WAMBO COAL PTY LIMITED

SOUTH BATES EXTENSION UNDERGROUND MINE

EXTRACTION PLAN
LONGWALLS 17 TO 20

APPENDIX E
BUILT FEATURES MANAGEMENT PLAN

Peabody

WAMBO COAL PTY LIMITED
SOUTH BATES EXTENSION UNDERGROUND MINE

BUILT FEATURES MANAGEMENT PLAN
LONGWALLS 17 - 20

PREPARED BY
WAMBO COAL PTY LIMITED AND
RESOURCE STRATEGIES PTY LTD

FEBRUARY 2019
Project No. WAM-09-15
Document No. 00954723

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

Document No.	BFMP LW17-20
Title	Built Features Management Plan for South Bates Extension Underground Mine Longwalls 17 to 20
General Description	Management of potential subsidence impacts and/or environmental consequences on all public infrastructure and all classes of other built features for mining of Longwalls 17 to 20 at the South Bates Extension Underground Mine

Revisions

Rev No	Date	Description	By	Checked
A	April 2018	Final for Submission	WCPL and Resource Strategies	P. Jaeger
B	February 2019	Change to Longwall Layout	WCPL and Resource Strategies	P. Jaeger

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 Extension Underground Mine is a component of the approved Wambo Coal Mine. The South Bates Extension Underground Mine ~~is scheduled to~~ commenced in Longwall 17 in December 2018 and involves extraction of coal by longwall mining methods from the Whybrow Seam within Coal Lease (CL) 397, Mining Lease (ML) 1594 and ML 1572 (**Figure 1**).

The potential environmental impacts of the existing Wambo Coal 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 17) to allow the development of the South Bates Extension Underground Mine (Longwalls 17 to 25) in the Whybrow Seam was approved in December 2017. The application was accompanied by the *South Bates Extension Modification Environmental Assessment* (WCPL, 2017).

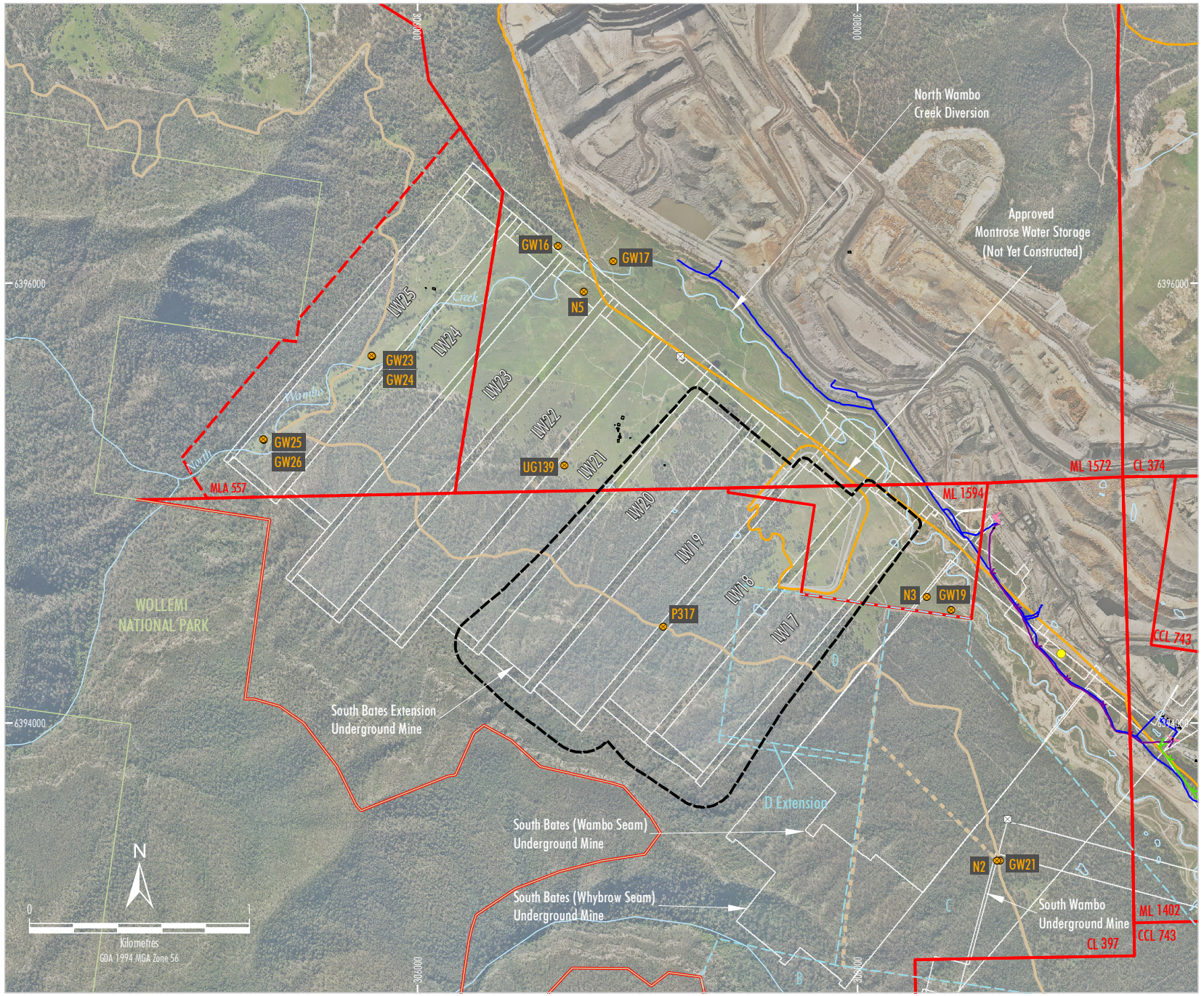
1.1 PURPOSE AND SCOPE

Purpose: This Built Features Management Plan (BFMP) for Longwalls 17 to 20 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 17 to 20 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 Extension Underground Mine Longwalls 17 to 20 Extraction Plan. This BFMP has been updated from the previous revision (Revision A) to incorporate a change to the layout of Longwalls 17 to 20.

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.



Source: NSW Department of Industry (2017); WCPL (2019, 2016)
Orthophoto: WCPL (May 2017)

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WAMBO COAL MINE

Location of Built Features

Figure 1

WAM-09-15_SBX_EP_LW17-20_BFMP_201C

1.2 ABBREVIATIONS AND ACRONYMS

BFMP	Built Features Management Plan	kV	kilovolt
CCC	Community Consultative Committee	ML	Mining Lease
CL	Coal Lease	MSEC	Mine Subsidence Engineering Consultants
DI-Water	Department of Industry – Water	NSW	New South Wales
DP&E	NSW Department of Planning and Environment	OEH	NSW Office of Environment and Heritage
EPA	NSW Environment Protection Authority	WAMP	WCPL Asset Management Plan
km	kilometre	WCPL	Wambo Coal Pty Limited

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 17 to 20 (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 17 to 20 Application Area does not intersect the Notification Area of any Prescribed Dam gazetted under the *Dams Safety Act, 1978* (**Figure 3**).

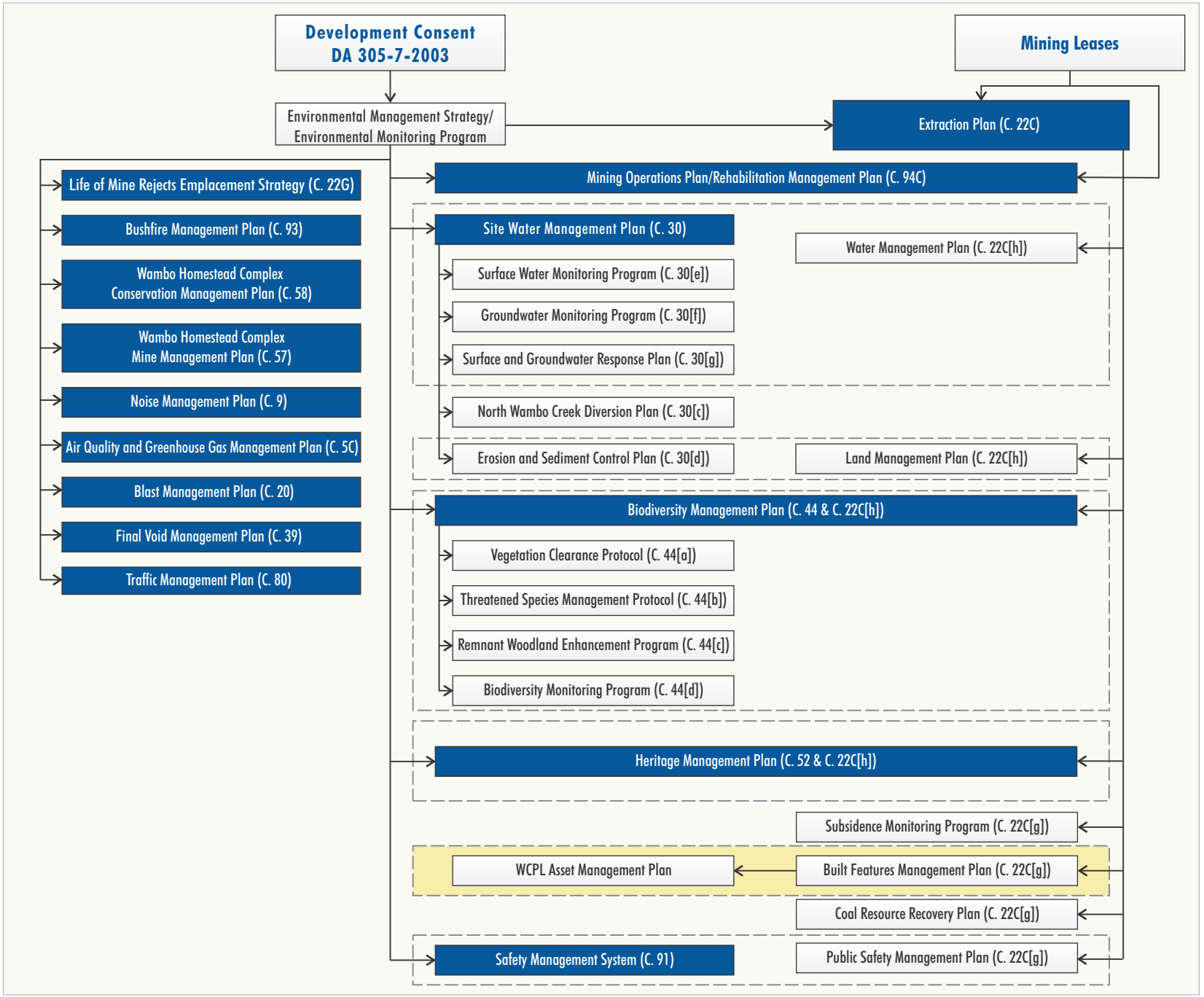
2 BUILT FEATURES

A number of WCPL-owned built features are located within, or in the vicinity of, the Longwalls 17 to 20 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 17 to 20 Application Area.

The Longwalls 17 to 20 Application Area is located wholly within the Patrick Plains Mine Subsidence District (proclaimed 2 July 1980 and revised on 7 July 2017). Wells, fences, gates and tracks are the only man-made structures in the Longwalls 17 to 20 Application Area known to have been constructed prior to declaration of the Mine Subsidence District.

The approved location for the Montrose Water Storage Dam is above the north-eastern end of Longwalls 17 to 19. The Montrose Water Storage Dam would not be constructed until after the completion of Longwalls 17 to 20.

The Longwalls 17 to 20 Application Area is wholly within WCPL-owned land and there are no relevant proposed developments within the Longwalls 17 to 20 Application Area proposed by other parties.



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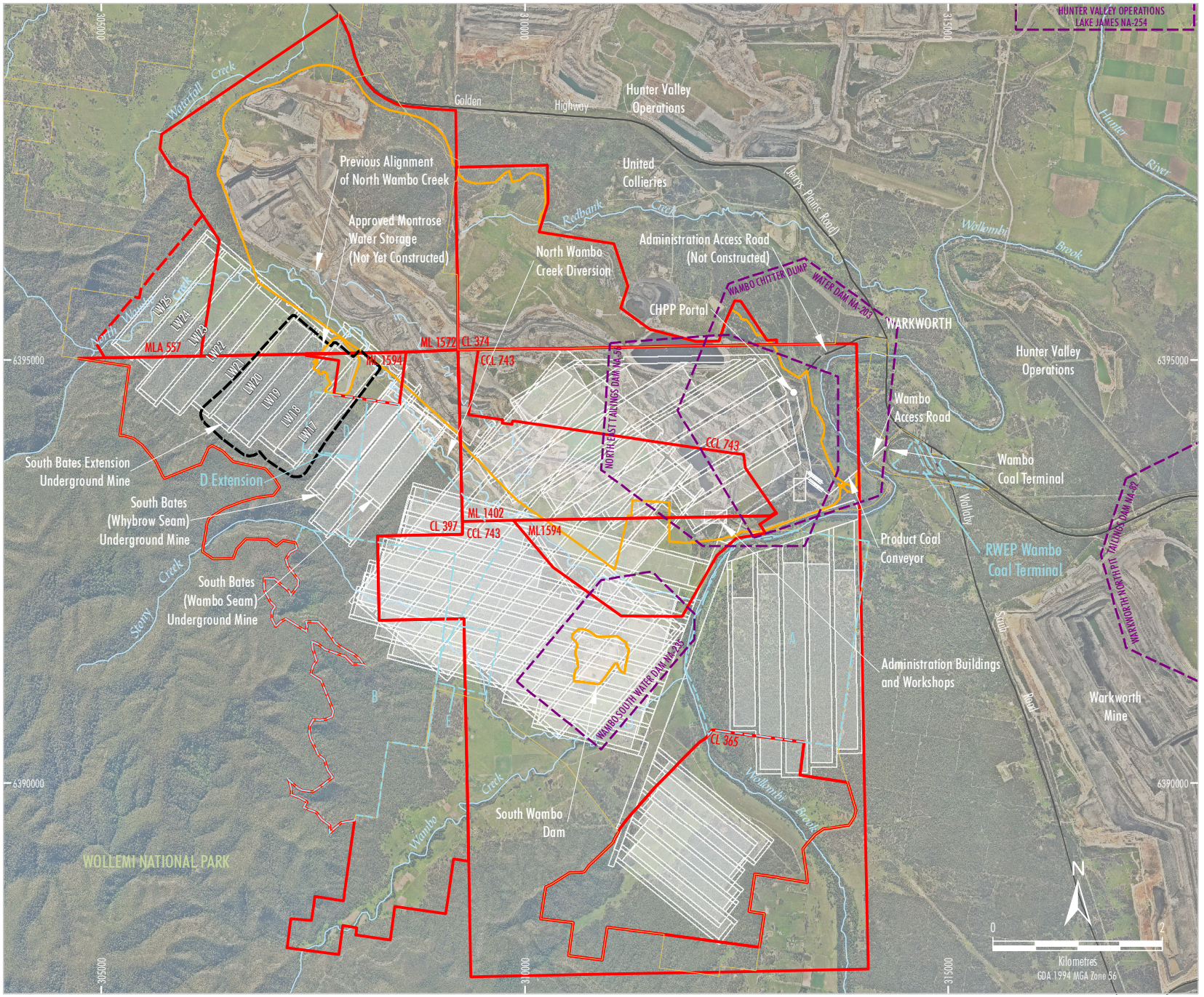
WAMBO COAL MINE

Wambo Coal Mine
Environmental Management System

Figure 2



LEGEND

- WCPL Owned Land
- Mining and Coal Lease Boundary
- Mining Lease Application Boundary
- Existing/Approved Surface Development Area
- Approved Underground Development
- Remnant Woodland Enhancement Program (RWEP) Area
- Extraction Plan Application Area
- Prescribed Dam Notification Area

Source: Department of Lands (2017); WCPL (2019)
Orthophoto: WCPL (May 2017)

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WAMBO COAL MINE

Notification Areas under the Dams Safety Act, 1978

Figure 3

WAM-09-15_SBX_EP_LW17-20_BFMP_202C

Table 1
Summary of Built Features within the Longwalls 17 to 20 Application Area

Built Feature	Relevant Stakeholder	Component Plan
Buried 11 kilovolt (kV) powerlines, telecommunication and fibre optic cables	WCPL	WAMP (**Attachment 1**)
Water supply pipelines and associated pumps and ancillary infrastructure	WCPL	WAMP (**Attachment 1**)
Montrose West Open Cut Pit walls and emplacement areas	WCPL	WAMP (**Attachment 1**)
Montrose Water Storage Dam	WCPL	-[1]
Exploration drill holes	WCPL	WAMP (**Attachment 1**)
Groundwater monitoring bore (P317)	WCPL	WAMP (**Attachment 1**)
Fences	WCPL	WAMP (**Attachment 1**)
Farm dams	WCPL	WAMP (**Attachment 1**)
Unsealed roads/tracks	WCPL	WAMP (**Attachment 1**)
Site access tracks/fire trails	WCPL	WAMP (**Attachment 1**)
Exploration plant that may be located in the area	WCPL	WAMP (**Attachment 1**)
Drainage culverts	WCPL	WAMP (**Attachment 1**)
North Wambo Creek Diversion	WCPL	-[2]

[1] The approved location for the Montrose Water Storage Dam is above the north-eastern ends of Longwalls 17 to 19. The Montrose Water Storage Dam would not be constructed until after the completion of Longwalls 17 to 20.

[2] The North Wambo Creek Diversion is managed separately in accordance with the Water Management Plan for Longwalls 17 to 20.

There is one State survey control mark ~~within~~ in the vicinity of the Longwalls 17 to 20 Application Area, located ~~above~~ to the north-west of the maingate of Longwall 20 (MSEC, 2018). Under the *Surveying and Spatial Information Act, 2002*, survey marks cannot be displaced or damaged without a relevant authorisation. WCPL will manage the impacts of mine subsidence on this survey mark in consultation with NSW Spatial Services, including lodging a relevant application under the *Surveying and Spatial Information Regulation, 2017* as required by the *Surveyor-General's Direction No. 11 Preservation of Survey Infrastructure*.

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

Feature	Subsidence Impact Performance Measure
All built features	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.

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

In accordance with Conditions 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 17 to 20 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 17 to 20 against the performance indicators for the performance measures for built features will 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 DRG[1]. DRG may seek the advice of the MSB on the matter. Any decision by DRG 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 17 to 20 Application Area are addressed in Attachment 1 of the Extraction Plan.

5 SUBSIDENCE PREDICTIONS

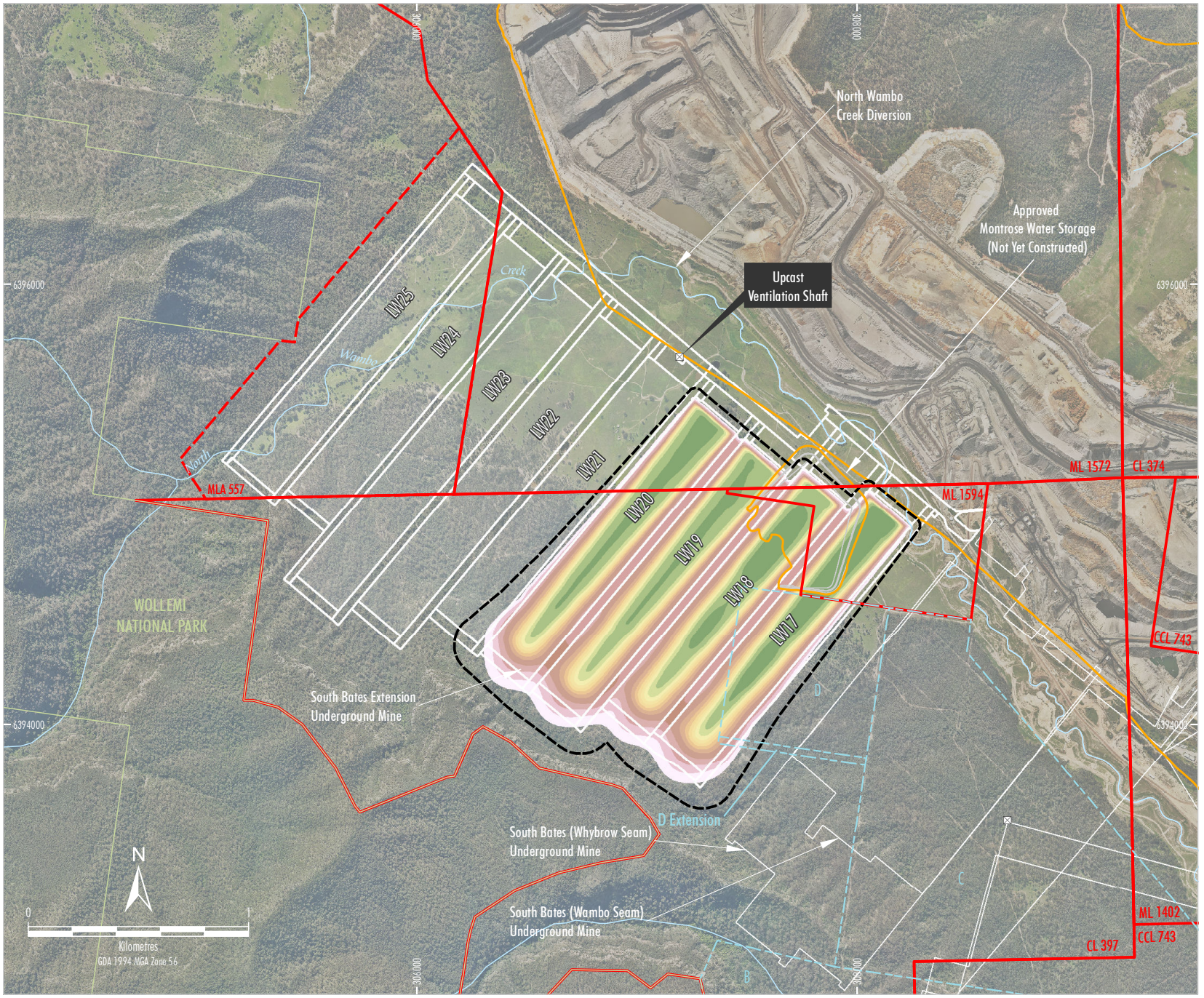
Predictions of subsidence effects for Longwalls 17 to 20 were developed by MSEC (2018, 2019). The maximum subsidence, tilts and curvatures predicted for Longwalls 17 to 20 are summarised in **Table 3** and the location of predicted subsidence is presented in **Figure 4**.

Table 3
Maximum Predicted Subsidence, Tilt and Strains for Longwalls 17 to 20

Subsidence Parameter	Maximum Values Predicted Anywhere Above the Longwalls
Maximum Subsidence (mm)	1,950
Maximum Tilt (mm/m)	70
Maximum Hogging Curvature (km^{-1})	> 3.0
Maximum Sagging Curvature (km^{-1})	> 3.0

Source: MSEC (2018, 2019).
mm = millimetre.
mm/m = millimetres per metre.
km^{-1} = per kilometre.

[1] DRG (NSW Department of Planning and Environment – Division of Resources and Geoscience) is now NSW Resources Regulator.



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Predicted Subsidence from the South Bates Extension Underground Mine

Figure 4

WAM-09-15_SBX_EP_LW17-20_BFMP_203B

6 RISK ASSESSMENT

A Subsidence Risk Assessment for Longwalls 17 to 20 was undertaken to identify subsidence impacts with high risk levels and/or potentially severe consequences, including a workshop conducted in February 2018. The workshop was facilitated by a risk assessment specialist and attended by relevant WCPL personnel and technical specialists (Operational Risk Mentoring, 2018). The Subsidence Risk Assessment is provided as Technical Report 4 of the Extraction Plan.

With the implementation of the identified controls, the risk assessment team consensus was that subsidence related impacts over Longwalls 17 to 20 could be managed at a tolerable level of risk (Operational Risk Mentoring, 2018).

7 ROLES AND RESPONSIBILITIES

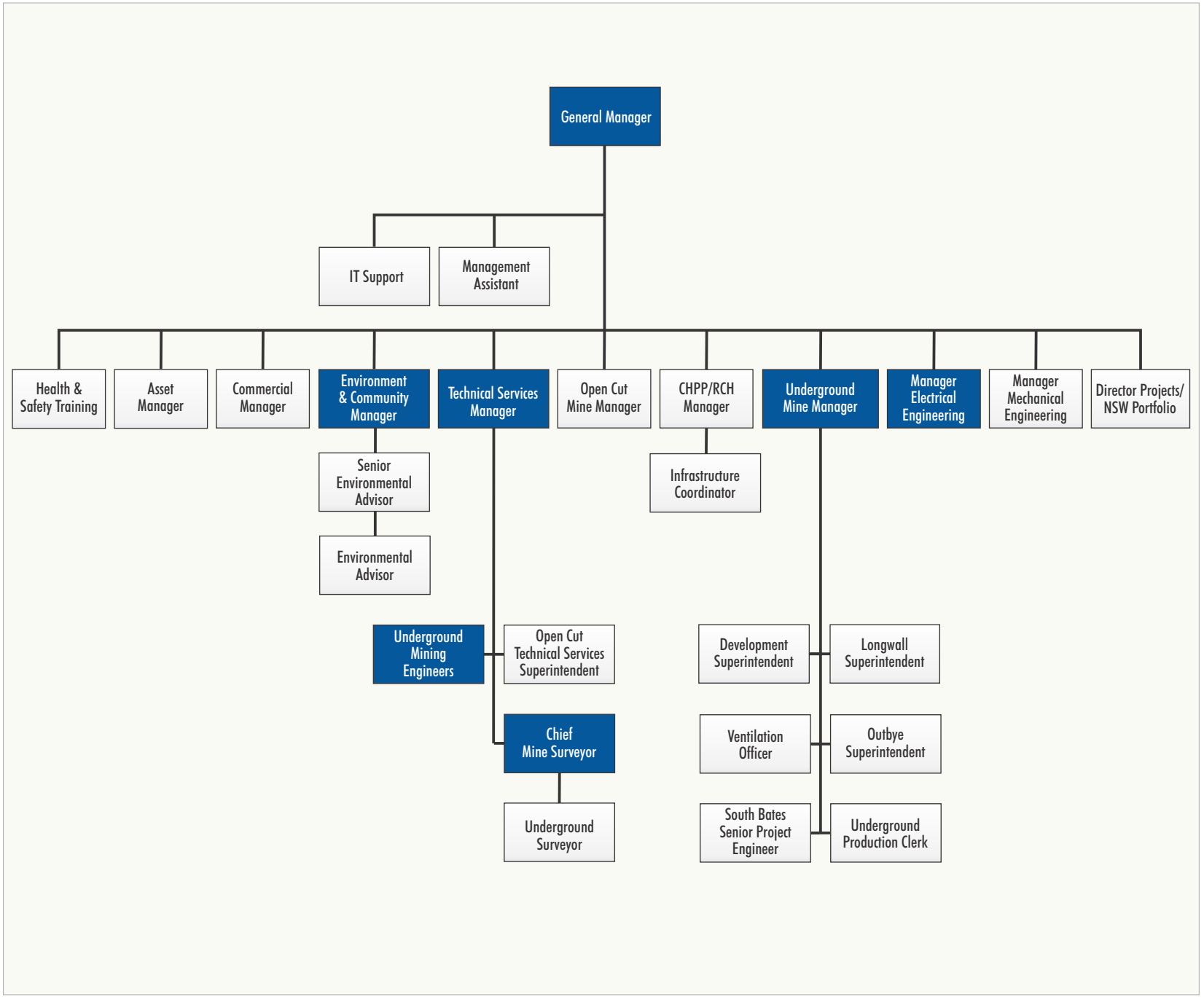
The key responsibilities of WCPL personnel in relation to this BFMP are specified in the component plan of this BFMP. A summary WCPL organisation structure is provided in **Figure 5**. Contact details for key personnel are provided in **Table 4**.

Table 4
BFMP Key Personnel Contact Details

Organisation	Position	Contact Name	Phone Number
WCPL	**Environment and Community Manager ~~(Acting)~~**	**Peter Jaeger**	**(02) 6570 2206**
	Control Room (24 hours)		**(02) 6570 2240**
	General Manager	Albert Scheepers	(02) 6570 2330
	Technical Services Manager	Michael Berry	
	Mining Engineering Manager (Underground Mine Manager) ~~(Acting)~~	David Gibson	
	Community Hotline		(02) 6570 2245
Subsidence Advisory NSW	Emergency Service (24 hours)		1800 248 083
	Newcastle District Office		(02) 4908 4300

8 REPORTING FRAMEWORK

The reporting framework relevant to this BFMP is summarised in **Table 5**.



LEGEND

Key personnel responsible for implementation of the Extraction Plan

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WCPL Organisation Structure

Figure 5

Table 5
Summary of Reporting Framework

Report	Frequency	Distribution[1]	Distribution Method[1]	Responsibility for Data Collation and Preparation	Responsibility for Submission
Subsidence Management Status Report	To be updated fortnightly. Must be submitted if new impacts are identified or upon request.	DP&E (Manager, Mining Projects) NSW Resources Regulator (Subsidence Executive Officer)	Email	Technical Services Manager Environment and Community Manager	Technical Services Manager (in consultation with Mining Engineering Manager and Environment and Community Manager)
Six Monthly Report	Annual (for the period 1 January to 30 June)	DP&E (Manager, Mining Projects) NSW Resources Regulator (Subsidence Executive Officer) Subsidence Advisory NSW (District Manager) OEH/EPA (General Contact) DI-Water (Water Regulation)	Email	Environment and Community Manager	General Manager
Annual Review	Annual (for the period 1 January to 31 December)	DP&E (Manager, Mining Projects) NSW Resources Regulator (Subsidence Executive Officer) NSW Resources Regulator (Manager Environmental Sustainability) Subsidence Advisory NSW (District Manager) OEH/EPA (General Contact) DI-Water (Water Regulation) Singleton Shire Council (General Manager) CCC Members	Email and/or Post	Environment and Community Manager	General Manager

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

Notes: DP&E – NSW Department of Planning and Environment.

~~DRG – NSW Department of Planning and Environment - Division of Resources and Geoscience.~~

OEH/EPA – NSW Office of Environment and Heritage/NSW Environment Protection Authority.

DI-Water – Department of Industry – Water.

CCC – Community Consultative Committee.

9 MANAGEMENT PLAN REVIEW

This BFMP and its component plan will 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 will 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

Mine Subsidence Engineering Consultants (2018) *South Bates Extension Subsidence Assessment – Subsidence Predictions and Impact Assessments for the Natural and Built Features in Support of the Extraction Plan Application for the South Bates Extension WYLW17 to WYLW20.* Report prepared for Wambo Coal Pty Limited.

Mine Subsidence Engineering Consultants (2019) *South Bates Extension Subsidence Assessment – The Effects of the Modified Finishing Ends of Whybrow Longwalls 17 to 20 on the Subsidence Predictions and Impact Assessments for the Natural and Built Features in Support of an Application to Amend the Extraction Plan.* Report prepared for Wambo Coal Pty Limited.

Operational Risk Mentoring (2018) *South Bates Extension Underground Mine – Longwalls 17 to 20 Subsidence Risk Assessment Report*. Report prepared for Wambo Coal Pty Limited.

Wambo Coal Pty Limited (2003) *Wambo Development Project Environmental Impact Statement.*

Wambo Coal Pty Limited (2017) *South Bates Extension Modification Environmental Assessment.*

ATTACHMENT 1

WCPL ASSET MANAGEMENT PLAN
LONGWALLS 17 – 20

WAMBO COAL PTY LIMITED
SOUTH BATES EXTENSION UNDERGROUND MINE

WCPL ASSET MANAGEMENT PLAN
LONGWALLS 17 - 20

PREPARED BY
WAMBO COAL PTY LIMITED AND
RESOURCE STRATEGIES PTY LTD

FEBRUARY 2019
Project No. WAM-09-15
Document No. 00954724

DOCUMENT CONTROL

Document No.	WAMP LW17-20
Title	WCPL Asset Management Plan for South Bates Extension Underground Mine Longwalls 17 to 20
General Description	Management of potential subsidence impacts and environmental consequences on Wambo Coal Pty Limited assets for mining of Longwalls 17 to 20 at the South Bates Extension Underground Mine.

Revisions

Rev No	Date	Description	By	Checked
A	April 2018	Final for Submission	WCPL and Resource Strategies	P. Jaeger
B	February 2019	Change to Longwall Layout	WCPL and Resource Strategies	P. Jaeger

The nominated Coordinator for this document is	Technical Services Manager

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1 INTRODUCTION

The South Bates Extension Underground Mine is a component of the approved Wambo Coal Mine. The South Bates Extension Underground Mine ~~is scheduled to~~ commenced in Longwall 17 in December 2018 and involves extraction of coal by longwall mining methods from the Whybrow Seam within Coal Lease (CL) 397, Mining Lease (ML) 1594 and ML 1572 (**Figure 1**).

1.1 PURPOSE AND SCOPE

Purpose: This WCPL Asset Management Plan for Longwalls 17 to 20 (WAMP) outlines the management of potential subsidence impacts on WCPL assets.

Scope: This WAMP covers WCPL assets within the Longwalls 17 to 20 Application Area (**Figure 1**).

This WAMP is a component of the Built Features Management Plan for Longwalls 17 to 20, which is part of the South Bates Extension Underground Mine Longwalls 17 to 20 Extraction Plan (**Figure 2**). This WAMP has been updated from the previous revision (Revision A) to incorporate a change to the layout of Longwalls 17 to 20.

WCPL assets are identified in **Section 2** and relevant management measures are outlined in **Section 5**.

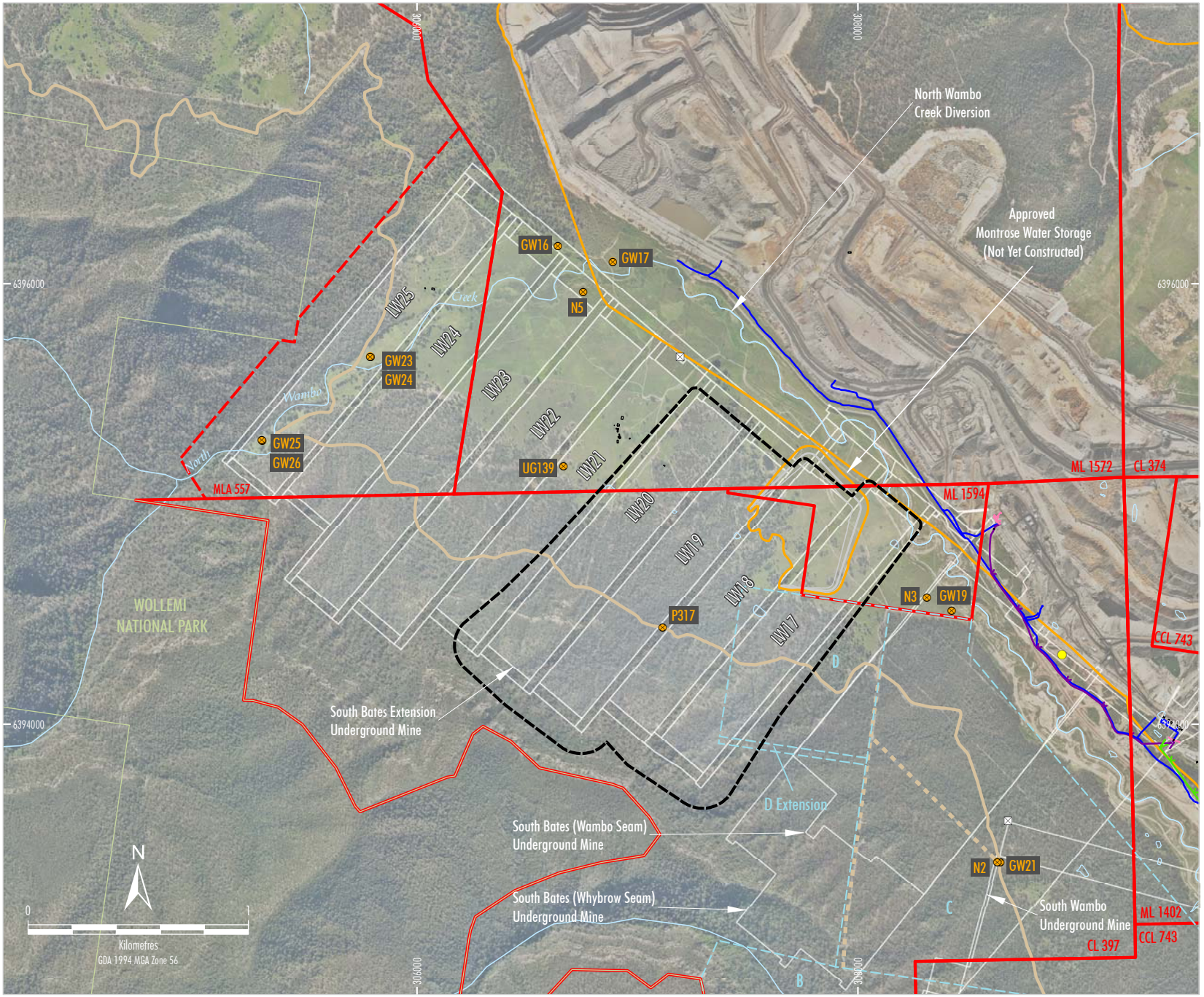
Attachment 1 provides a **Trigger Action Response Plan** for this WAMP which is a simple and transparent snapshot of the monitoring of subsidence impacts and where required the implementation of management and/or contingency measures.

2 WCPL ASSETS

The WCPL assets located within the Longwalls 17 to 20 Application Area are shown on **Figure 1** and include:

- Buried 11 kilovolt (kV) powerlines, telecommunication and fibre optic cables.
- Water supply pipelines and associated pumps and ancillary infrastructure.
- Montrose West Open Cut Pit walls and emplacement areas.
- Montrose Water Storage Dam (not yet constructed).
- Exploration drill holes.
- Groundwater monitoring bore (P317).
- Fences.
- Farm dams.
- Unsealed roads/tracks.
- Site access tracks.
- Exploration plant that may be located in the area.
- Drainage culverts.
- North Wambo Creek Diversion (covered by the Water Management Plan).

The North Wambo Creek Diversion and its associated monitoring, management and mitigation strategies are discussed in the Water Management Plan (Appendix A) for the South Bates Extension Underground Mine Longwalls 17 to 20 Extraction Plan.



Source: NSW Department of Industry (2017); WCPL (2019, 2016)
Orthophoto: WCPL (May 2017)

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WAMBO COAL MINE

Location of Built Features

Figure 1

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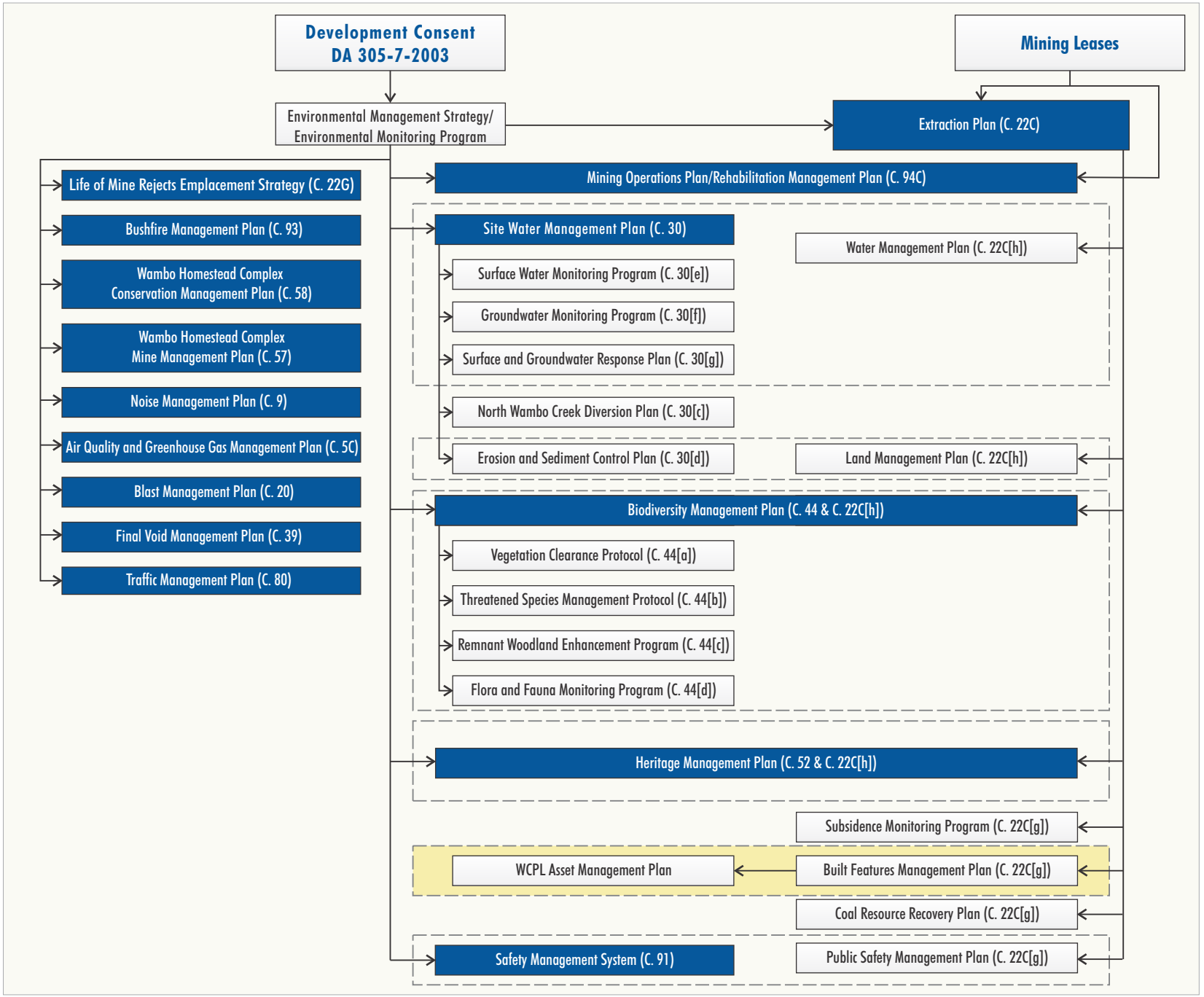

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WAMBO COAL MINE

Wambo Coal Mine
Environmental Management System

Figure 2

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 1**. 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 Table 14A and 14B.

Table 1
Built Features Performance Measures

Feature	Subsidence Impact Performance Measure
All built features	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.

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

Section 4 outlines the monitoring that will be undertaken to assess the impact of Longwalls 17 to 20 against the performance measures in relation to WCPL assets. **Section 5** outlines management measures that will be employed for WCPL assets. Performance indicators for the performance measures are summarised in **Section 6**.

4 MONITORING

4.1 SUBSIDENCE MONITORING PROGRAM

A monitoring program will be developed in order to monitor the impacts of the extraction of Longwalls 17 to 20 on WCPL assets to identify unsafe conditions or loss of serviceability during or after mining. Key components of the monitoring program are summarised in **Table 2**.

Table 2
WAMP Monitoring Program Overview

WCPL Asset	Monitoring Component	Parameter	Timing/Frequency	Responsibility
Pre-mining				
All	Initial visual assessment of WCPL assets.	Initial condition of WCPL assets.	Prior to secondary extraction within 1,000 metres (m) of WCPL assets.	Mine Surveyor
During Mining				
All	Longwalls 17 to 20 subsidence monitoring lines as described in the Subsidence Monitoring Program.	Monitoring parameters include: • subsidence; • tilt; • tensile strain; • compressive strain; and • absolute horizontal translation.	Refer to **Subsidence Monitoring Program** (Appendix H of the Extraction Plan for Longwalls 17 to 20).	Mine Surveyor

Table 2 (Continued)
WAMP Monitoring Program Overview

WCPL Asset	Monitoring Component	Parameter	Timing/Frequency	Responsibility
During Mining (Continued)				
Active service lines[1]	Visual inspections of WCPL active service lines.	The general condition of WCPL active service lines including safety and serviceability.	Daily inspections commencing when secondary extraction is within 100 m of WCPL active service lines and undertaken until the active mining face is 100 m past the line.	Infrastructure Coordinator
Roads and tracks	Visual inspections of roads and tracks.	Monitoring parameters include: • surface cracks; • buckling; and • general safety.	Prior to secondary extraction within 100 m of any WCPL asset and undertaken at 50 m intervals until the active mining face is 100 m past the WCPL asset.	Mine Surveyor
Mine dewatering and water supply pipelines	Monitoring of WCPL pipeline integrity.	Monitoring of pipelines at fixed points.	Daily inspections commencing when secondary extraction is within 100 m of WCPL pipelines and undertaken until the active mining face is 100 m past the pipeline.	Infrastructure Coordinator
	Flow monitoring.	Monitoring to detect abnormal changes in flow.	Continuous (SCADA) monitoring of pump and pipeline conditions.	Infrastructure Coordinator
Culverts	Integrity of culverts.	Cracking of concrete culverts or grade reversal.	Prior to secondary extraction within 100 m of culverts and undertaken at 50 m intervals until the active mining face is 100 m past the culverts.	Infrastructure Coordinator
All	Visual inspections of other WCPL assets.	The general condition of WCPL assets including safety and serviceability.	Monthly inspection during secondary extraction of Longwalls 17 to 20.	Mine Surveyor

[1] Active service lines include all services required for mining at the Wambo Coal Mine (electricity supply, telecommunications, water supply and mine dewatering).

4.2 SUBSIDENCE CONSEQUENCES MONITORING

WCPL will compare the results of the subsidence impact monitoring against the built features performance measures and performance indicators. In the event the observed subsidence impacts exceed the performance measures or indicators, WCPL will assess the consequences of the exceedance in accordance with the Contingency Plan described in **Section 7**.

5 MANAGEMENT MEASURES

A number of management measures are applicable to WCPL assets. The key management measures are summarised in **Table 3**.

Table 3
WAMP Key Management Measures

Management Measure	Timing/Frequency	Responsibility
Pre-mining		
Structural assessment of WCPL assets to identify modifications potentially required pre-subsidence.	Structural assessment and any identification of modifications required will be undertaken prior to secondary extraction within 1,000 m of WCPL assets.	Underground Mining Engineer
Posting of **warning signs** at suitable locations on unsealed roads and site access tracks.	Prior to secondary extraction of each longwall.	Technical Services Manager
Notification to electrical engineer in charge prior to subsidence effects on WCPL powerlines.	Prior to secondary extraction within 100 m of a power line.	Technical Services Manager
Notification to Open Cut Examiner prior to subsidence effects on access roads.	Prior to secondary extraction within 100 m of an access road.	Technical Services Manager
Assessment of water pipelines and **provision of sufficient slack in pipelines** for subsidence.	Prior to secondary extraction within 100 m of pipeline.	Infrastructure Coordinator
Assessment of bores and decommission and seal prior to extraction if required (dependent on condition).	Prior to secondary extraction of each longwall.	Technical Services Manager
During Mining		
Maintain **safe access** to WCPL assets such that WCPL personnel are able to undertake routine maintenance and remediation works as required.	During secondary extraction of Longwalls 17 to 20. Regular inspection when undermining (internal notification process for any significant impacts observed by WCPL personnel).	Underground Mining Engineer
Communication protocols to ensure interaction between underground and surface operations.	Weekly meetings.	Infrastructure Coordinator
WCPL **internal longwall panel status reports** to ensure internal WCPL stakeholders are aware of the longwall progression and are able to provide sufficient notification to relevant WCPL personnel regarding potential subsidence impacts to WCPL assets.	WCPL personnel to conduct fortnightly reports during secondary extraction of Longwalls 17 to 20. WCPL personnel to send weekly status and aerial photo to the relevant internal stakeholders.	Mine Surveyor
Provision of a 15 m **separation barrier around the Montrose West pit walls**.	Always.	Technical Services Manager

Table 3 (Continued)
WAMP Key Management Measures

Management Measure	Timing/Frequency	Responsibility
Post-mining		
Update **warning signs** if a change to the WCPL asset is identified during monitoring described in **Table 2**.	If change detected. Full review following completion of active mining.	Technical Services Manager
Repair of WCPL assets in accordance with associated standards and procedures.	As required.	Infrastructure Coordinator
Structural assessment of WCPL assets and subsidence assessment post-Longwalls 17 to 20 extraction.	Following completion of active mining.	Technical Services Manager

6 ASSESSMENT OF PERFORMANCE INDICATORS AND MEASURES

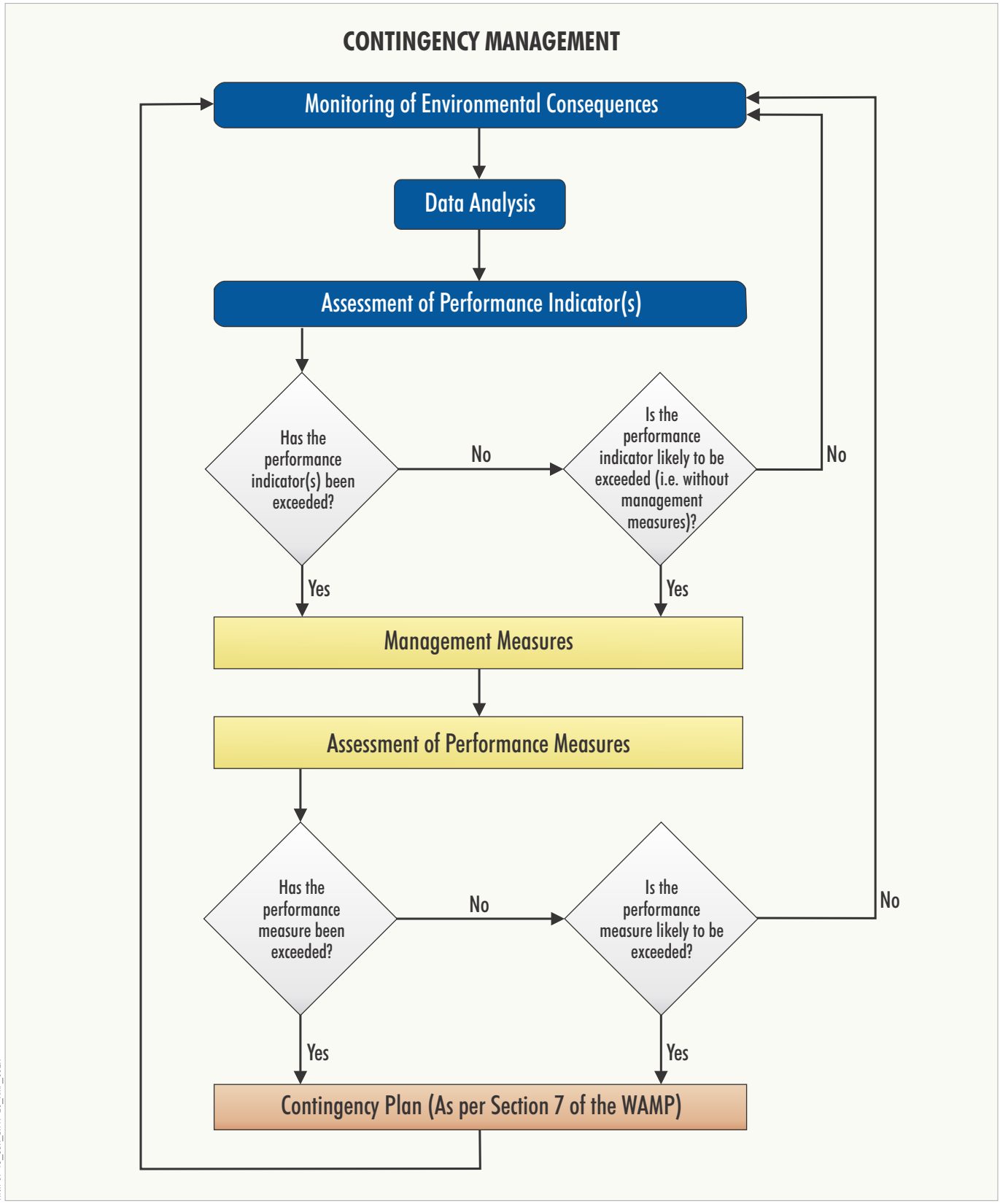
In accordance with Condition 22C(d) of Schedule 4 of the Development Consent (DA 305-7-2003), performance indicators have been developed for the performance measures listed in **Table 1**.

The proposed performance indicators for the built features performance measures will be considered to have been exceeded if:

- the **structural integrity** of any WCPL asset is assessed to have been compromised;
- the **functionality** of any WCPL powerlines, cables or pipelines is compromised; or
- the **integrity of access roads** required for the serviceability of WCPL assets is not maintained.

Monitoring conducted to inform the assessment of the secondary extraction of Longwalls 17 to 20 against the performance indicators for the performance measures relevant to WCPL assets is outlined in **Section 4** of this WAMP. The monitoring process and subsequent assessment of performance indicators and measures is outlined in **Figure 3**.

If a performance measure is considered to have been exceeded, the Contingency Plan outlined in **Section 7** of this WAMP will be implemented.



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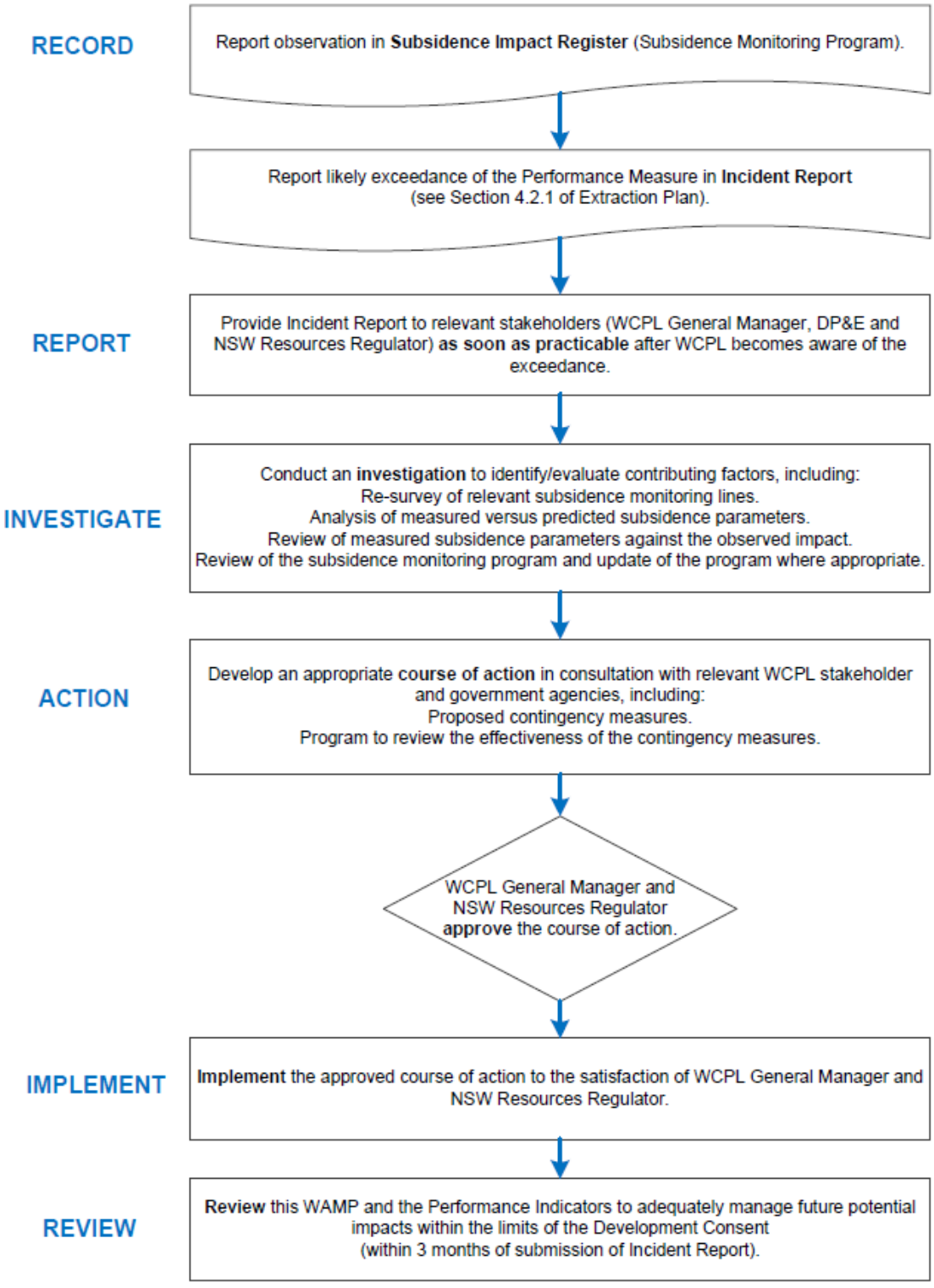
WAMBO COAL MINE

Monitoring of Environmental Consequences against Performance Indicators and Measures

Figure 3

7 CONTINGENCY PLAN

In the event the built features performance measures summarised in **Table 1** are considered to have been exceeded or are likely to be exceeded, in accordance with the schematic presented in **Figure 3**, WCPL will implement the following Contingency Plan:



Note: DP&E = NSW Department of Planning and Environment
~~DRG = NSW Department of Planning and Environment - Division of Resources and Geoscience~~

8 ROLES AND RESPONSIBILITIES

Key responsibilities of WCPL personnel in relation to this WAMP are summarised in **Table 4**. Responsibilities may be delegated as required.

Table 4
WAMP Responsibilities Summary

Responsibility	Task
General Manager	• Ensure resources are available to WCPL personnel to facilitate the completion of responsibilities under this WAMP.
Mining Engineering Manager (Underground Mine Manager)	• Ensure resources are available to WCPL personnel to facilitate the completion of responsibilities under this WAMP.
Technical Services Manager	• Ensure timely and accurate Subsidence Management Status Reporting under this WAMP. • Ensure the Subsidence Monitoring Program and this WAMP are implemented. • Ensure monitoring and Subsidence Management Status Reports required under the Subsidence Monitoring Program and this WAMP are: carried out within specified timeframes; adequately checked and processed; and are prepared to the required standard.
Infrastructure Coordinator	• Ensure site services are maintained in a safe and serviceable condition.
Environment and Community Manager	• Liaise with relevant stakeholders regarding subsidence impact management and related environmental consequences. • Ensure Incident Reports and Subsidence Management Status Reports required under this WAMP are prepared within specified timeframes and to the required standard.
Underground Mining Engineer	• Undertake relevant monitoring and implementation of management measures summarised in **Tables 2 and 3** respectively.
Mine Surveyor	• Undertake all subsidence monitoring to the required standard within the specified timeframes and ensure data are adequately checked, processed and recorded.

ATTACHMENT 1

WCPL ASSET MANAGEMENT PLAN TRIGGER ACTION RESPONSE PLAN

Table A-1
WCPL Asset Management Plan Trigger Action Response Plan

Condition	Normal Predicted Impacts	Level 1 Implement Management Measures	Level 2 Restoration/Contingency Phase
Trigger	• Subsidence effects on WCPL assets.	• Management measures implemented (with regard to the specific circumstances of the subsidence impact [e.g. the nature and extent of the impact] in accordance with **Section 5**).	• If the Performance Measure relevant to WCPL assets has been exceeded, or is likely to be exceeded (i.e. loss of safety or serviceability).
Action	• Conduct monitoring, consistent with **Section 4** and the Subsidence Monitoring Program (Appendix H of the Extraction Plan for Longwalls 17 to 20). • Implement management measures, as required, in accordance with **Section 5**.	• Implement management measures, as required, in accordance with **Section 5**.	• Implement Contingency Plan described in **Section 7**.
Frequency	• Monitoring frequency consistent with **Section 4**.	• As required, in accordance with **Section 5**.	• As required, in accordance with **Section 7**.
Position of Decision Making	• Technical Services Manager.	• Technical Services Manager. • Mining Engineering Manager (Underground Mine Manager).	• General Manager.

Note: WCPL refers to Wambo Coal Pty Limited.