SMP Approval, specifically those already applicable at Angus Place, have been addressed within this document. This section will be reviwed and revised (if necessary) following receipt of SMP Approval for the Project Area.

**Table 3. Relevant SMP Approval Conditions**

Condition	Condition Requirement	Section Addressed
17	<b>Archaeological and Heritage Sites</b> – The Leaseholder shall ensure full compliance with any statutory requirements of the Department of Environment and Conservation and the Heritage Office, with regard to any archaeological and heritage sites that may be affected by subsidence arising from longwall mining or during the remediation of impacted areas.	This document

## 5. RELEVANT FEATURE(S) AND PREDICTED IMPACTS

### 5.1. Relevant Feature(s)

A Rock Shelter with Potential Archaeological Deposit (PAD) has been identified to the west of Longwall 910, noting this is situated outside the Project Area (see **Figure 2**). The Rock Shelter with PAD (45-12692) is located approximately 465 m to the west of Longwall 910 and 280 m from the Project Area. All other sites that have been previously registered on the Aboriginal Heritage Information Management System (AHIMS) database are also located outside the Project Area.

No items of European historical significance or potential for archaeological deposit were identified within the Project Area (RPS, 2010).

### 5.2. Predicted Impacts

No subsidence is predicted in the area of the Rock Shelter with PAD. DgS (2010) stated that *“it is very unlikely that cracking of cliff lines associated with the site would occur due to mine subsidence, as all known cliff lines fall outside the predicted area of subsidence”*.

All other sites previously registered on the AHIMS database are located well outside the Project Area and will therefore not be liable to potential subsidence impacts resulting from the development and secondary extraction of Longwalls 900W and 910 (RPS, 2010).

### 5.2.1. Subsidence Assessment Review

As a component of the *Longwalls 900W and 910 Integrated SMP/Extraction Plan*, DgS completed a review of the *Subsidence Prediction and Impact Assessment* (DgS, 2010). This review was completed to satisfy the requirement of Schedule 3, Condition 3C(e) of PA 06\_0021 (as modified), which requires the proponent to:

*“Provide revised predictions of the potential subsidence effects, subsidence impacts and environmental consequences of the proposed second workings, incorporating any relevant information obtained since this approval.”*

The report titled *Subsidence Assessment Review for the Longwalls 900W and 910 Integrated SMP/Extraction Plan, Centennial Angus Place Colliery* (DgS, 2013), incorporated relevant information obtained by Angus Place since the approval of PA 06\_0021 (Mod 1) in August 2011, including subsidence monitoring data and observed subsidence effects following the completion of secondary extraction in Longwalls 960 and 970, and a change to the mining height within Longwalls 900W and 910.

The *Subsidence Prediction and Impact Assessment* (DgS, 2010) assessed potential subsidence effects based upon a mining height of 3.25 m. Angus Place will now mine Longwalls 900W and 910 at an extraction height up to 3.425 m. This change has been assessed by DgS (2013) which concluded that *“the observed and predicted subsidence impacts and environmental consequences for LWs 960 and 970 have also been consistent with predictions for LWs 900W and 910, and as such, the predicted ‘negligible’ environmental consequences for LWs 900W and 910 are not expected to change from the previous assessment due to the 5% increase in mining height.”*

*“It is therefore considered that the impact management strategies for the environment and site developments (e.g. access roads and Endeavour Energy 66kV power line) that were outlined in DgS, 2010 are still valid and do not require amendment”* (DgS, 2013). The management measures as outlined in **Section 8** are consistent with the impact management strategies outlined in the *Subsidence Prediction and Impact Assessment* (DgS, 2010).

## 6. IDENTIFIED RISKS

On 25<sup>th</sup> July 2012 an SMP Risk Assessment was conducted to identify subsidence-related hazards that may affect the environment and community as a result of the extraction of Angus Place Longwalls 900W and 910. This risk assessment was completed in accordance with the requirements of the *Guideline for Applications for Subsidence Management Approvals* (Department of Mineral Resources, 2003) and the *Centennial Coal Risk Management Standard - Management Standard 004* (Centennial Coal, 2008).

Risks were identified and assessed through the review of known surface and sub-surface features within the Project Area. A risk ranking (low, moderate, significant, high or extreme) was assigned to each risk/hazard. There was only one potential risk to Aboriginal heritage identified during the SMP Risk Assessment which was related to potential subsidence-related impacts to the Rock Shelter with PAD, this was ranked as being a moderate risk. Although there is a very low likelihood of subsidence related impacts to the Aboriginal heritage site, the moderate risk ranking was assigned due to the potential consequence (expected to be a serious breach of regulation, resulting in prosecution/fine) that would occur as a result of subsidence related impacts to the Rock Shelter with PAD. This risk and the recommended controls have been presented in **Table 4**.

**Table 4. Risk to Aboriginal Heritage**

Risk	Current Controls	Risk Ranking	Recommended Controls
<p>There is a risk to Angus Place from</p> <p>::: Subsidence related impacts to rock shelter :::</p> <p>Caused by: Subsidence.</p> <p>Resulting in: Legal breach.</p>	Consultation with relevant stakeholders.	Moderate	Aboriginal/Cultural Heritage Management Plan to be developed.
	Mining geometry design to minimise potential surface impact.		
	Cultural Heritage Assessment completed for the Part 3A Modification indicates it is unlikely to be impacted.		Propose subsidence monitoring line adjacent to rock shelter.
	Rock shelter is approximately 300m away from zero subsidence (20mm) boundary.		

To further mitigate subsidence-related risks to Aboriginal heritage, Angus Place have implemented the ‘recommended controls’ as outlined in **Table 4**. The recommendation to develop an Aboriginal/Cultural Heritage Management Plan has been addressed by the preparation of this Heritage Management Plan. Details of subsidence monitoring relevant to the Rock Shelter with PAD have been detailed in **Section 9**.

## 7. PERFORMANCE MEASURES AND INDICATORS

### 7.1. Performance Measures

Subsidence impact performance measures are specified in Schedule 3, Condition 3 of PA 06\_0021 (as modified). The performance measures specifically relating to Aboriginal heritage features include:

- There are to be negligible subsidence impacts or environmental consequences for sites that may be determined to hold “special significance” as a result of studies required for extraction plans; and
- Less than 10% of Aboriginal heritage sites within any longwall mining domain are affected by subsidence impacts.

There are no Aboriginal heritage sites located within the Project Area. As outlined in **Section 5.1**, one Aboriginal heritage site, a Rock Shelter with PAD, has been identified approximately 465m west of secondary extraction in Longwall 910. This site is located outside the predicted area of subsidence and it is therefore considered to be “*very unlikely that cracking of cliff lines associated with the site would occur due to mine subsidence*” (DgS, 2010).

### 7.2. Performance Indicators

To establish compliance with the performance measures as outlined in **Section 7.1**, Angus Place have developed a monitoring program. This monitoring program (see **Section 9**), will be used to demonstrate that the environmental performance satisfies the following performance indicators:

- Visual inspections of the site identify that there is no evidence of damage;
- Survey monitoring of Global Navigations Satellite Systems (GNSS) stations identifies that vertical subsidence beyond the extent of the design angle of draw is negligible (<20mm); and
- Survey monitoring within the Project Area identifies that subsidence parameters (subsidence, tilt and strain) are within the limits of the prediction model.

## 8. MANAGEMENT MEASURES

As per the recommendations of the *Cultural Heritage Impact Assessment* (RPS, 2010), the following management and mitigation measures will be implemented by Angus Place during secondary extraction of Longwalls 900W and 910:

- Liaison established with the Aboriginal Community as per the *Interem Community Consultation Requirements for Applicants* (DECCW, 2005) during the preparation of the Cultural Heritage Impact Assessment will be maintained during the secondary extraction of Longwalls 900W and 910, should any matters relating to Aboriginal heritage occur;
- The Rock Shelter with PAD will be monitored during secondary extraction of Longwall 910 for the effects of cracking or movement. Monitoring will include pre and post mining inspections to assess and quantify any impact as detailed in **Section 9**;
- Any disturbance associated with the extraction of Longwalls 900W and 910 will be limited to the boundaries of the Study Area identified in the *Cultural Heritage Impact Assessment* (RPS, 2010). If works are planned outside of the Study Area, new and subsequent European and Aboriginal archaeological investigations will be initiated;
- If it is suspected Aboriginal cultural heritage material has been encountered, surface work will cease immediately in that locale. If Aboriginal site/s are identified in the Project Area, then all surface works in the area will cease, the area cordoned off and contact made with OEH Enviroline (131 555), a suitably qualified archaeologist and the relevant Aboriginal stakeholders, so that it can be adequately assessed and managed;
- In the event that skeletal remains are uncovered, any surface works being undertaken in the vicinity will be stopped immediately and the relevant command area of the NSW Police contacted. If skeletal remains are deemed to be of Aboriginal origin, then all surface works in the area will cease, the area cordoned off and contact made with OEH Enviroline (131 555), a suitably qualified archaeologist and the relevant Aboriginal stakeholders, so that it can be adequately assessed and managed; and
- If, during the course of surface works, significant European cultural heritage material is uncovered, surface work will cease in that area immediately. The NSW Heritage Branch will be notified and surface works only recommence when an appropriate and approved management strategy has been instigated.

## 9. MONITORING PROGRAM

### 9.1. Baseline Monitoring

Baseline monitoring of the Rock Shelter with PAD will be undertaken prior to the commencement of secondary extraction within Longwall 910. Baseline data will be obtained by Angus Place using a combination of the following methods:

- Installation of a subsidence monitoring line (the J Line) adjacent to the Rock Shelter with PAD, at the finishing end of Longwall 910, that will be used to monitor the angle of draw, subsidence, tilt and strain. The J Line will be surveyed prior to secondary extraction in Longwall 910 to establish pre-mining data;
- Installation of GNSS stations at two locations along a cliffline located to the west of Longwall 910, beyond the extent of the Project Area. These GNSS stations will be surveyed prior to secondary extraction within Longwall 910 to establish pre-mining data; and
- A visual inspection program will be undertaken by Angus Place that includes the use of photomonitoring points at the Aboriginal heritage site. Photos will be taken from these sites prior to the commencement of secondary extraction in Longwall 910 to establish the pre-mining condition of the site.

## 9.2. Monitoring Subsidence Impacts

There is no subsidence predicted in the area of the Rock Shelter with PAD, however, this site will be monitored pre and post mining for evidence of any subsidence related impacts such as cracking or movement. **Table 5** provides a summary of the subsidence monitoring program that will be undertaken, as relevant to the Rock Shelter with PAD. Additional detail pertaining to subsidence monitoring methodology relevant to the Project Area can be found in the *Longwalls 900W and 910 Subsidence Monitoring and Reporting Program*.

**Table 5. Heritage Monitoring Program**

Monitoring Method	Parameter	Frequency
Subsidence survey line (J Line)	Subsidence, tilt, strain and angle of draw	Prior and post secondary extraction in Longwall 910
GNSS stations	Subsidence and angle of draw	Prior and post secondary extraction in Longwall 910
Visual inspections including photo monitoring points	Presence or absence of damage	Monthly during secondary extraction within 500m of Longwall 910. Inspections will continue for four consecutive months following the completion of secondary extraction within Longwall 910. A final inspection will be undertaken 12 months after the completion of secondary extraction within Longwall 910

## 9.3. Monitoring Environmental Consequences

No heritage items have been identified within the Project Area. The Rock Shelter with PAD is located approximately 465m to the west of Longwall 910 and 280m from the Project Area. There is not predicted to be any subsidence in the area of the Rock Shelter with PAD, accordingly there are not predicted to be any negative environmental consequences at the Aboriginal heritage site. The monitoring program that will be used to confirm the predictions is outlined in **Section 9.2**.

## 9.4. Success of Remediation Measures

No heritage items have been identified within the Project Area. There is a Rock Shelter with PAD located approximately 465m west of Longwall 910. There is no subsidence predicted at the Aboriginal heritage site, subsequently no subsidence related impacts have been predicted and no remediation measures have been deemed necessary. Notwithstanding this, contingency measures have prudently been developed in **Section 12** of this plan to address any potential variance from predictions.

## 10. CONSULTATION

In accordance with the requirements of Schedule 3, Condition 3C of PA 06\_0021 (as modified), this Heritage Management Plan was provided to OEH and relevant stakeholders for Aboriginal heritage as part of the consultation process on 28 August 2013. Aboriginal stakeholder groups consulted during the preparation of this Plan included the Bathurst Local Aboriginal Land Council, Gundungurra Tribal Council Aboriginal Corporation, Mingaan Aboriginal Corporation, and Warrabinga Native Title Claimants Aboriginal Corporation.

In November 2013 this Heritage Management Plan was updated to include the relevant findings as presented in the *Subsidence Assessment Review for the Longwalls 900W and 910 Integrated SMP/Extraction Plan, Centennial Angus Place Colliery* (DgS, 2013) (see **Section 5.2.1**). This plan



was subsequently re-submitted to OEH and relevant stakeholders for consultation on 15 November 2013. Evidence of the consultation undertaken during the preparation of this Heritage Management Plan has been provided as **Appendix 1**.

To satisfy Mod 1 Statement of Commitment 2.1 (see **Table 2**) as appended to PA 06\_0021 (as modified), the Environmental Management Plan was revised in March 2012 to include requirements for the ongoing liaison with the Aboriginal Community in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010), should any matters relating to Aboriginal heritage occur during the secondary extraction of Longwalls 900W and 910.

## 11. ADAPTIVE MANAGEMENT

Angus Place have developed an adaptive management approach that is designed to avoid repetition of any unpredicted subsidence impacts and/or environmental consequences. This approach will include the monitoring and periodic evaluation of environmental consequences against the performance indicators defined in **Section 7.2**; the implementation of the contingency plan (see **Section 12**) in the event that a performance indicator is exceeded; and the review of this Heritage Management Plan as necessary (see **Section 15**).

## 12. CONTINGENCY PLAN

A Trigger Action Response Plan (TARP) has been developed using the performance indicators for the Rock Shelter with PAD, as outlined in **Section 7.2**. In the event that subsidence monitoring and/or visual inspections identify that a performance indicator has been exceeded, Angus Place will implement the contingency measures as detailed in the TARP (see **Table 6**).



**Table 6. Trigger Action Response Plan for Heritage Management**

Aspect/ Category	Key Element	Trigger Response	Condition Green	Condition Amber	Condition Red
Heritage	Subsidence Related Impacts to the Rock Shelter with PAD	Trigger	Visual inspections of the site identify that there is no evidence of damage.	Visual inspections identify potential evidence of damage at the site i.e. minor cracking in rock face.	Visual inspections identify evidence of damage at the site i.e. cracking in rock face or rock fall.
		Response	No response required. Continue monitoring program.	Review previous photographic evidence to identify if there have been visual changes to the site since the commencement of secondary extraction in Longwall 910 i.e. minor cracking. If visual changes are identified, undertake survey monitoring to identify if there is measurable subsidence beyond the design angle of draw or if impacts were the result of natural processes. If there is no measurable subsidence, or subsidence is <20mm, no response required as subsidence is negligible. Continue monitoring program. If measurable subsidence beyond the design angle of draw exceeds 20mm, undertake management as outlined for Condition Red responses.	Undertake survey monitoring to identify if there is measurable subsidence beyond the design angle of draw or if impacts were the result of natural processes. If subsidence beyond the design angle of draw exceeds 20mm, notify the Director-General of DP&I, DTIRIS, OEH, the Forestry Corporation of NSW (FCNSW) and Aboriginal stakeholders of exceedance of subsidence predictions. Erect warning signs and danger tape in immediate Area. Investigate exceedance of subsidence prediction model. Identify and implement remedial actions in consultation with relevant stakeholders, if necessary.
		Trigger	Survey monitoring identifies that there is no measurable subsidence beyond the design angle of draw.	Survey monitoring identifies that measured subsidence beyond the design angle of draw is <20mm (negligible).	Survey monitoring identifies that measured subsidence beyond the design angle of draw is >20mm.
		Response	No response required. Continue monitoring program.	No response required as measured subsidence is negligible. Continue monitoring program.	If subsidence beyond the design angle of draw exceeds 20mm, notify the Director-General of DP&I, DTIRIS, OEH, the FCNSW and Aboriginal stakeholders of exceedance of subsidence predictions. Erect warning signs and danger tape in immediate Area. Investigate exceedance of subsidence prediction model. Identify and implement remedial actions in consultation with relevant stakeholders, if necessary.
	Subsidence	Trigger	Survey monitoring within the Project Area identifies that subsidence parameters (subsidence, tilt and strain) are less than the limits specified by the prediction model.	Survey monitoring within the Project Area identifies that subsidence parameters (subsidence, tilt and strain) are up to, but do not exceed the limits of the prediction model.	Survey monitoring within the Project Area identifies that subsidence parameters (subsidence, tilt and strain) exceed the limits of the prediction model.
	Subsidence	Response	No response required. Continue monitoring program.	No response required. Continue monitoring program.	If subsidence within the Project Area exceeds the limits of the prediction model, notify the Director-General of DP&I, DTIRIS, the FCNSW and relevant stakeholders of exceedance of subsidence predictions. Investigate exceedance of subsidence prediction model. Identify and implement remedial actions in consultation with relevant stakeholders, if necessary (e.g. undertake review of Heritage Management Plan).

### 13. ROLES AND RESPONSIBILITIES

The responsibility for implementation, monitoring and review of the Heritage Management Plan lies with the Environment and Community Coordinator. The ultimate responsibility for the implementation of the Heritage Management Plan lies with the Mine Manager, who shall make appropriate resources available. The roles and responsibilities for this Heritage Management Plan are outlined in **Table 7**.

**Table 7. Key Personnel and Accountabilities**

Position	Responsibility
Mine Manager	<ul style="list-style-type: none"> <li>• Ensuring that sufficient resources are available to implement and execute the requirements of this Plan; and</li> <li>• Reporting triggers/non-conformances to external stakeholders.</li> </ul>
Environment and Community Coordinator	<p>Implementation, monitoring and review of this plan, including:</p> <ul style="list-style-type: none"> <li>• The carrying out of inspections;</li> <li>• The installation and maintenance of signage;</li> <li>• Reporting triggers/non-conformances internally to the Mine Manager as appropriate;</li> <li>• Consulting with OEH, NSW Heritage Branch, and Aboriginal stakeholders on any heritage issues arising from subsidence;</li> <li>• Consultation during the review process with relevant stakeholders and distributing this Heritage Management Plan;</li> <li>• Coordinating any remediation work as required;</li> <li>• Inspecting areas susceptible to tensile and compressive strains and potential cracking;</li> <li>• Co-ordinating the generation and submission of formal reporting requirements outlined in this plan (e.g. End of Panel Reports and the Annual Environmental Management Report); and</li> <li>• Reviewing this Heritage Management Plan.</li> </ul>

### 14. REPORTING

In accordance with the requirements of the *Draft Guidelines for the Preparation of Extraction Plans* (DP&I 2012), Angus Place will submit the following reports to the DP&I and DTIRIS during the secondary extraction of Longwalls 900W and 910:

- Bi-monthly Subsidence Impact Reports - These reports will be submitted following the regular monthly inspections if any new subsidence impacts are identified; and
- Six-monthly Environmental Monitoring Report - This report will include:
  - a comprehensive summary of all impacts, including a revised characterisation according to the relevant TARP and any proposed actions resulting from the relevant TARP (see **Section 12**);
  - an assessment of compliance with relevant performance indicators (see **Section 7.2**); and
  - a comprehensive summary of all quantitative and qualitative environmental monitoring results.

The Annual Environmental Management Report (AEMR)/Annual Review will be made available on the Centennial Coal website and will include subsidence monitoring results, performance against

subsidence predictions and identification of any subsidence related environmental impacts identified during the reporting period.

In accordance with the requirements of Schedule 5, Condition 6 of PA 06\_0021 (as modified), Angus Place will notify the Director-General of DP&I, FCNSW and any other relevant agencies of any land management related incident, resulting from the extraction of Longwalls 900W and 910 as soon as practicable after becoming aware of the incident. Within seven days of the incident, the Proponent shall provide the Director-General of DP&I and any relevant agencies with a detailed report on the incident.

Angus Place will also prepare an End of Panel Report to encompass all environmental and subsidence monitoring, including a comparison of actual impacts with predicted subsidence impacts. This report will be submitted to DTIRIS within three months of secondary extraction being completed in each longwall panel.

## **15. REVIEW**

This Heritage Management Plan will be reviewed every three years, or in the event that the following occur:

- Stakeholders raise issues that necessitate a review;
- There are changes to the management requirements (e.g. a new Aboriginal heritage site is identified within the Project Area, or if there are changes to related approvals);
- Where unpredicted impacts or consequences have required implementation of contingency actions under this plan; or
- Monitoring, incident, or audit processes demonstrate that a review is warranted.

Any amendments to the Heritage Management Plan will be undertaken in consultation with OEH and relevant stakeholders for Aboriginal heritage. Following any changes a copy of the amended Heritage Management Plan will be forwarded to the Director-General of the DP&I for approval.

## 16. REFERENCES

- Centennial Coal (2008). *Centennial Coal Risk Management Standard (Management Standard – 004)*.
- DgS (2010). *Subsidence Prediction and Impact Assessment, Report no ANP\_002/1*.
- DgS (2013). *Subsidence Assessment Review for the Longwalls 900W and 910 Integrated SMP/Extraction Plan, Centennial Angus Place Colliery*. Report No. ANP-002/7.
- DECCW (2005). *Interem Community Consultation Requirements for Applicants*.
- DECCW (2010). *Aboriginal Cultural Heritage Consultation Requirements for Proponents*.
- Department of Mineral Resources (2003). *Guideline for Applications for Subsidence Management Approvals*.
- DP&I (2012) *Draft Guidelines for the Preparation of Extraction Plans*.
- RPS (2010). *Cultural Heritage Impact Assessment, Angus Place Colliery 75W Modification, Report No.: 26317*.

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# APPENDIX 1: Stakeholder Consultation



28 August 2013

Helen Riley  
Chairperson  
Mingaan Aboriginal Tribal Council  
38 Tweed Road  
Lithgow NSW 2790

Dear Helen,

**Re: Angus Place Colliery Heritage Management Plan**

Angus Place Colliery has been preparing an integrated Subsidence Management Plan (SMP)/Extraction Plan for Longwalls 900W and 910 in accordance with regulatory requirements outlined within the Project Approval.

The Heritage Management Plan attached outlines the monitoring and management measures that will be implemented to manage potential environmental consequences specifically from the extraction of Angus Place Longwalls 900W and 910 upon Aboriginal heritage sites or values. An overview of the above mentioned regulatory requirements are included within the plan.

Accordingly the document has been provided to Mingaan Aboriginal Tribal Council for review as part of the consultation process for the integrated SMP Extraction Plan. If there are any objections to its content please notify Angus Place by the 13<sup>th</sup> of September 2013. By default, if no comment or extension request is received by Angus Place by this date it will be assumed there are no objections and the document will be submitted for approval as a component of the integrated Subsidence Management Plan SMP/Extraction Plan for Longwalls 900W and 910.

If you require further information, please contact the Angus Place Environmental Officer, Natalie Conroy on (02)6354 8938 or [natalie.conroy@centennialcoal.com.au](mailto:natalie.conroy@centennialcoal.com.au).

Regards



Brian Nicholls

Mine Manager  
Centennial Angus Place





28 August 2013

Chairperson  
Warrabinga Native Title Claimants Aboriginal Corporation  
545 Pheasants Nest Road  
Pheasants Nest 2574

Dear Chairperson,

**Re: Angus Place Colliery Heritage Management Plan**

Angus Place Colliery has been preparing an integrated Subsidence Management Plan (SMP)/Extraction Plan for Longwalls 900W and 910 in accordance with regulatory requirements outlined within the Project Approval.

The Heritage Management Plan attached outlines the monitoring and management measures that will be implemented to manage potential environmental consequences specifically from the extraction of Angus Place Longwalls 900W and 910 upon Aboriginal heritage sites or values. An overview of the above mentioned regulatory requirements are included within the plan.

Accordingly the document has been provided to Warrabinga Native Title claimants Aboriginal Corporation for review as part of the consultation process for the integrated SMP Extraction Plan. If there are any objections to its content please notify Angus Place by the 13<sup>th</sup> of September 2013. By default, if no comment or extension request is received by Angus Place by this date it will be assumed there are no objections and the document will be submitted for approval as a component of the integrated Subsidence Management Plan SMP/Extraction Plan for Longwalls 900W and 910.

If you require further information, please contact the Angus Place Environmental Officer, Natalie Conroy on (02)6354 8938 or [natalie.conroy@centennialcoal.com.au](mailto:natalie.conroy@centennialcoal.com.au).

Regards



Brian Nicholls

Mine Manager  
Centennial Angus Place



28 August 2013

Ms. Sharon Brown  
Chairperson  
Gundungurra Tribal Council  
14 Oak Street  
KATOOMBA NSW 2780

Dear Sharon,

**Re: Angus Place Colliery Heritage Management Plan**

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If you require further information, please contact the Angus Place Environmental Officer, Natalie Conroy on (02)6354 8938 or [natalie.conroy@centennialcoal.com.au](mailto:natalie.conroy@centennialcoal.com.au).

Regards



Brian Nicholls

Mine Manager  
Centennial Angus Place



28 August 2013

Mr. Warwick Peckham  
Bathurst Local Aboriginal Land Council  
PO Box 1500  
BATHURST NSW 2795

Dear Warwick,

**Re: Angus Place Colliery Heritage Management Plan**

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Regards

Brian Nicholls

Mine Manager  
Centennial Angus Place





28 August 2013

Mr. Marc Irvin  
Senior Threatened Species Officer  
Biodiversity Conservation Unit  
Office of Environment Heritage  
PO Box 2111  
DUBBO NSW 2830

Dear Marc,

**Re: Angus Place Colliery Heritage Management Plan**

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Regards



Brian Nicholls

Mine Manager  
Centennial Angus Place



28 August 2013

Mr. Peter Christie  
Head, Biodiversity Conservation Unit  
Office of Environment Heritage  
PO Box 2111  
DUBBO NSW 2830

Dear Peter,

**Re: Angus Place Colliery Heritage Management Plan**

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If you require further information, please contact the Angus Place Environmental Officer, Natalie Conroy on (02)6354 8938 or [natalie.conroy@centennialcoal.com.au](mailto:natalie.conroy@centennialcoal.com.au).

Regards



Brian Nicholls

Mine Manager  
Centennial Angus Place


## Adam Williams

---

**From:** Natalie Conroy <Natalie.Conroy@centennialcoal.com.au>  
**Sent:** Monday, 9 September 2013 9:00 AM  
**To:** Adam Williams  
**Subject:** Fw: Angus Place Colliery Heritage Management Plan.

Correspondence below

Environmental Officer

 63548938

 0467 708 799

 [Natalie.Conroy@centennialcoal.com.au](mailto:Natalie.Conroy@centennialcoal.com.au)

 [www.centennialcoal.com.au](http://www.centennialcoal.com.au)

 *Be green - read on the screen*



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----- Forwarded by Natalie Conroy/CentennialCoal on 09/09/13 09:00 AM -----

**From:** Sonya Ardill <[Sonya.Ardill@environment.nsw.gov.au](mailto:Sonya.Ardill@environment.nsw.gov.au)>  
**To:** "[natalie.conroy@centennialcoal.com.au](mailto:natalie.conroy@centennialcoal.com.au)" <[natalie.conroy@centennialcoal.com.au](mailto:natalie.conroy@centennialcoal.com.au)>  
**Date:** 05/09/13 02:42 PM  
**Subject:** Angus Place Colliery Heritage Management Plan.

---

Dear [addressee]

Dear Natalie

### RE Angus Place Colliery Heritage Management Plan

I refer to your letter dated 28 August 2013 requesting comments on the above management plan from the Office of Environment and Heritage (OEH).

OEH has no specific comments to make on the management plan.

Should you require further information regarding issues that are the responsibility of the OEH please contact Sonya Ardill, Senior Team Leader Planning, on 6883 5313 or on [sonya.ardill@environment.nsw.gov.au](mailto:sonya.ardill@environment.nsw.gov.au)

Yours sincerely

Sonya Ardill

Senior Team Leader Planning - North West

Regional Operations Group

Office of Environment and Heritage

NSW Department of Premier and Cabinet

PO Box 2111 Dubbo NSW 2830

T: 02 68835313

M: 0428250796

W: [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

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This email is intended for the addressee(s) named and may contain confidential and/or privileged information.

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# Centennial Coal

Angus Place



15 November 2013

Chairperson  
Warrabinga Native Title Claimants Aboriginal Corporation  
545 Pheasants Nest Road  
Pheasants Nest NSW 2574

Dear Chairperson,

## Re: Angus Place Colliery Heritage Management Plan

Angus Place provided the Warrabinga Native Title Claimants Aboriginal Corporation with a copy of the Longwalls 900W and 910 Heritage Management Plan on 28 August 2013 as part of the consultation process for the Longwalls 900W and 910 Integrated SMP/Extraction Plan which is being submitted by the end of November.

As a component of the Longwalls 900W and 910 Integrated SMP/Extraction Plan, Angus Place engaged Ditton Geotechnical Services (DgS) to undertake a review of the original *Subsidence Prediction and Impact Assessment* (DgS, 2010) which was prepared as a component of the Environmental Assessment titled *Angus Place Colliery, NSW Modification of Project Approval 06\_0021 under Section 75W, Part 3A* (RPS, 2010).

The report titled *Subsidence Assessment Review for the Longwalls 900W and 910 Integrated SMP/Extraction Plan, Centennial Angus Place Colliery* (DgS, 2013), incorporated relevant information obtained by Angus Place since the approval of PA 06\_0021 (Mod 1) in August 2011, including subsidence monitoring data and observed subsidence effects following the completion of secondary extraction in Longwalls 960 and 970, and a change to the mining height within Longwalls 900W and 910.

The original *Subsidence Prediction and Impact Assessment* (DgS, 2010) assessed potential subsidence effects for Longwalls 900W and 910 based upon a mining height of 3.25 m. Angus Place will now mine Longwalls 900W and 910 at an extraction height up to 3.425 m. This change has been assessed by DgS (2013) which concluded that "the observed and predicted subsidence impacts and environmental consequences for LWs 960 and 970 have also been consistent with predictions for LWs 900W and 910, and as such, the predicted 'negligible' environmental consequences for LWs 900W and 910 are not expected to change from the previous assessment due to the 5% increase in mining height."

"It is therefore considered that the impact management strategies for the environment and site developments (e.g. access roads and Endeavour Energy 66kV power line) that were outlined in DgS, 2010 are still valid and do not require amendment" (DgS, 2013). The management measures as outlined in Section 8 are consistent with the impact management strategies outlined in the *Subsidence Prediction and Impact Assessment* (DgS, 2010).

The enclosed Longwalls 900W and 910 Heritage Management Plan has been revised to incorporate the findings of DgS (2013) and has subsequently been resubmitted for consultation. Angus Place requests that any feedback is received by 22 November 2013. By default if no comment or extension request is received by Angus Place by this date it will be

assumed that there are no objections and the document will be submitted with the Longwalls 900W and 910 Integrated SMP/Extraction Plan.

If you require any further information regarding the enclosed management plan please contact the Angus Place Environment and Community Coordinator, Natalie Conroy by telephone, on (02) 6354 8938 or by email, [Natalie.conroy@centennialcoal.com.au](mailto:Natalie.conroy@centennialcoal.com.au).

Yours sincerely



Brian Nicholls  
Manager of Mining Engineering  
Centennial Angus Place





# Centennial Coal

Angus Place



15 November 2013

Mr Marc Irvin  
Senior Threatened Species Officer  
Biodiversity Conservation Unit  
Office of Environment and Heritage  
PO Box 2111  
Dubbo NSW 2830

Dear Marc,

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Brian Nicholls  
Manager of Mining Engineering  
Centennial Angus Place





# Centennial Coal

Angus Place



15 November 2013

Mr Peter Christie  
Head, Biodiversity Conservation Unit  
Office of Environment and Heritage  
PO Box 2111  
Dubbo NSW 2830

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Yours sincerely



Brian Nicholls  
Manager of Mining Engineering  
Centennial Angus Place





# Centennial Coal

Angus Place



15 November 2013

Helen Riley  
Chairperson  
Mingaan Aboriginal Tribal Council  
38 Tweed Road  
Lithgow NSW 2790

Dear Helen,

## Re: Angus Place Colliery Heritage Management Plan

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Yours sincerely



Brian Nicholls  
Manager of Mining Engineering  
Centennial Angus Place





# Centennial Coal

Angus Place



15 November 2013

Ms Sharon Brown  
Chairperson  
Gundungurra Tribal Council  
14 Oak Street  
Katoomba NSW 2780

Dear Sharon,

## Re: Angus Place Colliery Heritage Management Plan

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Yours sincerely



Brian Nicholls  
Manager of Mining Engineering  
Centennial Angus Place





# Centennial Coal

Angus Place



15 November 2013

Mr Warwick Peckham  
Bathurst Local Aboriginal Land Council  
PO Box 1500  
Bathurst NSW 2795

Dear Warwick,

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As a component of the Longwalls 900W and 910 Integrated SMP/Extraction Plan, Angus Place engaged Ditton Geotechnical Services (DgS) to undertake a review of the original *Subsidence Prediction and Impact Assessment* (DgS, 2010) which was prepared as a component of the Environmental Assessment titled *Angus Place Colliery, NSW Modification of Project Approval 06\_0021 under Section 75W, Part 3A* (RPS, 2010).

The report titled *Subsidence Assessment Review for the Longwalls 900W and 910 Integrated SMP/Extraction Plan, Centennial Angus Place Colliery* (DgS, 2013), incorporated relevant information obtained by Angus Place since the approval of PA 06\_0021 (Mod 1) in August 2011, including subsidence monitoring data and observed subsidence effects following the completion of secondary extraction in Longwalls 960 and 970, and a change to the mining height within Longwalls 900W and 910.

The original *Subsidence Prediction and Impact Assessment* (DgS, 2010) assessed potential subsidence effects for Longwalls 900W and 910 based upon a mining height of 3.25 m. Angus Place will now mine Longwalls 900W and 910 at an extraction height up to 3.425 m. This change has been assessed by DgS (2013) which concluded that "the observed and predicted subsidence impacts and environmental consequences for LWs 960 and 970 have also been consistent with predictions for LWs 900W and 910, and as such, the predicted 'negligible' environmental consequences for LWs 900W and 910 are not expected to change from the previous assessment due to the 5% increase in mining height."

"It is therefore considered that the impact management strategies for the environment and site developments (e.g. access roads and Endeavour Energy 66kV power line) that were outlined in DgS, 2010 are still valid and do not require amendment" (DgS, 2013). The management measures as outlined in Section 8 are consistent with the impact management strategies outlined in the *Subsidence Prediction and Impact Assessment* (DgS, 2010).

The enclosed Longwalls 900W and 910 Heritage Management Plan has been revised to incorporate the findings of DgS (2013) and has subsequently been resubmitted for consultation. Angus Place requests that any feedback is received by 22 November 2013. By default if no comment or extension request is received by Angus Place by this date it will be

assumed that there are no objections and the document will be submitted with the Longwalls 900W and 910 Integrated SMP/Extraction Plan.

If you require any further information regarding the enclosed management plan please contact the Angus Place Environment and Community Coordinator, Natalie Conroy by telephone, on (02) 6354 8938 or by email, [Natalie.conroy@centennialcoal.com.au](mailto:Natalie.conroy@centennialcoal.com.au).

Yours sincerely



Brian Nicholls  
Manager of Mining Engineering  
Centennial Angus Place





# Centennial Coal

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