WAMBO COAL PTY LIMITED

SOUTH BATES UNDERGROUND MINE

EXTRACTION PLAN
LONGWALLS 11 TO 16

APPENDIX E
BUILT FEATURES MANAGEMENT PLAN
RELEVANT STAKEHOLDERS

This Built Features Management Plan provides a summary of the management plan prepared for assets relevant to Wambo Coal Pty Limited. Wambo Coal Pty Limited is the only relevant stakeholder as there are no built features owned or operated by other parties.

DOCUMENT CONTROL

<table>
<thead>
<tr>
<th>Document No.</th>
<th>BFMP LW11-16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Built Features Management Plan for South Bates Underground Mine Longwalls 11 to 16</td>
</tr>
<tr>
<td>General Description</td>
<td>Management of potential subsidence impacts and/or environmental consequences on all public infrastructure and all classes of other built features for mining of Longwalls 11 to 16 at the South Bates Underground Mine</td>
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Revisions

<table>
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<tr>
<th>Rev No</th>
<th>Date</th>
<th>Description</th>
<th>By</th>
<th>Checked</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>October 2015</td>
<td>Final for Submission</td>
<td>WCPL and Resource Strategies</td>
<td>T. Britten</td>
</tr>
<tr>
<td>B</td>
<td>January 2016</td>
<td>Incorporation of Addendum</td>
<td>WCPL and Resource Strategies</td>
<td>T. Britten</td>
</tr>
<tr>
<td>C</td>
<td>January 2017</td>
<td>Update to include Longwalls 14 to 16</td>
<td>WCPL and Resource Strategies</td>
<td>T. Britten</td>
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The nominated Coordinator for this document is Technical Services Manager
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1 INTRODUCTION

The Wambo Coal Mine is an open cut and underground coal mining operation located approximately 15 kilometres (km) west of Singleton, near the village of Warkworth, New South Wales (NSW). The Wambo Coal Mine is owned and operated by Wambo Coal Pty Limited (WCPL), a subsidiary of Peabody Energy Australia Pty Limited.

The South Bates Underground Mine is a component of the approved Wambo Coal Mine. The South Bates Underground Mine commenced in Longwall 11 in February 2016 and involves extraction of coal by longwall mining methods from the Whybrow Seam and Wambo Seam within Coal Lease (CL) 397 and Mining Lease (ML) 1594 (Figure 1).

The potential environmental impacts of the existing Wambo Coal Mine (including the approved South Bates [Whybrow Seam] Underground Mine) were assessed in the Wambo Development Project Environmental Impact Statement (the Wambo Development Project EIS) (WCPL, 2003). Development Consent DA 305-7-2003 for the Wambo Coal Mine was granted on 4 February 2004 by the then NSW Minister for Urban Affairs and Planning under Part 4 of the NSW Environmental Planning and Assessment Act, 1979.

An application to modify the Development Consent (DA 305-7-2003 MOD 15) was lodged in July 2015 to allow an extension to the South Bates Underground Mine to include three additional longwalls (Longwalls 14 to 16) in the Wambo Seam and was approved on 10 November 2015. The application was accompanied by the South Bates (Wambo Seam) Underground Mine Modification Environmental Assessment (WCPL, 2015).

An Extraction Plan for Longwalls 11 to 13 was approved by the NSW Department of Planning and Environment (DP&E) on 9 February 2016. The approved Extraction Plan for Longwalls 11 to 13 has been revised to include Longwalls 14 to 16 within the South Bates Underground Mine for a consolidated Extraction Plan for Longwalls 11 to 16.

This Built Features Management Plan (BFMP) has been updated from the previous revision (Revision B) to incorporate Longwalls 14 to 16 in the Wambo Seam.

1.1 PURPOSE AND SCOPE

Purpose: This BFMP for Longwalls 11 to 16 outlines the management of all classes of built features for the proposed secondary workings described in the Extraction Plan.

Scope: This BFMP covers all classes of built features within the Longwalls 11 to 16 Application Area (Figure 1).

This BFMP has been prepared in accordance with Condition 22C(g) of Schedule 4 of the Development Consent (DA 305-7-2003) as a component of the South Bates Underground Mine Longwalls 11 to 16 Extraction Plan.

This BFMP has been prepared by WCPL with assistance from Resource Strategies. The appointment of the team of suitably qualified and experienced experts (which includes representatives from WCPL and Resource Strategies) has been endorsed by the Secretary of the DP&E.
Approved Montrose Water Storage (Not Yet Constructed)

Creek Stony Creek

Approved Montrose Water Storage (Not Yet Constructed)

Creek Stony Creek

WOLLEMI NATIONAL PARK

South Bates (Wambo Seam) Underground Mine

South Bates (Whybrow Seam) Underground Mine

North Wambo Underground Mine

South Wambo Underground Mine

D Extension

B
E

previous Alignment of North Wambo Creek

Location of Built Features

LEGEND
Remnant Woodland Enhancement Program (RWEP) Area
Mining and Coal Lease Boundary
Existing/Approved Surface Development Area
South Bates (Whybrow Seam) Underground Mine
South Bates (Wambo Seam) Underground Mine
Other Approved Underground Development
Extraction Plan Application Area
Fire Trail
Access Track

11 kV Power Line
11 kV Power Line Buried
66 kV Power Line and Fibre Optic Cable
Surface Water Supply/Dewatering Pipeline
Buried Water Supply/Dewatering Pipeline
Buildings
Dams
Groundwater Monitoring Site
Gas Riser 01

Source: Department of Lands (July 2009); MSEC (2013); WCN (2014); WCPL Orthophoto (July 2016)

Figure 1
1.2 ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
<th>Unit</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BFMP</td>
<td>Built Features Management Plan</td>
<td>km</td>
<td>kilometre</td>
</tr>
<tr>
<td>CCC</td>
<td>Community Consultative Committee</td>
<td>kV</td>
<td>kilovolt</td>
</tr>
<tr>
<td>CL</td>
<td>Coal Lease</td>
<td>ML</td>
<td>Mining Lease</td>
</tr>
<tr>
<td>DPI Water</td>
<td>Department of Primary Industries – Water</td>
<td>MSEC</td>
<td>Mine Subsidence Engineering Consultants</td>
</tr>
<tr>
<td>DP&amp;E</td>
<td>NSW Department of Planning and Environment</td>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>DRE</td>
<td>NSW Division of Resources and Energy</td>
<td>OEH</td>
<td>NSW Office of Environment and Heritage</td>
</tr>
<tr>
<td>EPA</td>
<td>NSW Environment Protection Authority</td>
<td>WAMP</td>
<td>WCPL Asset Management Plan</td>
</tr>
<tr>
<td>WCPL</td>
<td>Wambo Coal Pty Limited</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.3 STRUCTURE OF THE BUILT FEATURES MANAGEMENT PLAN

This BFMP forms part of WCPL’s Environmental Management System for the Wambo Coal Mine and includes a WCPL Asset Management Plan for Longwalls 11 to 16 (WAMP) (component plan), provided in Attachment 1.

The relationship of this BFMP to the Wambo Coal Mine Environmental Management System is shown on Figure 2.

The Longwalls 11 to 16 Application Area does not intersect the Notification Area of any Prescribed Dam gazetted under the Dams Safety Act, 1978 (Figure 3).

2 BUILT FEATURES

A number of WCPL-owned built features are located within the Longwalls 11 to 16 Application Area as indicated in Figure 1. Monitoring and management measures have been developed for each of these built features and are detailed in the WAMP as summarised in Table 1. WCPL owns all assets within the Longwalls 11 to 16 Application Area.

The Longwalls 11 to 16 Application Area is located wholly within the Patrick Plains Mine Subsidence District (proclaimed 2 July 1980). Wells, fences, gates and tracks are the only man-made structures in the Longwalls 11 to 16 Application Area known to have been constructed prior to declaration of the Mine Subsidence District.

The Longwalls 11 to 16 Application Area is wholly within WCPL-owned land and there are no relevant proposed developments within the Longwalls 11 to 16 Application Area proposed by other parties.
Life of Mine Rejects Emplacement Strategy (C. 22G)

Bushfire Management Plan (C. 93)

Wambo Homestead Complex Conservation Management Plan (C. 58)

Wambo Homestead Complex Mine Management Plan (C. 57)

Noise Management Plan (C. 9)

Air Quality and Greenhouse Gas Management Plan (C. 5C)

Blast Management Plan (C. 20)

Final Void Management Plan (C. 39)

Traffic Management Plan (C. 80)

Site Water Management Plan (C. 30)

Surface Water Monitoring Program (C. 30[a])

Groundwater Monitoring Program (C. 30[t])

Surface and Groundwater Response Plan (C. 30[q])

Water Management Plan (C. 22C[b])

North Wambo Creek Diversion Plan (C. 30[z])

Erosion and Sediment Control Plan (C. 30[d])

Land Management Plan (C. 22C[h])

Heritage Management Plan (C. 52 & C. 22C[h])

Vegetation Clearance Protocol (C. 44[a])

Threatened Species Management Protocol (C. 44[b])

Remnant Woodland Enhancement Program (C. 44[c])

Biodiversity Monitoring Program (C. 44[d])

Heritage Management Plan (C. 52 & C. 22C[h])

Subsidence Monitoring Program (C. 22C[q])

Built Features Management Plan (C. 22C[q])

Cool Resource Recovery Plan (C. 22C[q])

Public Safety Management Plan (C. 22C[q])

WCPL Asset Management Plan

Built Features Management Plan (C. 22C[q])

Safety Management System (C. 91)
### Table 1
**Summary of Built Features within the Longwalls 11 to 16 Application Area**

<table>
<thead>
<tr>
<th>Built Feature</th>
<th>Relevant Stakeholder</th>
<th>Component Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buried 11 kilovolt (kV) powerlines, telecommunication and fibre optic cables</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>Water supply pipelines and associated pumps and ancillary infrastructure</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>Groundwater monitoring bores (GW19 and N3)</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>Bates South pit walls</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>Exploration drill holes</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>Fences</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>Gas Riser 01</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>Unsealed roads</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>Site access tracks</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>Other unsealed tracks</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>Exploration plant that may be located in the area</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>Drainage culverts</td>
<td>WCPL</td>
<td>WAMP (Attachment 1)</td>
</tr>
<tr>
<td>North Wambo Creek Diversion</td>
<td>WCPL</td>
<td>-</td>
</tr>
</tbody>
</table>

1 The North Wambo Creek Diversion is managed separately in accordance with the Water Management Plan for Longwalls 11 to 16.

There are no state survey control marks within the Longwalls 11 to 16 Application Area. There are state survey control marks located more than 1.5 km from the longwalls (Mine Subsidence Engineering Consultants [MSEC], 2017). Any far-field movements to survey control marks would be managed in accordance with the conditions of the mining lease.

### 3 PERFORMANCE MEASURES

The performance measures specified in Table 14B of Schedule 4 of the Development Consent (DA 305-7-2003) relevant to built features are listed in Table 2.

### Table 2
**Built Features Performance Measures**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Subsidence Impact Performance Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>All built features</td>
<td>Always safe. Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated.</td>
</tr>
</tbody>
</table>

Source: Table 14B of Schedule 4 of the Development Consent (DA 305-7-2003).

In accordance with Condition 22 and 22A of Schedule 4 of the Development Consent (DA 305-7-2003), WCPL must ensure that there is no exceedance of the performance measures listed in Tables 14A and 14B of Schedule 4 of the Development Consent (DA 305-7-2003).
Performance indicators for the performance measures relating to the built features within the Longwalls 11 to 16 Application Area are presented in the relevant component plan of this BFMP as summarised in Table 1. The assessment of the secondary extraction of Longwalls 11 to 16 against the performance indicators for the performance measures for built features would be undertaken in accordance with the relevant component plan of this BFMP.

4 LEGAL REQUIREMENTS AND GUIDELINES

The Development Consent (DA 305-7-2003) includes provisions for dispute resolution between WCPL and the owner of any built feature over the interpretation, application or implementation of the performance measures listed in Table 2. Specifically Condition 22B of Schedule 4 of the Development Consent (DA 305-7-2003) states:

Any dispute between the Applicant and the owner of any built feature over the interpretation, application or implementation of the performance measures in Table 14B is to be settled by DRE. DRE may seek the advice of the MSB on the matter. Any decision by DRE shall be final and not subject to further dispute resolution under this consent.

Additional requirements under WCPL mining tenements in regard to built features within the Longwalls 11 to 16 Application Area are addressed in Attachment 1 of the Extraction Plan.

5 SUBSIDENCE PREDICTIONS

Predictions of subsidence effects for Longwalls 11 to 16 were developed by MSEC (2017). The maximum subsidence, tilts and curvatures predicted for Longwalls 11 to 16 are summarised in Table 3 and the location of predicted subsidence is presented in Figure 4.

Table 3
Maximum Predicted Subsidence, Tilt and Strains for Longwalls 11 to 16

<table>
<thead>
<tr>
<th>Subsidence Parameter</th>
<th>Maximum Values Predicted Anywhere Above the Longwalls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Subsidence (mm)</td>
<td>4,150</td>
</tr>
<tr>
<td>Maximum Tilt (mm/m)</td>
<td>100</td>
</tr>
<tr>
<td>Maximum Hogging Curvature (km⁻¹)</td>
<td>&gt; 3.0</td>
</tr>
<tr>
<td>Maximum Sagging Curvature (km⁻¹)</td>
<td>&gt; 3.0</td>
</tr>
</tbody>
</table>


mm = millimetre.

mm/m = millimetres per metre.

km⁻¹ = per kilometre.
Predicted Subsidence from the South Bates Underground Mine

Source: Department of Lands (July 2009); WCPL (2016); WCPL Orthophoto (July 2016) and MSEC (2016)

Figure 4
6 RISK ASSESSMENT

A Subsidence Risk Assessment was undertaken to identify subsidence impacts with high risk levels and/or potentially severe consequences. A Subsidence Risk Assessment workshop was conducted in October 2016 for Longwalls 11 to 16. The workshop was facilitated by a risk assessment specialist and attended by relevant WCPL personnel and technical specialists (Operational Risk Mentoring, 2016). The Subsidence Risk Assessment is provided as Technical Report 4 of the Extraction Plan.

With the implementation of the proposed risk treatment measures, all of the potential loss scenarios were ranked “Moderate – as low as reasonably practicable” or “Low – broadly acceptable” by the risk assessment team (Operational Risk Mentoring, 2016).

7 ROLES AND RESPONSIBILITIES

The key responsibilities of WCPL personnel in relation to this BFMP are specified in the component plan of this BFMP. A summary WCPL organisation structure is provided in Figure 5. Contact details for key personnel are provided in Table 4.

Table 4
BFMP Key Personnel Contact Details

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Position</th>
<th>Contact Name</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>WCPL</td>
<td>Environment and Community Manager</td>
<td>Steven Peart (24 hours)</td>
<td>(02) 6570 2209</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0448 082 987</td>
</tr>
<tr>
<td></td>
<td>Control Room (24 hours)</td>
<td></td>
<td>(02) 6570 2240</td>
</tr>
<tr>
<td></td>
<td>General Manager</td>
<td>Albert Scheepers</td>
<td>(02) 6570 2330</td>
</tr>
<tr>
<td></td>
<td>Technical Services Manager</td>
<td>Tim Britten</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mining Engineering Manager (Underground Mine Manager)</td>
<td>Murray Wood</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community Hotline</td>
<td></td>
<td>(02) 6570 2245</td>
</tr>
<tr>
<td>NSW Mine Subsidence Board (MSB)</td>
<td>Emergency Service (24 hours)</td>
<td></td>
<td>1800 248 083</td>
</tr>
<tr>
<td></td>
<td>Singleton District Office – Manager</td>
<td>Richard Pickles</td>
<td>(02) 6572 4344</td>
</tr>
</tbody>
</table>

8 REPORTING FRAMEWORK

The reporting framework relevant to this BFMP is summarised in Table 5.
## Table 5
### Summary of Reporting Framework

<table>
<thead>
<tr>
<th>Report</th>
<th>Frequency</th>
<th>Distribution¹</th>
<th>Distribution Method</th>
<th>Responsibility for Data Collation and Preparation</th>
<th>Responsibility for Submission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsidence Management Status Report</td>
<td>To be updated fortnightly. Must be submitted if new impacts are identified or upon request.</td>
<td>DP&amp;E (Manager, Mining Projects) DRE (Subsidence Executive Officer)</td>
<td>Email</td>
<td>Technical Services Manager Environment and Community Manager</td>
<td>Technical Services Manager (in consultation with Mining Engineering Manager and Environment and Community Manager)</td>
</tr>
<tr>
<td>Six Monthly Report</td>
<td>Annual (for the period 1 January to 30 June)</td>
<td>DP&amp;E (Manager, Mining Projects) DRE (Subsidence Executive Officer) MSB (District Manager) OEH/EPA (General Contact) DPI Water (Manager Strategic Stakeholder Liaison)</td>
<td>Email</td>
<td>Environment and Community Manager</td>
<td>General Manager</td>
</tr>
<tr>
<td>Annual Review</td>
<td>Annual (for the period 1 January to 31 December)</td>
<td>DP&amp;E (Manager, Mining Projects) DRE (Subsidence Executive Officer) DRE (Director – Environmental Sustainability) MSB (District Manager) OEH/EPA (General Contact) DPI Water (Manager Strategic Stakeholder Liaison) Singleton Shire Council (General Manager) CCC Members</td>
<td>Email and Post</td>
<td>Environment and Community Manager</td>
<td>General Manager</td>
</tr>
</tbody>
</table>

¹ Distribution details are provided in Attachment 4 of the Extraction Plan.

**Notes:**
- DP&E – NSW Department of Planning and Environment.
- DRE – NSW Division of Resources and Energy.
- MSB – Mine Subsidence Board.
- DPI Water – Department of Primary Industries Water.
- CCC – Community Consultative Committee.
9 MANAGEMENT PLAN REVIEW

This BFMP and its component plan would be reviewed in detail, and revised if necessary, in the following circumstances:

- within three months of the submission of an Incident Report relating to a subsidence impact, (Section 4.2.1 of the Extraction Plan) taking into consideration any contingency response implemented following submission of the Incident Report (Section 4.2.1 of the Extraction Plan); and/or
- where there is a significant change in operation that may affect the environment or the community.

In addition to the above, this BFMP would also be reviewed within three months of:

- the submission of an Annual Review;
- the submission of an audit report; or
- any modification to the conditions of the Development Consent (DA 305-7-2003).

10 REFERENCES


ATTACHMENT 1

WCPL ASSET MANAGEMENT PLAN
LONGWALLS 11 – 16

INTERNAL MANAGEMENT PLAN
REFER TO SUMMARY IN EXTRACTION PLAN