Maules Creek Rehabilitation Management Plan

Edition	Rev.	Comments	Author	Authorised By	Date
1	1	Initial RMP	MCCM and IEMA	MCCM	July 2022
2	1	Updated RMP based on approved Rehabilitation outcome documents	MCCM and IEMA	MCCM	November 2023
3	1	Updated following Ecosystem TAP by RR	MCCM	MCCM	February 2025
3	2	Address stakeholder consultation	MCCM	MCCM	October 2025
3	3	Updated following surface water and groundwater TAP by RR	MCCM	MCCM	May 2026

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Summary Table

Name of mine		Maules Creek Coal Mine	
Rehabilitation Management Plan commencement date		July 2022	
Rehabilitation Management Plan revision dates and version numbers		Version 3.3, May 2026	
Mining leases	Leaseholder	No	Expiry
	Maules Creek JV	CL 375	4 June 2033
		ML 1719	11 November 2036
		ML 1701	9 October 2035

1. INTRODUCTION TO MINING PROJECT

1.1 History of Operations

Maules Creek Coal Mine (MCCM) is located in the north-western slopes of New South Wales (NSW) approximately 18 kilometres (km) north-east of Boggabri in the Narrabri Local Government Area (LGA). The regional centres of Narrabri and Gunnedah are situated approximately 45 km to the north-west and 55 km to the south of MCCM respectively.

MCCM is currently owned and operated by Maules Creek Coal Pty Ltd (MCC), which is a joint venture between Aston Coal 2 Pty Ltd (a wholly owned subsidiary of Whitehaven (75%)), ITOCHU Coal Resources Australia Maules Creek Pty Ltd (a wholly owned subsidiary of Itochu Corporation (15%)) and J-Power Australia Pty Ltd (a wholly owned subsidiary of Electric Power Development Company (10%)).

On 23 October 2012, the NSW Planning Assessment Commission (PAC), as a delegate for the NSW Minister for Planning and Infrastructure, issued approval for the MCCM under Project Approval PA 10_0138. The Commonwealth Minister for Sustainability, Environment, Water, Population and Communities granted the MCCM Commonwealth environmental approval, Environment Protection and Biodiversity Conservation (EPBC) 2010/5566 on 11 February 2013. The environmental approvals for MCCM allow for the construction and operation of an open cut mine until 31 December 2034.

Construction operations commenced in December 2013 and was substantially completed in 2015. The operational phase of the project commenced in June 2014 and the first coal was railed from the MCCM in December of that year.

Updates are provided for areas of rehabilitation performance (hectares) and rehabilitation monitoring within the Annual Review and the Annual Rehabilitation Report and Forward Program.

This rehabilitation management Plan has been prepared to meet the requirements of NSW Mining Regulation 2016 Schedule 8A. The Plan has been prepared in accordance with the NSW Resources Regulator Form and Way Document.

1.2 Current Development Consents, Leases and Licences

Table 1 provides a summary of all development consents, leases and licences relevant to MCCM operations.

Table 1: Consents, Authorisations and Licences

Approval	Description	Consent Authority	Date Granted	Expiry Date
Project Approval PA 10_0138	Pursuant to the Project EA, the PAC approval of the MCCM referred to in Schedule 1 subject to the conditions in Schedules 2 to 5.	Planning Assessment Commission of NSW	23 October 2012	31 December 2034
Project Approval PA 10_0138 (MOD 1)	Pursuant to the Maules Creek Project Approval Modification Environmental Assessment, the Modification was granted to allow modifications to infrastructure requirements.	Planning Assessment Commission of NSW	25 July 2013	31 December 2034
Project Approval PA 10_0138 (MOD 2)	Pursuant to the Maules Creek Project Approval Modification Environmental Assessment, the Modification was granted to allow the design of key water related infrastructure to be optimized.	Planning Assessment Commission of NSW	10 March 2014	31 December 2034

Approval	Description	Consent Authority	Date Granted	Expiry Date
Project Approval PA 10_0138 (MOD 3)	Pursuant to the Maules Creek Project Approval Modification Environmental Assessment, the Modification was granted to all ow adjustment to transport conditions.	Planning Assessment Commission of NSW	13 January 2017	31 December 2034
Project Approval PA 10_0138 (MOD 5)	Pursuant to the Maules Creek Project Approval Modification Environmental Assessment, the Modification was granted to allow ongoing use of the Olivedene pipeline and associated infrastructure.	Planning Assessment Commission of NSW	20 December 2019	31 December 2034
Project Approval PA 10_0138 (MOD 6)	Pursuant to the Maules Creek Modification Environmental Assessment, the Modification was granted to allow ongoing use of the Roma and Brighton pipeline and associated infrastructure.	Planning Assessment Commission of NSW	20 December 2019	31 December 2034
Project Approval PA 10_0138 (MOD 7)	Pursuant to the Maules Creek Modification Environmental Assessment, the Modification was granted to allow an extended footprint of the Northern Emplacement and an increase to the height of a section of the Northern Emplacement area.	Planning Assessment Commission of NSW	24 August 2021	31 December 2034
Project Approval PA 10_0138 (MOD 8)	Pursuant to the Maules Creek Modification Environmental Assessment, the Modification was granted to allow the use of crushing and sizing equipment and the burial of tyres in the waste rock emplacement areas.	Planning Assessment Commission of NSW	14 January 2022	31 December 2034
Project Approval PA 10_0138 (MOD 9)	Pursuant to the Maules Creek Modification Environmental Assessment, the Modification was granted to allow for changes to the existing biodiversity offset strategy and the construction and use of an electricity transmission line to the Roma Bore.	Planning Assessment Commission of NSW	20 March 2024	December 2034

Approval	Description	Consent Authority	Date Granted	Expiry Date
Coal Lease CL 375	Covers an area of approximately 4,200 ha. The southern part of the lease covers rights to mien from the surface to unlimited depth (~2,500 ha). The northern part of the lease covers rights to mine from 20 meter (m) depths to unlimited depth (~1,700 ha).	Resources Regulator	4 Jun 1991	4 June 2033
AUTH 346	Covers the rights of the northern part of CL 375 from the surface to 20 m depth (~1,700 ha).	Resources Regulator	28 February 1984	28 February 2028
Mining Lease ML 1719	Covers the area to the north of the surface rights of CL 375, over a portion of AUTH 346 that will accommodate part of the Northern Overburden Emplacement Area (OEA) for the MCCM.	Resources Regulator	11 Nov 2015	11 November 2036
Mining Lease ML 1701	Covers the area to the west of CL 375 within the Project Boundary that will facilitate the extraction of some coal and accommodate some mine related infrastructure.	Resources Regulator	9 Oct 2014	9 October 2035
Exploration Licence EL8072	Covers the area to the west of ML 1701 that will facilitate the extraction of some coal and accommodate some mine related infrastructure.	Resources Regulator	31 October 2023	12 March 2026
Environment Protection Licence EPL 20221	The NSW Environment Protection Authority (EPA) issues environment protection licenses to the owners or operators of various industrial premises under the Protection of the Environment Operations Act, 1997 (POEO Act).	NSW EPA	2 May 2013	Continuing

1.3 Land Ownership and Land Use

The MCCM is partially located within the Leard State Forest, which has historically been used for forestry, recreation, and mining related activities (including biodiversity offsets). Other MCCM owned land has been historically used for cattle grazing. Land use in the local area include agricultural operations, open cut mining, and residential holdings. The Namoi River alluvial floodplains to the west of the Leard State Conservation Area is used for various agricultural grazing and cropping. A Compensation Agreement with Forestry Corporation of NSW (FCNSW) is in place to enable MCCM-related activities in these areas.

Crown Land and several roads occur within the Project Boundary. A portion of land within ML 1719 is Crown Land and Leard State Forest and was subject to the Right to Negotiate Process in accordance with the Commonwealth Native Title Act, 1993. MCCM has agreements in place with applicants of the Native Title Claims to access these lands.

Within the vicinity of the MCCM Project Boundary are the Boggabri Coal Mine and the Tarrawonga Coal Mine. There are also several exploration leases, including the Goonbri Exploration Lease.

During the final stages of the environmental planning and approval processes undertaken in 2012 and 2013, the PAC approved MCCM's justification to retain a final void as part of the final landform. Under Schedule 3 Condition 74 of Project Approval 10_0138, MCCM was required to develop a Final Void and Mine Closure Plan (FVMCP), with the draft stage finalised in December 2020.

As of 2021, 12 of 18 conservation agreements for MCCM offset properties have been registered on title by the NSW Land Registry Service. WHC will prioritise negotiations of the MCCM offset properties that NPWS has shown interest in being transferred to National Park Estate.

Final land use will include the establishment of native forests and woodlands.

The schedule of land for the project is listed in Table 2.

1.3.1 Land Ownership and Land Use Figure

Figure 1A and Figure 1B display the land ownership and land use at the site. Figure 1C outlines the mining and rehabilitation areas (updated to be March 2023). This has been prepared to outline the context of current activities. The Annual Rehabilitation Report and Forward Program will be submitted annually and provide an update to Figure 1C.

Table 2: Schedule of Land

Lot	DP	Lot	DP
7001	94069	262	755475
156	455004	264	755475
1	622375	7002	1051146
1	748046	7001	1052587
2	748046	7300	1143939
3	748046	1	114793
3	754924	822	1074515
65	754924	35	754924
57	754940	101	1204994
58	754940	102	1204994
59	754940	1	1201952
60	754940	1	1226200
61	754940	1	1157540
39	754940	3	1200040
40	754940	4	1202450
41	754940	7	1202450
42	754940	38	1211027
35	754940	263	1193634
54	754948	2	509312
59	754948	2	1197060
60	754948	Werris Creek Mungindi Railway	
73	754948	Kamilaroi Highway	
76	754948	Namoi River	
105	755470	Therribri Road	
85	755475	Warners Road Reserve	
159	755475		

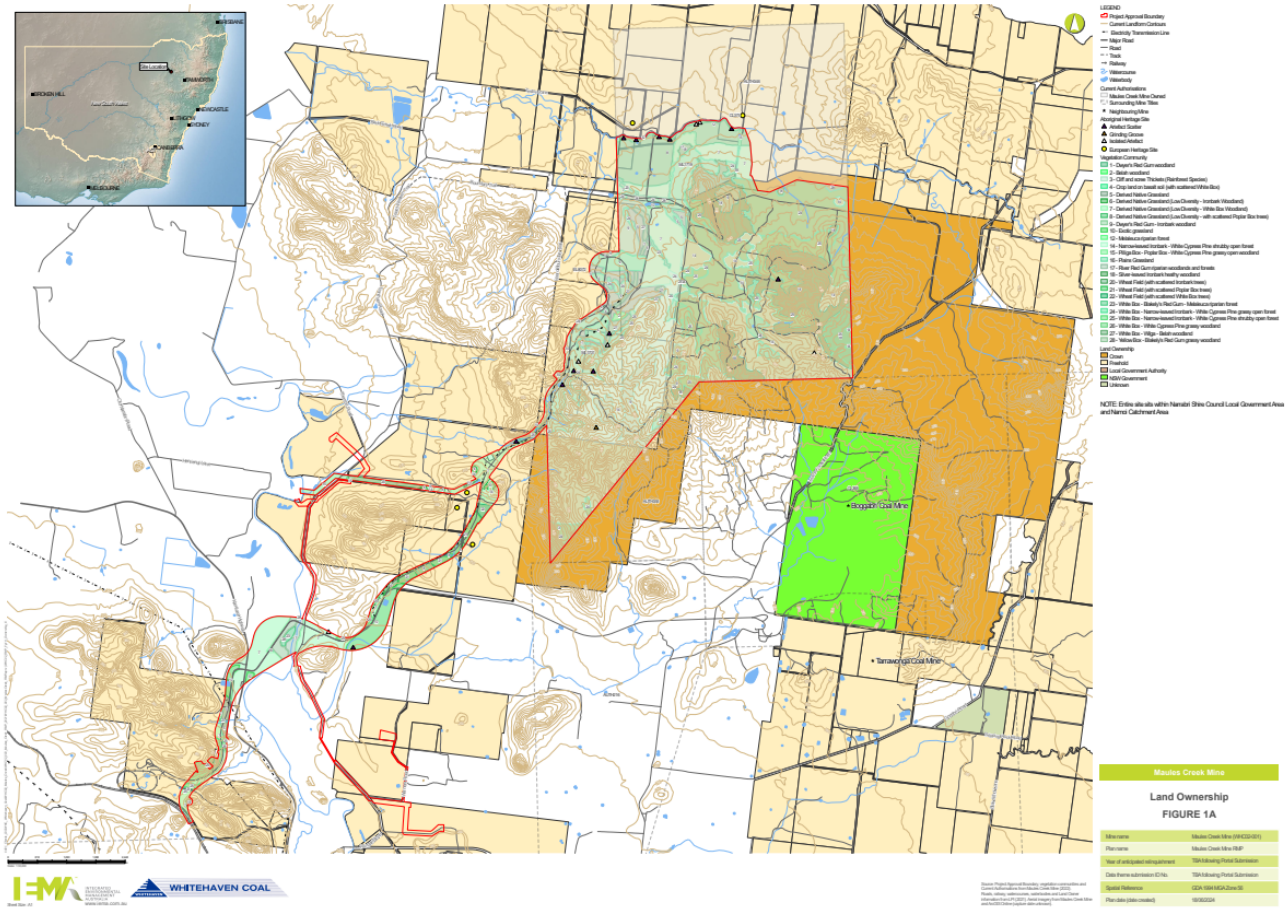


Figure 1 A: Land Ownership

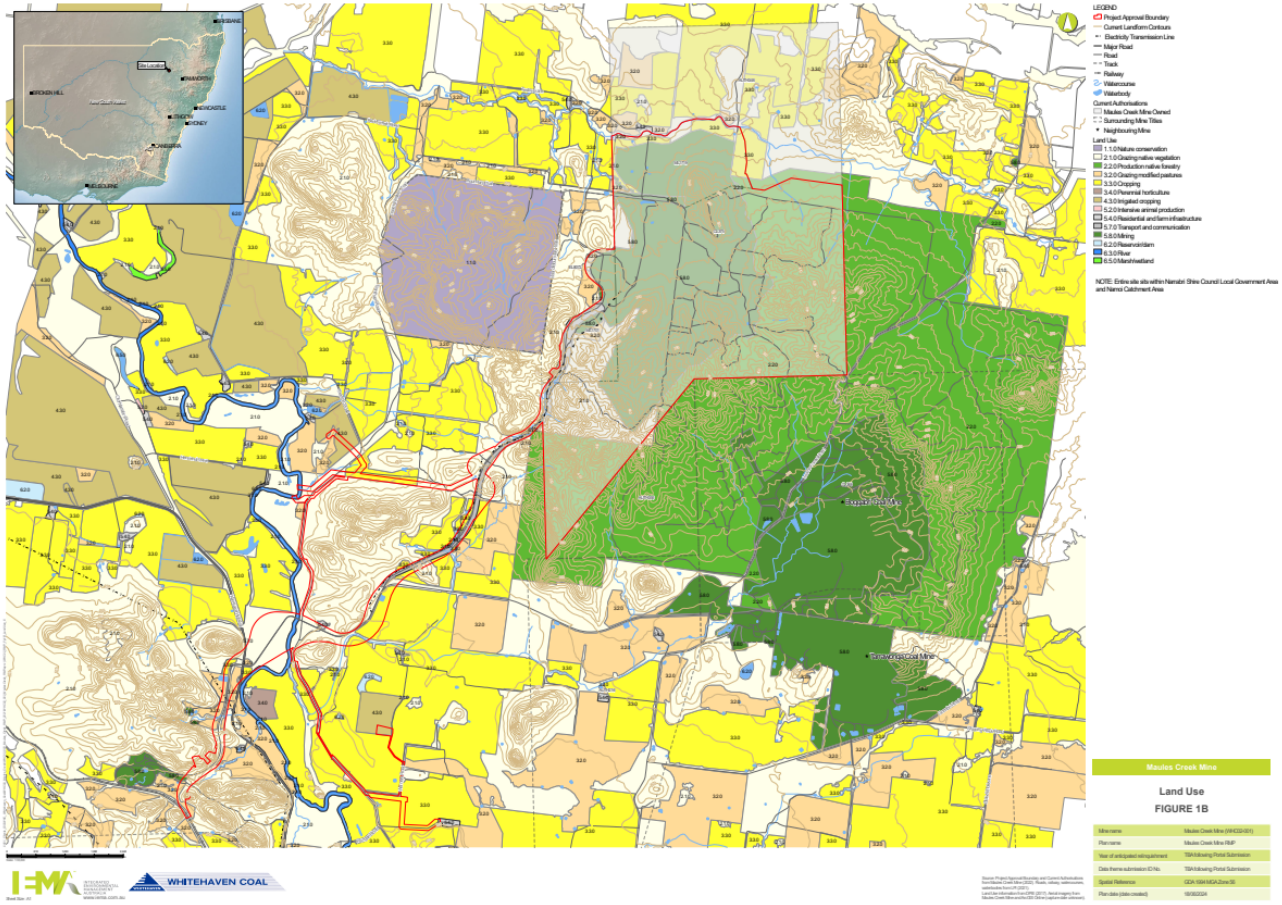


Figure 1 B: Land Use

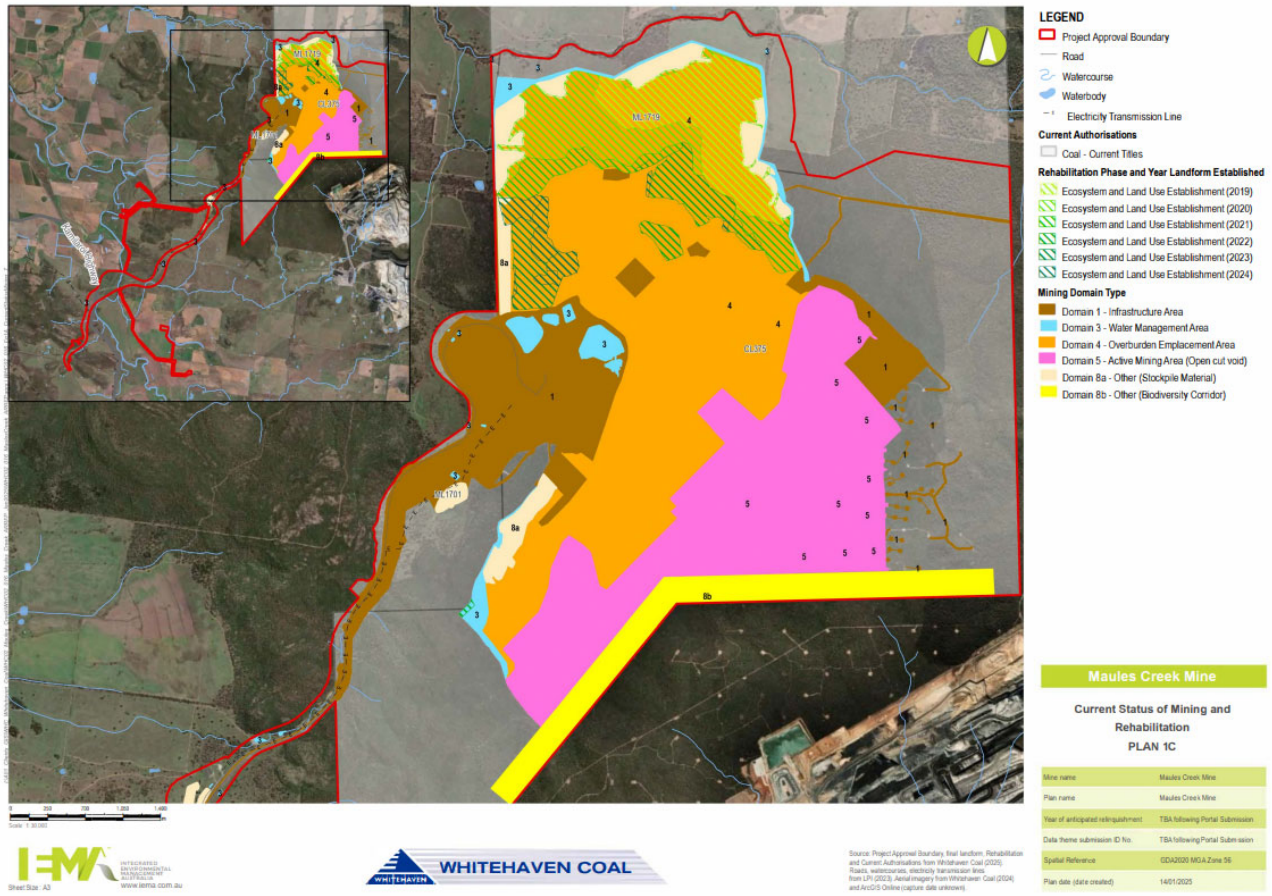


Figure 1 C: Current Status of Mining and Rehabilitation

2. FINAL LAND USE

As stated in Section 1.3 of this RMP, final land use at the MCCM will include the establishment of native forests and woodlands. In accordance with Condition 25 of the EPBC 2010/5566, rehabilitation within the Project Boundary will include at least 1655 ha of native forest and woodland. This will include 544 ha of species that are consistent with a White Box - Yellow Box – Blakely's Red Gum Grassy Woodland and derived Native Grassland CEEC and be consistent with the BMP.

Rehabilitation activities and final land use outcomes described in this RMP have been developed consistently with the requirements of the Biodiversity Management Plan (BMP) and other management plans required under PA 10_0138. Rehabilitation planning, species selection, vegetation community establishment, habitat restoration and monitoring programs are integrated with the implementation of the BMP to support the establishment of native woodland and forest ecosystems across the rehabilitated mine landform.

2.1 Regulatory Requirements for Rehabilitation

Rehabilitation activities will be undertaken in accordance with the relevant conditions outlined in the MCCM approvals, relevant legislation and policies and guidelines. Regulatory requirements relevant to rehabilitation at the MCCM site are detailed in Table 3. Refer to Appendix C for the Mining Amendment (Standard Conditions of Mining Leases—Rehabilitation) Regulation 2021.

Table 3: Regulatory Requirements Relating to Rehabilitation

Document	Condition	Requirement / Purpose	Area	Timing	Section Addressed/ Comment
EPBC 2010/5566	Condition 25	To mitigate the impacts to the White Box-Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland and the habitat of the regent honeyeater, swift parrot and greater long-eared bat, the person taking the action must, within 12 months of the commencement of construction, submit to the Minister for approval a mine site rehabilitation plan for the progressive rehabilitation and revegetation of no less than 1665 ha of native forest and woodland (less the portion included in the biodiversity corridor identified in condition 3) in the project area including 544 ha using species consistent with a White Box-Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland Ecological Community. This approved mine site rehabilitation plan must be implemented.	Whole Site	Timing for plan completed.	See 'Mine Site Rehabilitation Management Plan' for Federal approval.
EPBC 2010/5566	Condition 26	The person taking the action must: a. rehabilitate the site to be consistent with the proposed rehabilitation strategy as provided in the Environmental Assessment and, as required under the NSW State Government approval dated 23 October 2012 (Application 10_0138); and b. not replace top soil and sub soil layers at a depth less than the minimum depths determined through pre-stripping soil surveys as described in condition 27(c) Note: the NSW State Government Project Approval dated 23 October 2012 (application number 10_0138) conditions require pre-stripping soil surveys and inventories to inform the availability, rehandling, stockpiling	Whole Site	Progressive rehabilitation is ongoing.	See 'Mine Site Rehabilitation Management Plan' for Federal approval. Also see Section 6.2 of this document

Document	Condition	Requirement / Purpose	Area	Timing	Section Addressed/ Comment
		and management of soils, and maximising the salvaging of soil to be used, in the rehabilitation of the site.			
EPBC 2010/5566	Condition 27	The mine site rehabilitation plan must include, at a minimum, the following information: a. targets and performance indicators to achieve effective restoration of potential habitat for the regent honeyeater, swift parrot and greater long-eared bat and White Box- Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland ecological community, including weed management; b. details of the vegetation communities to be rehabilitated and the timing of progressive rehabilitation (commencing as soon as practicable following disturbance); c. detailed soil depths surveys and analysis to inform the effective placement and restoration of soils across the disturbance sites and soil sampling at no less than one sample point per 20 ha of each soil type identified. Sampling must identify; type, depth, water holding capacity, structure and physio-chemical properties of each of the soil and subsoil layers; d. processes and methodology for the removal, storage and re-layering of the top soil and sub layers underlying the disturbed sites being prepared for rehabilitation. These processes and methodologies must ensure the replacement of top soil and sub soil layers:	Whole Site	Implementation is ongoing.	See 'Mine Site Rehabilitation Management Plan' for Federal approval.

Document	Condition	Requirement / Purpose	Area	Timing	Section Addressed/ Comment
		• meet the minimum depth requirements determined from sampling outcomes as identified in condition 27(c); and • replicate other existing soil parameters including, but not limited to, soil type, water holding capacity, structure and physio-chemical properties. e. a process to report annually to the department the rehabilitation management actions undertaken and the outcome of those actions, and the mechanisms to be used to identify the need for improved management; f. a description of the potential risks to successful management and rehabilitation on the MCCM site, including weed invasion, and a description of the contingency measures that would be implemented to mitigate these risks; g. details of long-term management and protection of the mine site, including details of the commitment of funds to achieve this.			
EPBC 2010/5566	28	The mine site rehabilitation plan must be subject to an independent review by a qualified ecologist prior to being submitted to the Minister for Approval. The findings of the independent review must be published on the proponent's website. Note: for consistency, the person taking the action may develop a single mine rehabilitation plan to align with the requirements, including timing of reporting, of the NSW State Government approval dated 23 October 2012 (Application 10_0138) and this approval. The Offset Management Plan and the Rehabilitation Management Plan need to be substantially	Whole Site	Previously completed	See 'Mine Site Rehabilitation Management Plan' for Federal approval.

Document	Condition	Requirement / Purpose	Area	Timing	Section Addressed/ Comment
		integrated for achieving biodiversity objectives for the rehabilitated mine site.			
EPBC 2010/5566	29	The person taking the action must undertake rehabilitation to ensure that final landform provides the optimum opportunity for the successful restoration of native forest and woodland including the critically endangered White Box-Yellow Box- Blakely's Red Gum Grassy Woodland and Derived Native Grassland ecological community. Note: for consistency, the proponent may develop a single mine rehabilitation plan to align with the requirements of the NSW Government and this approval. The Offset Management Plan and the Rehabilitation Management Plan need to be substantially integrated for achieving biodiversity objectives for the rehabilitated mine-site.	Whole Site	Ongoing	See 'Mine Site Rehabilitation Management Plan' for Federal approval. Also covered by several sections of this document.
EPBC 2010/5566	30	The person taking action must undertake rehabilitation to ensure the final void and landform minimises the extent of any resulting pit lake, avoids salt scalding and ensures that drained waters do not adversely affect the downstream environment and avoids any impacts on matters of national environmental significance. Note: the State approval conditions for the MCCM 10_0138 require the preparation and implementation of an updated Final Void and Mine Closure Plan that considers interactions with the adjoining mines, including interaction between final voids, opportunities for integrated mine planning with adjoining mines to minimise environmental impacts, all reasonable and feasible landform options for the final void (including filling) and predicted hydrochemistry and hydrogeology (including long-term groundwater recovery and void groundwater quality).	Void Domain	Ongoing	See Final Void and Mine Closure Plan.

Document	Condition	Requirement / Purpose	Area	Timing	Section Addressed/ Comment
PA 10_0138	Schedule 3 Condition 39	The Proponent shall: (a) develop a detailed soil management protocol that identifies procedures for • Comprehensive soil surveys prior to soil stripping; • Assessment of top-soil and sub-soil suitability for mine rehabilitation; and • Annual soil balances to manage soil handling including direct respreading and stockpiling; (b) maximise the salvage of suitable top-soils and sub-soils and biodiversity habitat components such a bush rocks, tree hollows and fallen timber for rehabilitation of disturbed areas within the site and for enhancement of biodiversity offset areas; (c) ensure that coal reject or any potentially acid forming interburden materials must not be emplaced at elevations within the pit shell or out of pit emplacement areas where they may promote acid or sulphate species generation and migration beyond the pit shell or out of pit emplacement areas; (d) ensure that no water can drain from an out of pit emplacement area to any watercourse or to any land beyond the lease boundary; and	Whole Site	Progressive rehabilitation is ongoing.	Section 6.2.1 and Section 6.2.4 Section 6.2.1 Section 6.2.1.8 See Water Management Plan and Mine Plans Covered in further detail in the Final Void and Mine Closure Plan (to be finalised in 2026).

Document	Condition	Requirement / Purpose	Area	Timing	Section Addressed/ Comment
		(e) ensure that any coal barrier between the final void and any future surrounding mining operations minimizes exchange of any contained groundwaters in the pit shell; (f) design, install and maintain any new infrastructure within 40 metres of watercourses in accordance with the guidance series for Controlled Activities on Waterfront Land (DPI Water, 2012 or latest version).			
PA 10_0138	Schedule 3 Condition 71	The Proponent shall rehabilitate the site in accordance with the conditions imposed on the mining lease(s) associated with the project under the Mining Act 1992. This rehabilitation must be generally consistent with the proposed Rehabilitation Strategy described in the EA and comply with the objectives in Table 17. *Table 17: Rehabilitation Objectives* **Feature** / **Objective** Mine site: Safe, stable and non-polluting. Constructed landforms drain to the natural environment. Final void: Minimise the size and depth of the final void as far as is reasonable and feasible. Minimise the drainage catchment of the final void as far as is reasonable and feasible Surface infrastructure: To be decommissioned and removed, unless the Resources Regulator agrees otherwise. All land, other than the final void: Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of: • local native plant species; and • a landform consistent with the surrounding environment, in accordance with the Revised Biodiversity Offset Strategy (see condition 45) and Biodiversity Management Plan (see condition 53). Community: Ensure public safety. Minimise the adverse socio-economic effects associated with mine closure	Whole Site	Progressive rehabilitation is ongoing.	This document. Note some of these are final rehabilitation and closure objectives.

Document	Condition	Requirement / Purpose	Area	Timing	Section Addressed/ Comment
PA 10_0138	Schedule 3 Condition 72	The Proponent shall rehabilitate the site progressively, that is, as soon is reasonably practical following disturbance. All reasonable and feasible measures must be taken to minimize the total area exposed for dust generation at any time. Interim rehabilitation strategies shall be employed when areas prone to dust generation cannot yet be permanently rehabilitated. Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the development.	Whole Site	Progressive rehabilitation is ongoing.	This document
PA 10_0138	Schedule 3 Condition 73	The Proponent shall prepare and implement a Rehabilitation Management Plan in accordance with the conditions imposed on the mining lease(s) associated with the project under the Mining Act 1992. This plan must: (a) be prepared in consultation with the Department, MEG, Forests NSW, DPIE Water, BCS, North West LLS and Council; (b) be prepared in accordance with the relevant requirements specified under the Mining Act 1992 within 6 months from the date of this approval; (c) be prepared in accordance with any relevant NSW Government mining rehabilitation guideline; (d) describe how the rehabilitation of the site would be integrated with the implementation of the biodiversity management plan;	Whole Site	This document – covers life of mine rehabilitation	Section 4.2 Section 4.2 As per RMP Form and Way Document Section 6.2.6 Section 4 Section 6 and 7 Section 6.2.1.10 Section 7 QAQC

Document	Condition	Requirement / Purpose	Area	Timing	Section Addressed/ Comment
		(e) include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the site, and triggering remedial action (if necessary); (f) describe the measures that would be implemented to ensure compliance with the relevant conditions of this approval, and address all aspects of rehabilitation including mine closure, final landform, and final land use; (g) include interim rehabilitation where necessary to minimise the area exposed for dust generation; (h) include a program to monitor, independently audit and report on the effectiveness of the measures, and progress against the detailed performance and completion criteria; and (i) build to the maximum extent practicable on the other management plans required under this approval. Note: In particular the BMP and Rehabilitation Management Plan need to be substantially integrated for achieving biodiversity objectives for the rehabilitated mine-site.			Linkages to Biodiversity Management Plan
PA 10_0138	Schedule 3 Condition 74	The Proponent shall prepare and implement an updated Final Void and Mine Closure Plan (as a component of the overall Rehabilitation Management Plan required under Condition 73 of Schedule 3) to the satisfaction of the Resources Regulator, following consultation with the Planning Secretary. A draft plan must be prepared and submitted to the Resources Regulator by the end of December 2020 and a final plan must	Whole Site	Draft plan completed. Next plan by end of December 2026.	Covered by separate document - Final Void and Mine Closure Plan (to be finalised in 2026).

Document	Condition	Requirement / Purpose	Area	Timing	Section Addressed/ Comment
		be prepared and submitted to the Resources Regulator by the end of December 2026. Each version of the plan must: (a) be subject to independent review and verification by suitably qualified, experienced and independent person/s (including a groundwater expert) whose appointment has been approved by the Planning Secretary; (b) identify and consider: • Options for continued mining beyond current MCCM life; • Interactions with the final landform of adjoining mines (including any direct or indirect interaction between final voids); • opportunities for integrated mine planning with adjoining mines to minimise environmental impacts of the mines' final landforms; • all reasonable and feasible landform options for the final void (including filling); • predicted stability of the proposed landforms; and • predicted hydrochemistry and hydrogeology (including long-term groundwater recovery and void groundwater quality); (c) include a detailed proposed landform design; and			Also note, final void management is outlined in Section 6.2.3 of this RMP.

Document	Condition	Requirement / Purpose	Area	Timing	Section Addressed/ Comment
		(d) demonstrate that the proposed final landform: • satisfies the relevant objectives in Table 17; • minimises the extent of any resulting pit lake; • avoids salt scalding; • maximises the capacity of emplaced spoil to drain to the natural environment; and • ensures that drained waters do not adversely affect the downstream environment.			
Statement of Commitments	Condition 16	Maules Creek Coal will progressively rehabilitate mined areas with a focus on the reestablishment of existing forest and woodland communities.	Whole Site	Progressive rehabilitation	Section 6.2
Narrabri Local Environmental Plan, 2012	N/A	Under the Narrabri Local Environmental Plan, 2012, the MCCM site is located on land that is zoned as Rural Zones RU(1) – Primary Production and RU(3) – Forestry. Final land use will need to consider the objectives of the land zones.	Whole Site	Progressive rehabilitation	Final land use is woodland. See Section 2.
National Recovery Plan (DoEE, 2010)	N/A	This document constitutes the formal National Recovery Plan for White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland and considers the conservation requirements of the ecological community across its known range.	Whole Site	Progressive rehabilitation	This Document
Guide to Managing Box	N/A	Covers the underpinning science and management requirements of Box Gum Grassy Woodlands.	Whole Site	Progressive rehabilitation	This Document

Document	Condition	Requirement / Purpose	Area	Timing	Section Addressed/ Comment
Gum Grassy Woodlands					
Minimum Construction Requirements for Water Bores in Australia, 2011	N/A	Sets out requirements for decommissioning groundwater piezometers.	Whole Site	Progressive Rehabilitation	Section 6.2

2.2 Final Land Use Options Assessment

This section is not applicable due to final land use already being determined through existing project approval process and the previous MOP.

See Section 2.4 of the RMP for details on final land use domains.

2.3 Final Land Use Statement

The final land use is outlined in Section 2.4 Final Land Use and Mining domains. The State and Commonwealth approvals both specify that the rehabilitation of the MCCM must be consistent with the Rehabilitation Strategy (i.e. Condition 71 of Schedule 3 of PA 10_0138 and Condition 26 of EPBC 2010/5566). Consistent with the description contained in the Project EA, and as per the requirements of the State and Commonwealth approvals, the proposed post mining land use for the Project is to return the area to a mixture of native vegetation communities including grassy woodland, shrubby woodland/open forest, riparian forest, native forest and woodland.

2.4 Final Land Use and Mining Domains

Domains are used to divide a mine site into small, more manageable areas. They are usually determined based on the consideration of specific requirements of the mining location and local environment.

The Final Land Use and Mining domain names and codes have been provided by the NSW Resources Regulator. These must be adhered to when preparing the RMPs. Table 4 details the specific domain titles and the relevant codes.

The domains relevant to MCCM are in bold, while the ones in grey are not applicable to the site. The 'Other' under Mining Domain refers to stockpiled material. A brief description of each Final Land use and Mining domain at MCCM is provided in Sections 2.4.1 and 2.4.2 respectively.

Table 4: NSW Resource Regulator Domain Codes (2023)

FINAL LAND USE DOMAIN	CODE	MINING DOMAIN	CODE
Native Ecosystem	A	Infrastructure Area	1
Agricultural – Grazing	B	Tailings Storage Facility	2
Agricultural – Cropping	C	Water Management Area	3
Rehabilitation Biodiversity Offset Area	D	Overburden Emplacement Area	4
Industrial	E	Active Mining Area (Open cut void)	5
Water Management Areas	F	Underground Mining Area (SMP)	6
Water Storage (Excluding Final Void)	G	Beneficiation Facility	7
Heritage Area	H	Other (Stockpiled Material)	8
Infrastructure	I		
Final Void	J		

2.4.1 Final Land Use Domains

The final land use domains for MCCM are defined in Table 5 and shown on the Final Landform and Rehabilitation Plan discussed in Section 5. The domain numbering has been updated in this RMP to suit the specific NSW Resources Regulator requirements, however no new domains have been added.

Table 5: Final Land Use Domains

Code	Final Land Use Domain	Description
A	Native Ecosystem	Woodland revegetation will include native woodland and forest species which will consist of, but not be limited to the following vegetation communities: White Box – White Cypress Pine Grassy Woodland (associated with White Box-Yellow Box- Blakely's Red Gum Grassy Woodland CEEC); Silver-leaved Ironbark Heathy Woodland; White Box - Narrow-leaved Ironbark - White Cypress Pine Grassy Open Forest (associated with the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland CEEC); White Box - Narrow-leaved Ironbark - White Cypress Pine Shrubby Open Forest; and Dwyer's Red Gum – Ironbark Woodland. It should be noted that there is a requirement in Schedule 3 Condition 44. *"Except for the area of the minimised final void, pre-mining native vegetation communities to be re-established (including 544 ha of Box Gum Woodland EEC) for a biodiversity conservation land use objective, with the area subject to finalisation of the rehabilitation management plan as required under this approval".*
F	Water Management Areas	This domain will include water management infrastructure that is required during post closure or forms part of the final landform. E.g. Significant final landform features such as drains. Proposed drainage works will be reviewed annually as part of landform design and rehabilitation.
G	Water Storage (Excluding Final Void)	Water storage area (includes dams retained for the final land use, but excludes any anticipated permanent water body in the final void)
I	Infrastructure	The plan is to keep the sealed road at closure that goes from the Boggabri Coal/Maules Creek turnoff to the front gate at Maules Creek. This will allow access into the site at closure and assist with fire fighting access. MCCM will liaise with DPE prior to closure to satisfy any closure requirements.
J	Final Void	This domain refers to the final void that will remain in the southern and eastern portion of the Project Boundary. Catchment areas that are not free draining will report to the final void.

2.4.2 Mining Domains

The mining domains for MCCM are defined in Table 6. These are classified as a land management unit with a

discrete operational function (e.g. overburden emplacement), and therefore similar geophysical characteristics, that will require specific rehabilitation treatments to achieve the final land use(s).

The previous MOP had a Mining domain listed as 'Rehabilitation (7)'. This has been removed and any existing rehabilitation is shown in the RMP and Forward Program in a phase of rehabilitation. Currently this is generally within the mining domain (D4 Overburden Emplacement Area), with a rehabilitation phase.

Table 6: Mining Domains

Code	Mining Domain	Description
1	Infrastructure Area	This domain includes the CHPP, site administration offices, equipment and maintenance sheds, loading facilities, coal stockpiles, mine access road and the transport corridor between the MIA and the Boggabri Coal Mine rail spur.
3	Water Management Area	Situated immediately adjacent to the Infrastructure Area domain and includes the various dams, channels and bunds used to manage, divert and contain water runoff from this area.
4	Overburden Emplacement Area	Consists of areas within the Project Boundary used for overburden emplacement (i.e. the out-of-pit overburden emplacements as well as the in-filled sections of the open cut). Existing rehabilitation also falls within this domain under a rehabilitation phase.
5	Active Mining Area (Open Cut Void)	The current active mining area (pit) at the site. This is a regularly changing domain.
8	Other (Stockpiled Material)	Incorporates the MCCM soil and vegetation stockpiles. The soil and vegetation stockpiles will be used progressively throughout the life of mine. They will be located in available land within the Project Boundary (including the overburden emplacement and within the open cut void domain) and will be accessed as required to stockpile material and to reclaim it for use in rehabilitation.

3. REHABILITATION RISK ASSESSMENT

A Rehabilitation Risk Assessment was completed on 19 April 2022.

The objective of the risk assessment was to identify and risk assess the identified rehabilitation and closure risks for the site, in accordance with:

- Rehabilitation Risk Assessment Guideline (NSW Resources Regulator, 2021); and
- AS/NZS ISO 31000:2018 Risk management Guidelines; and list risk mitigation actions to reduce the risks.

The following personnel were present at the Rehabilitation Risk Assessment:

- Emma Bulkeley – Environmental Superintendent, Maules Creek Coal Mine
- Blair Meyers – Mining Engineering Manager, Maules Creek Coal Mine;
- Talan Breaden – Health, Safety, Environment and Community Manager, Maules Creek Coal Mine;

- Shena Newman – Environmental Officer, Maules Creek Coal Mine;
- Chris Jones – Principal Environmental Scientist, IEMA; and
- Olivia O'Shannessy – Graduate Environmental Scientist, IEMA.

The Rehabilitation Risk Assessment template has been prepared with colour coding. The colour coding relates to the source of a risk, and includes:

Green = RMP Form and Way Document
Grey = Risk from Resources Regulator Risk Guideline
Cream = Risk from TAP guidance
Red = Added as part of this specific RA

Risks were classified as low, medium, high, or critical. There were no risks rated as critical nor high in the Risk Assessment. A summary of the risks classified as medium are outlined in the Table 7 below.

As part of the 2024 RMP update the risk assessment was reviewed on the 11th December 2024 and was deemed to still be adequate, with one additional risk added at (Risk 4) and updates made to the progress of the treatment plans. The latest risk assessment is attached as Appendix A.

Table 7: Rehabilitation Risk Assessment Medium Risks Summary

Risk ID	Risk to Rehabilitation	Risk Controls	Current Risk Rating	Where addressed in this RMP
4	Target vegetation communities are not achieved	1. Rehabilitation monitoring 2. Existing robust criteria which have been reviewed for the RMP. These will be reviewed with every RMP update or when triggered from the Resources Regulator. 3. Targeted seed mix, sourced from reputable suppliers	**M6**	Whole Document
5	Rehabilitated areas do not meet the completion criteria within the RMP/Project Approval at final closure.	1. Existing robust criteria which have been reviewed for the RMP. These will be reviewed with every RMP update or when triggered from the Resources Regulator. 2. Rehabilitation monitoring.	**M6**	Whole Document
6	Inadequate topsoil and capping material quantity available to be salvaged during operations for later use in rehabilitation.	Soils 1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2.Excavation/clearing permit 3. Topsoil permit and excavation register 4. Existing process for clearing veg and soil management. This includes erosion and sediment control. 5. Manage topsoil heights - 4 m height. Known topsoil storage locations. Note there is a shortage of topsoil. See later lines about using ameliorants in rehabilitation. 6. Seeding of topsoil stockpiles where required. 7. Proposed topsoil and subsoil stripping depth. 8. Annual Soil Surveys - see Landloch reports. Capping and Overburden 9. Reject material placed inpit. Area is capped, with additional capping for reject material identified as being PAF. 10. Use of WENCO system. dumping limit to where reject can be dumped to	**M6**	**6.2.1.1** Soils and material

Risk ID	Risk to Rehabilitation	Risk Controls	Current Risk Rating	Where addressed in this RMP
8	Contamination of topsoil due to over stripping	1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Stripping report completed by soil scientist. 3. Stripping activities completed by trained specialists. 4. Four metre stockpile height is approved in the MOP. Constrained by small footprint with limited areas to stockpile topsoil. 5. Annual Soil Surveys - see Landloch reports. 6. Supervision and monitoring of topsoil stripping activities	**M6**	**6.2.1.1** Soils and material
9	Loss of topsoil properties due to rehandling or failure to collect soil	1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Stripping report completed by soil scientist. 3. Stripping activities completed by trained specialists. 4. Four metre stockpile height is approved in the MOP. Constrained by small footprint with limited areas to stockpile topsoil. 5. Topsoil register/Map. 6. Planning and scheduling	**M6**	**6.2.1.1** Soils and material
10	Poor stockpile location selection	1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Stripping report completed by soil scientist. 3. Stripping activities completed by trained specialists. 4. Four metre stockpile height is approved in the MOP. Constrained by small footprint with limited areas to stockpile topsoil. 5. Annual Soil Surveys - see Landloch reports. 6. Direct placement of topsoil onto rehabilitation areas - where possible. 7. Mine planning.	**M6**	**6.2.1.1** Soils and material

Risk ID	Risk to Rehabilitation	Risk Controls	Current Risk Rating	Where addressed in this RMP
15	Adverse geochemical/chemical composition of materials such as overburden, interburden, processing wastes, subsoils and topsoils and imported cover materials.	1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Soil and overburden testing. Annual Soil Surveys - see Landloch reports. 3. Use of ameliorants 4. No PAF in overburden from existing testing.	**M6**	**f)** Geology and Geochemistry
19	Poor erosion and sediment control management during operations (prior to rehabilitation).	1. Water Management Plan covering operational phase. 2. Mine planning	**M6**	**j)** Erosion and sediment control
28	Contamination resulting from decommissioning activities (e.g. storage and use of hydrocarbons/chemicals, drilling fluids, spillage of dirty or produced saline water, brine, sewage). Carbonaceous material remaining at closure.	1. All remaining hydrocarbons such as diesel and lubricants and other hazardous materials will be either used or discarded by an authorised waste contractor. 2. Carbonaceous material to be buried at site with sufficient capping material used in these areas. 3. Contamination sites register. Landfarm location. 4. Phase 1 and 2 Assessments required as part of the Final Void and Mine Closure Plan. To be included in 2026 Final Void and Mine Closure Plan. Possibly some contamination remediation prior to closure. 5. Contamination assessment completed in the previous reload yard prior to dumping over this areas with overburden. Some remediation completed.	**M6**	**9.2** Future Rehabilitation Research, Modelling & Trials
31	Less than adequate studies associated with surface and groundwater management (e.g. creek diversions, geomorphological and hydraulic modelling, aquatic ecological assessments, final void water balance, groundwater modelling, geochemical studies, etc.)	1. Further detailed investigations, modelling and updated risk assessments to be completed as part of the 2026 Final Void and Mine Closure Plan process, including consideration of residual risks to water sources and requirements of the NSW Aquifer Interference Policy 2. Existing surface and groundwater monitoring & model updated on 3yr basis	**M6**	**9.2** Future Rehabilitation Research, Modelling & Trials

Risk ID	Risk to Rehabilitation	Risk Controls	Current Risk Rating	Where addressed in this RMP
32	Geotechnical/geochemical risks associated with landform establishment.	1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Soil testing. Annual Soil Surveys - see Landloch reports. 3. Use of ameliorants 4. Engineering design. Use of SIBERIA model.	**M6**	**b)** Final landform construction: general requirements
33	Less than adequate landform design (e.g. macro and micro-relief)	1. Rehabilitation design using geofluvial design. Topo factor risk analysis is used. 2. Landform Design Protocol. 3. Landform Construction Protocol.	**M6**	
35	Final landform unsuitable for final land use (e.g. large rocks present affecting cultivation and settlement).	1. Designs as per approved final landform/ vegetation type. No pasture for final land use. 2. Quality assurance. 3. Annual rehabilitation Monitoring Program	**M6**	
36	Exposure or release of reject material at closure causing long term issues. Not sufficient capping.	1. Reject material identified as being PAF will be placed within the OEA or in pit to provide a final depth of inert cover of at least 15m. When non PAF the site completes 5 metres. 2. Mine planning. 3. Geotechnical testing for capping material. 4. Maules Creek Coal Reject Disposal Procedure. 5. No tailings, only coarse rejects.	**M6**	
37	Final voids, highwalls and low walls pose a risk to public safety and/or sterilises the land available for future final land uses	1. Site access is limited by fencing and security. 2. Final void to be designed as per approval 3. Geotechnical investigations, long-term stability assessments and risk assessments to be undertaken as part of the 2026 Final Void and Mine Closure Plan, with implementation of identified management measures during closure.	**M6**	

Risk ID	Risk to Rehabilitation	Risk Controls	Current Risk Rating	Where addressed in this RMP
38	Lack of detail around final void management strategy (e.g. water balance, water quality, geotechnical assessments, future water licencing requirements).	1. Schedule 3 Condition 74 of PA 10_0138 requires the proponent to prepare and implement a Final Void and Mine Closure Plan. A draft is required to be submitted to the Resources Regulator by the end of December 2020 (Completed), and a final plan must be submitted by the end of December 2026. See details under Schedule 3 Condition 74.	**M6**	**d)** Final landform construction: final voids, highwalls and low walls
40	Less than adequate handling and management of mine materials (e.g. overburden, reject materials etc.) to address potential geochemical and geotechnical constraints for rehabilitation.	Soil 1. Topsoil stockpile reconciliation. Specific Domain 5E - Stockpiled Material from the current MOP. 2.Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 3. Experienced in using ameliorants. 4. Proposed topsoil and subsoil spreading depth. Generally 200mm. Rejects 1. Reject material identified as being PAF will be placed within the OEA or in pit to provide a final depth of inert cover of at least 15m. 2. Maules Creek Coal Reject Disposal Procedure. Overburden 1. Mine planning. 2. Geotechnical testing for capping material.	**M6**	**f)** Geology and Geochemistry

Risk ID	Risk to Rehabilitation	Risk Controls	Current Risk Rating	Where addressed in this RMP
46	Long term water quality and quantity issues (e.g. acid-drainage, high salinity).	1. Water monitoring and soil testing program. 2. Groundwater model. BTM complex model. 3. Ongoing review of residual groundwater and surface water risks through monitoring, modelling and closure planning processes. 4. Further groundwater investigations and updated risk assessments to be undertaken through the Final Void and Mine Closure Plan process in accordance with the NSW Aquifer Interference Policy and relevant DPE groundwater guidelines.	**M6**	Whole Document
47	Limited vegetation structural development and habitat for targeted fauna species meaning the site does not meet some completion criteria.	1. Inspections and monitoring. 2. Incorporation of logs and rocks during earlier phases of rehabilitation. 3. Use of nest boxes in the future. Use of stag trees in future rehabilitation.	**M9**	**Section 6.2.5**Ecosystem and land use development

The RMP Rehabilitation Risk Assessment also identified four Treatment Plans to be undertaken which are outlined in Table 8.

Table 8: Rehabilitation Risk Assessment Treatment Plans Updated

Treatment Plans		Owner	Applicable Section of this RMP
TP1	Update form to monitor and record failure and treatment to rectify issues with rehabilitation. COMPLETED	HSEC Manager	Whole Document
TP2	Determining an appropriate method to complete weed spraying in geofluv areas, as they are currently steep. Include this information in the Biodiversity Management Plan. ONGOING	Technical Services Manager	**a)** Soils and Materials
TP3	Key environment and community staff to undertake blue book training. Completed	HSEC Manager	**j)** Erosion and sediment control
TP4	Final Void and Mine Closure Plan to be developed by 2026. IN PROGRESS	Technical Services Manager	**a)** Site security

Refer to Appendix A for the complete Rehabilitation Risk Assessment.

4. REHABILITATION OBJECTIVES AND REHABILITATION COMPLETION CRITERIA

4.1 Rehabilitation Objectives and Rehabilitation Completion Criteria

Rehabilitation must be undertaken to be consistent with the objectives as set out in Schedule 3, Condition 71 of Project Approval 10_0138 and to the satisfaction of the Resources Regulator. Rehabilitation Objectives (see column in table below) were approved by the Resources Regulator on 13 October 2023. The completion criteria are still in draft and have not yet been submitted to the Resources Regulator for comment/approval under the 'Rehabilitation Outcome' requirements. Rehabilitation completion criteria have been developed to align with biodiversity performance measures and ecological targets defined in the Biodiversity Management Plan. Rehabilitation objectives and completion criteria have been developed taking into consideration the requirements of the Biodiversity Management Plan, Water Management Plan, Air Quality and Greenhouse Gas Management Plan and other relevant management plans required under PA 10_0138 to ensure a coordinated approach to rehabilitation and mine closure.

The proposed rehabilitation completion criteria are outlined in Table 9.

Table 9: Rehabilitation Objectives and Completion Criteria

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
Native Ecosystem (A) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	<u>Bushfire:</u> The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation.	Appropriate bushfire hazard controls (where required) have been implemented on the advice from the NSW Rural Fire Service.	Bushfire controls implemented.	Statement provided and before/after photos.
Native Ecosystem (A) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	<u>Ecological Rehabilitation:</u> <u>Connectivity</u> between rehabilitation areas allows for unrestricted fauna movement across the rehabilitation.	Target native woodland vegetation is established providing habitat connectivity for fauna.	Final landform providing connectivity (native woodland corridors) between adjoining native vegetation/habitat.	Independent ecological reports

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
Native Ecosystem (A) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	Ecological Rehabilitation: The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring data) the target vegetation community - i.e. Box Gum Woodland.	Cover and abundance of plant growth forms recorded from 0.04 hectare fixed monitoring plots are characteristic of the target vegetation community (e.g. PCT), or an ongoing trend toward becoming characteristic is evident from the monitoring data	Cover, abundance and height range of native plant growth forms are characteristic of, or trending towards, the target vegetation community type(s).	Before and after photos, rehabilitation monitoring reports, independent ecological reports that validate rehabilitation completion criteria have been met.
Native Ecosystem (A) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	Ecological Rehabilitation: The vegetation structure of the rehabilitation is recognisable as or is trending towards (based on ongoing monitoring data) the target vegetation community (e.g., Narrow-leaved Ironbark - cypress pine - White Box shrubby open forest (BVT 316 and PCT 592)).	Cover and abundance of plant growth forms recorded from 0.04 hectare fixed monitoring plots are characteristic of the target vegetation community (e.g. PCT), or an ongoing trend toward becoming characteristic is evident from the monitoring data	Cover, abundance and height range of native plant growth forms are characteristic of, or trending towards, the target vegetation community type(s).	Before and after photos, rehabilitation monitoring reports, independent ecological reports that validate rehabilitation completion criteria have been met.

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
Native Ecosystem (A) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	Ecological Rehabilitation: The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring data) the target vegetation community (e.g. White Box grassy woodland (BVT 226 and PCT 1383)).	Cover and abundance of plant growth forms recorded from 0.04 hectare fixed monitoring plots are characteristic of the target vegetation community (e.g. PCT), or an ongoing trend toward becoming characteristic is evident from the monitoring data	Cover, abundance and height range of native plant growth forms are characteristic of, or trending towards, the target vegetation community type(s).	Before and after photos, rehabilitation monitoring reports, independent ecological reports that validate rehabilitation completion criteria have been met.
Native Ecosystem (A) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	Ecological Rehabilitation: The vegetation composition of the rehabilitation is recognisable as the target vegetation community - i.e. Box Gum Woodland.	Native plant species recorded from 0.04-hectare fixed monitoring plots are characteristic of the target vegetation community (e.g., target PCT).	Native plant species (composition) are characteristic of the target vegetation community when compared to analogue sites. Target PCT is within the specified threshold range set in the RMP.	Before and after photos, rehabilitation monitoring reports, independent ecological reports that validate rehabilitation completion criteria have been met.

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
Native Ecosystem (A) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	Ecological Rehabilitation: The vegetation composition of the rehabilitation is recognisable as the target vegetation community - i.e., Narrow-leaved Ironbark - cypress pine - White Box shrubby open forest (BVT 316 and PCT 592).	Native plant species recorded from 0.04-hectare fixed monitoring plots are characteristic of the target vegetation community (e.g., target PCT).	Native plant species (composition) are characteristic of the target vegetation community when compared to analogue sites. Target PCT is within the specified threshold range set in the RMP.	Before and after photos, rehabilitation monitoring reports, independent ecological reports that validate rehabilitation completion criteria have been met.
Native Ecosystem (A) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	Ecological Rehabilitation: The vegetation composition of the rehabilitation is recognisable as the target vegetation community - i.e. White Box grassy woodland (BVT 226 and PCT 1383).	Native plant species recorded from 0.04-hectare fixed monitoring plots are characteristic of the target vegetation community (e.g., target PCT).	Native plant species (composition) are characteristic of the target vegetation community when compared to analogue sites. Target PCT is within the specified threshold range set in the RMP.	Before and after photos, rehabilitation monitoring reports, independent ecological reports that validate rehabilitation completion criteria have been met.

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
Native Ecosystem (A) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	Ecological Rehabilitation: The final landform will include establishment of 2,078ha of pre-mining native vegetation communities (including 544ha of Box Gum Woodland EEC)	Final rehabilitation meets requirements of sustainable native vegetation community as per Project Approval commitments.	Native plant species are characteristic of the target vegetation community when compared to analogue sites. Target PCT is within the specified threshold range set in the RMP.	GIS records of rehabilitation areas by vegetation type. Independent ecological reports that validate rehabilitation completion criteria have been met
Native Ecosystem (A) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	Ecological Rehabilitation: Levels of ecosystem function have been established that demonstrate the rehabilitation is self-sustainable.	Indicators of nutrient cycling are suitable for sustaining the target vegetation community (e.g. PCT(s))	Groundcover (eg. grasses and litter cover) are characteristic of the target vegetation community when compared to analogue sites.	Rehabilitation monitoring reports, that demonstrate long-term function of rehabilitated landform.

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
Native Ecosystem (A)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	<u>Ecological Rehabilitation:</u> Establish specific habitat features (e.g., bush rocks, tree hollows and fallen timber) for threatened species.	Habitat features are incorporated into rehabilitation areas.	Habitat features generally consistent with those found within analogue sites. Where not possible, substitution with use nest boxes.	Records of all key habitat features in rehabilitation areas.
Native Ecosystem (A) Infrastructure (I) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	<u>Land Contamination:</u> There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm.	Waste material and/or visible contamination areas on site surface.	There are no visible signs of contamination following the removal of plant, equipment and materials. Any contamination has been appropriately remediated in accordance with legislative requirements for the intended final land use. Retained dams are decontaminated in accordance with regulatory requirements. Surface layer is free of any hazardous materials.	Contamination reports. Written statement. Photographic records Waste facility receipts.

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
Native Ecosystem (A)	Infrastructure (1) Overburden Emplacement Area (4) Active Mining Area (5)	<u>Management of Waste and Process Materials:</u> Residual waste materials stored on site (e.g. Coarse rejects and other wastes) will be appropriately contained / encapsulated so it does not pose any hazards or constraints for intended final land use.	Quality assurance records for the location of rejects and depth of capping material. Records of contamination.	Visual – verification that capping, type and placement consistent with design. Survey verifies that capping placement consistent with design and settlement.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records. Structural material of any capping areas has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use.
Native Ecosystem (A) Water Storage (Excluding Final Void) (G) Infrastructure (I) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	<u>Landform Stability:</u> The final landform is stable for the long-term and does not present a risk of environmental harm downstream/downslope of the site or a safety risk to the public/stock/native fauna.	Visual/ measured/ modelled evidence of erosion/ landform stability.	Any erosion is minimal with no ongoing management and maintenance works. No evidence of active gully erosion. No evidence of excessive sediment build-up at the toe of slopes. No evidence of tunnel erosion. No active rilling. No evidence of active scouring where the runoff from rehabilitation areas discharges into natural channels.	Visual inspection records. Photograph series from photo points. Erosion surveys. Specialist consultant assessment reports. Borehole sealing records.

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
Native Ecosystem (A) Water Storage (Excluding Final Void) (G) Infrastructure (I) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	<u>Landform Stability:</u> Landform that is commensurate with surrounding natural landform and where appropriate, incorporates geomorphic design principles.	Minimal active erosion	Absence of gullies > 300 mm wide or deep or gullies stable.	Inspections and rehabilitation monitoring
Native Ecosystem (A)	Infrastructure (1) Overburden Emplacement Area (4)	<u>Removal or Infrastructure:</u> Groundwater bores and piezometers decommissioned and sealed if no longer required for monitoring or water supply purposes.	Groundwater bores and piezometers standpipes removed and sealed.	Bentonite seal installed, standpipe and piezometer 'cap' removed and cement grout installed to the surface.	Records of decommissioned and active piezometers.
Native Ecosystem (A)	Infrastructure (1)	<u>Removal or Infrastructure:</u>	Communications power supply, water supply, and water management services and infrastructure removed.	All infrastructure components should be dismantled and/or removed from the site as part of the operation unless	To be covered by a Detailed Closure Plan (prior to closure).

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
	Overburden Emplacement Area (4)	All infrastructure that is not to be used as part of the final land use is removed to ensure the site is safe and free of hazardous materials		otherwise agreed with the Resource Regulator and landholder.	Inspections and demolition reports to confirm all infrastructure has been removed.
			Offices, workshops, and other buildings removed.		Inspections and demolition reports to confirm all infrastructure has been removed.
			Fuel, chemical, explosive storage tanks, and containers removed. No contamination at site.	Noting MCCM would like to keep the sealed road at closure that goes from the Boggarbi Coal/Maules Creek turnoff to the front gate at Maules Creek. This will allow access into the site at closure and assist with firefighting access.	Contamination report confirms contamination and hazardous substances have been removed/remediated.
			Roads and rail Infrastructure removed.		Contamination report confirms contamination and hazardous substances have been removed/remediated.
Infrastructure (I)	Infrastructure (1)	<u>Retention of Infrastructure:</u> All infrastructure that is to remain as part of the final land use benefits from the relevant approvals (e.g. development consent and /	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured.	Hazards isolated and secured.	Statement provided by suitably qualified engineer. Records of remaining infrastructure for future land use. Lease agreements (if applicable)

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
		or licence/lease/binding agreement, etc)			
Infrastructure (I)	Infrastructure (1)	Retention of Infrastructure: All infrastructure that is to remain as part of the final land use is safe, does not pose any hazard to the community	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured.	Hazards isolated and secured.	Statement provided by suitably qualified engineer. Records of remaining infrastructure for future land use. Closure Plan assesses infrastructure remaining as no risk to the community.
Native Ecosystem (A) Water Storage (Excluding Final Void) (G) Infrastructure (I) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	Surface Water: Runoff water quality from mine site meets the requirements of the development consent/ Environment Protection Licence and does not present a risk of environmental harm.	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence	Runoff water quality from rehabilitation areas represents an acceptable level of change from a defined reference condition (refer to Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000). Water quality in retained dams and/or voids is suitable for the final land use.	Upstream and downstream water quality monitoring records. Water quality monitoring records.

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
Water Storage (Excluding Final Void) (G)	Water Management Area (3)	<u>Surface Water:</u> Water quality non-polluting and appropriate for conservation end land use.	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence	Runoff water quality from rehabilitation areas represents an acceptable level of change from a defined reference condition (refer to Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000). Water quality in retained dams and/or voids is suitable for the final land use.	Upstream and downstream water quality monitoring records. Water quality monitoring records.
Native Ecosystem (A) Infrastructure (I) Final Void (J)	Infrastructure (1) Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	<u>Groundwater:</u> Groundwater quality meets the requirements of the relevant development consent(s) (including associated Management Plans) and does not present a risk of environmental harm.	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000	Water quality generally consistent with ANZECC guidelines for specific environment.	Independent hydrological assessment report.
Native Ecosystem (A)	Infrastructure (1)	<u>Groundwater:</u> Impacts to groundwater regime are within range as	Groundwater levels and flows	If there were any impacts to groundwater levels, groundwater flow these would be generally consistent with	Independent hydrological assessment report.

Final Land Use Domain	Mining Domain	Rehabilitation Objective	Indicator *(Specific attribute associated with the objective)*	Completion Criteria *(benchmark for the indicator, based on analogue data where appropriate)*	Validation Method *(evidence that the benchmark has been achieved)*
Infrastructure (I) Final Void (J)	Water Management Area (3) Overburden Emplacement Area (4) Active Mining Area (5) Other (Stockpiled Material) (8)	per the development consent(s) (including associated Management Plans).		development consent(s) (including associated Management Plans).	
Water Storage (Excluding Final Void) (G) Final Void (J)	Water Management Area (3)	<u>Water approvals</u> Structures that take or divert water such as final voids, dams, levees etc. are appropriately licensed (e.g. under the Water Management Act 2000) and where required ensure sufficient licence shares are held in the water source(s) to account for water take.	Final landform considers advice from relevant Government Agency whether sufficient licence shares are available in the water source to account for water stored in voids and dams in the proposed final landform.	Water approvals / licences are granted by relevant NSW Government Agency.	Confirmation from relevant Government Agency that relevant water approvals / licences are able to be granted.

* Leard Forest Regional Biodiversity Strategy Stage 2 (Umwelt, 2017) Table 2.3 Strategic Biodiversity Performance Measures and Preliminary Completion Criteria on Page 31 for Active Revegetation.

** Based on OEH (2017) Visual Information Database for Export of Plant Community Types (PCT) Benchmarks for Brigalow Belt South (BBS) 1838 White Box grassy woodland of the Nanderwar and BBS Bioregions and 592 Narrow-leaved Ironbark-cypress pine-White Box shrubby open forest in the BBS Bioregion and Nandewar Bioregion.

Table 10: Specific BVT and PCT Targets - Since Revegetation

Domain Objective	Performance Indicator	Completion Criteria						
Phase – Ecosystem and Land Use Establishment		**Time since initial revegetation**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Woodland rehabilitation revegetation for White Box grassy woodland	BVT 226 and PCT 1383 Native species richness	Mean Target	1	2	3	4	5	5
		Minimum Target	1	1	2	3	3	4
	BVT 226 and PCT 1383 Native Overstory Cover	Mean Target	1%	3%	4%	5%	6%	8%
		Minimum Target	0%	0%	0%	0%	0%	0%
	BVT 226 and PCT 1383 Native Mid-story Cover	Mean Target	0%	1%	1%	1%	1%	2%
		Minimum Target	0%	0%	0%	0%	0%	0%
	BVT 226 and PCT 1383 Native Groundcover (grasses	Mean Target	2%	4%	6%	8%	10%	12%
		Minimum Target	2%	3%	5%	6%	8%	9%
	BVT 316 and PCT 592 Native Species Richness	Mean Target	1	2	4	5	6	7
		Minimum Target	1	2	3	4	5	6
	BVT 316 and PCT 592 Native Overstorey Cover	Mean Target	2%	4%	6%	8%	10%	12%
		Minimum Target	0%	0%	0%	0%	0%	0%
	BVT 316 and PCT 592 Native Mid-storey Cover	Mean Target	1%	3%	4%	5%	6%	8%
		Minimum Target	0%	1%	1%	1%	2%	2%
	BVT 316 and PCT 592 Native Groundcover (Grasses)	Mean Target	2%	3%	5%	6%	8%	9%
		Minimum Target	1%	2%	3%	4%	5%	6%

Table 11: Specific BVT and PCT Targets – Benchmarks

Domain Objective	Performance Indicator	Completion criteria				
Phase – Ecosystem and Land Use Development		**Benchmarks**	**RBS* (80%) BVT NA 226**	**BVT NA 226**	**PCT BBC 1383****	**Local Reference**
Woodland rehabilitation revegetation for White Box grassy woodland	BVT 226 and PCT 1383 Native Species Richness	Mean Target	18	23	33	60
		Minimum Target	13	18	28	55
	BVT 226 and PCT 1383 Native Overstorey Cover	Mean Target	N/A	25%	17%	13%
		Minimum Target	N/A	6%	N/A	N/A
	BVT 226 and PCT 1383 Native Mid-storey Cover	Mean Target	N/A	5%	2%	4%
		Minimum Target	N/A	0%	N/A	N/A
	BVT 226 and PCT 1383 Native Groundcover (Grasses)	Mean Target	N/A	40%	45%	38%
		Minimum Target	N/A	30%	N/A	N/A
	BVT 316 and PCT 592 Native Species Richness	Mean Target	24	30	35	N/A
		Minimum Target	19	25	30	N/A

Domain Objective	Performance Indicator	Completion criteria				
Phase – Ecosystem and Land Use Development		**Benchmarks**	**RBS* (80%) BVT NA 226**	**BVT NA 226**	**PCT BBC 1383****	**Local Reference**
	BVT 316 and PCT 592 Native Overstorey Cover	Mean Target	N/A	40	59	N/A
		Minimum Target	N/A	25	N/A	N/A
	BVT 316 and PCT 592 Native Mid-storey Cover	Mean Target	N/A	25	30	N/A
		Minimum Target	N/A	6	N/A	N/A
	BVT 316 and PCT 592 Native Groundcover (Grasses)	Mean Target	N/A	30	22	N/A
		Minimum Target	N/A	20	N/A	N/A

4.2 Rehabilitation Objectives and Rehabilitation Completion Criteria – Stakeholder Consultation

Prior to granting Project Approval 10_0138, comprehensive stakeholder consultation was completed which was mainly associated with obtaining licences, leases, permits and environmental management plan preparation. This included consultation with Local, State and Commonwealth Government agencies, local landholders, residents and Registered Aboriginal Parties (RAPs). As a requirement of Schedule 4, Condition 7 of Project Approval 10_0138, MCCM has established a Community Consultative Committee (CCC) which holds meetings quarterly.

MCCM has also undertaken specific consultation in regard to post mining land use, rehabilitation objectives and rehabilitation completion criteria. This involved consultation with relevant government agencies such as:

- DPHI;
- Resources Regulator;
- FCNSW;
- Biodiversity Conservation and Science (BCS);
- North West Local Land Services (NWLLS); and
- Narrabri Shire Council.

Consultation relevant to rehabilitation and post mining land use that has occurred prior to 2022 is detailed in Table 12.

Table 12: Stakeholder Consultation Prior to 2022

Date	Stakeholder	Details of Consultation	Actions by MCCM
2013	DPE	A copy of the MOP was sent out for comment.	Comments received from these agencies were incorporated into the second edition of the MOP where relevant.
2013	FCNSW	A copy of the RMP MOP was sent out for comment.	
2013	DPIE Water	A copy of the RMP MOP was sent out for comment.	
2013	North West LLS	A copy of the RMP MOP was sent out for comment.	
2013	Narrabri Shire Council	A copy of the RMP MOP was sent out for comment.	
2013	BCD	A copy of the RMP MOP was sent out for comment.	

All consultation that has been undertaken in relation to post mining land use, rehabilitation objectives and completion criteria are summarised in Table 13. This RMP has been sent out to cover Schedule 3 Condition 73 of the Project Approval. See Appendix B for response to 2022 consultation.

Table 13: Stakeholder Consultation as of 2025

Date	Stakeholder	Details of Consultation	Actions by MCCM
July 2022	DPE	A copy of the RMP was sent to this department for comment.	No comments received after July 2022 consultation.
July 2022	Resources Regulator	A copy of the RMP was sent to this department for comment.	Response provided in the 2023 RMP update. See Appendix B with MCCM comments.
July 2022	Forests NSW	A copy of the RMP was sent to this department for comment.	Response provided in the 2023 RMP update. See Appendix B with MCCM comments.
July 2022	NSW DPE Water	A copy of the RMP was sent to this department for comment.	Response provided in the 2023 RMP update. See Appendix B with MCCM comments.
July 2022	BCS	A copy of the RMP was sent to this department for comment.	Response provided in the 2023 RMP update. See Appendix B with MCCM comments.
July 2022	NWLLS	A copy of the RMP was sent to this department for comment.	Responded with no comments following July 2022 consultation.
July 2022	Council	A copy of the RMP was sent to this department for comment.	Response provided in the 2023 RMP update. See Appendix B with MCCM comments.
March 2025	Resources Regulator	A copy of the RMP was sent to this department for comment.	Responded with no comments following March 2025 consultation.
March 2025	Forests NSW	A copy of the RMP was sent to this department for comment.	Response provided directly to Forestry NSW following comment on 2025 Consultation
March 2025	NSW DPE Water	A copy of the RMP was sent to this department for comment.	Responded with updated set of departmental outcomes, the 2025 RMP has been developed to

Date	Stakeholder	Details of Consultation	Actions by MCCM
			address these outcomes.
March 2025	BCS	A copy of the RMP was sent to this department for comment.	Responded with minor comments which have been addressed in the 2025 RMP
March 2025	NWLLS	A copy of the RMP was sent to this department for comment.	No response was received to the request for consultation
March 2025	Council	A copy of the RMP was sent to this department for comment.	Responded with no comments following March 2025 consultation.

5. FINAL LANDFORM AND REHABILITATION PLAN

This section outlines the Final Landform and Rehabilitation Plans (FLRP's) for MCCM which have been prepared as per the RMP Form and Way Document.

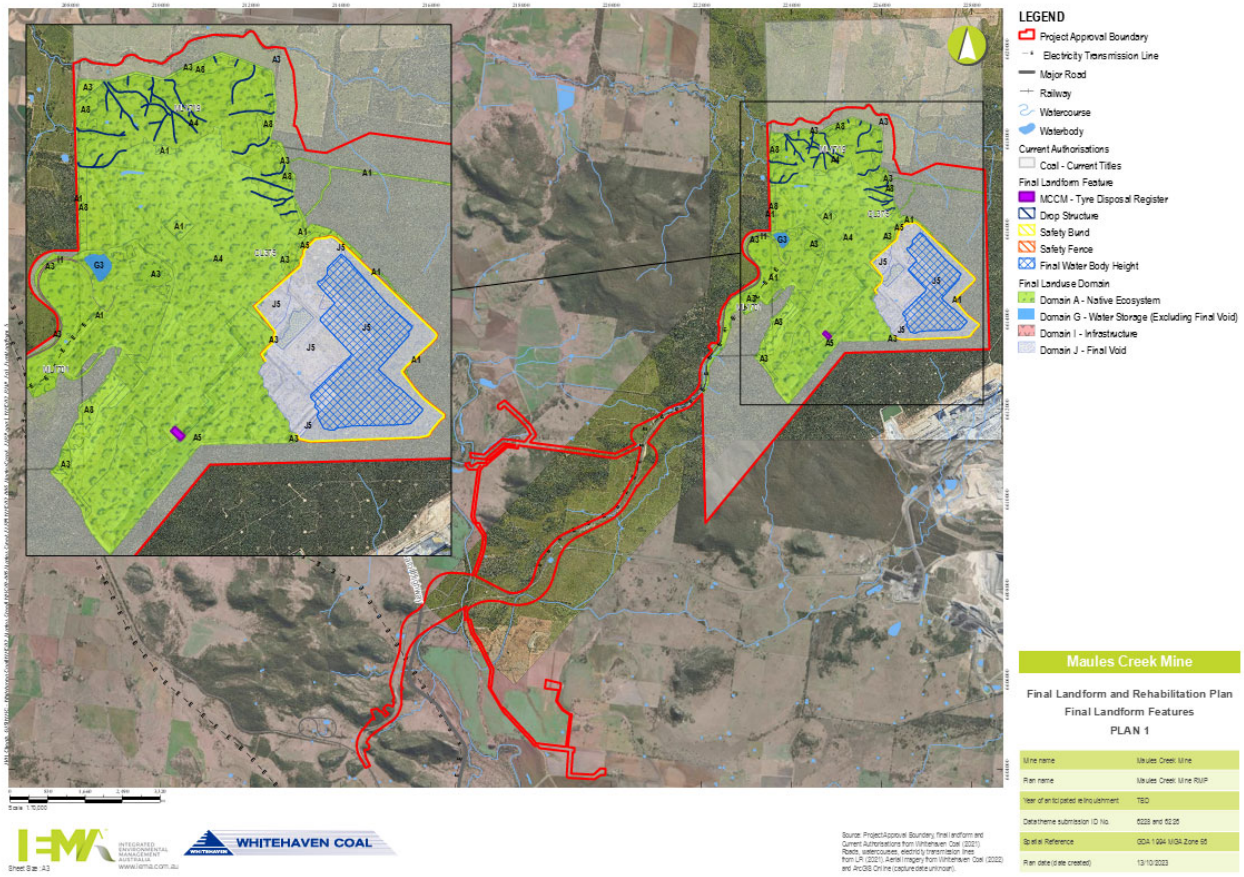
The two plans include:

Plan 1: Final Landform Features.

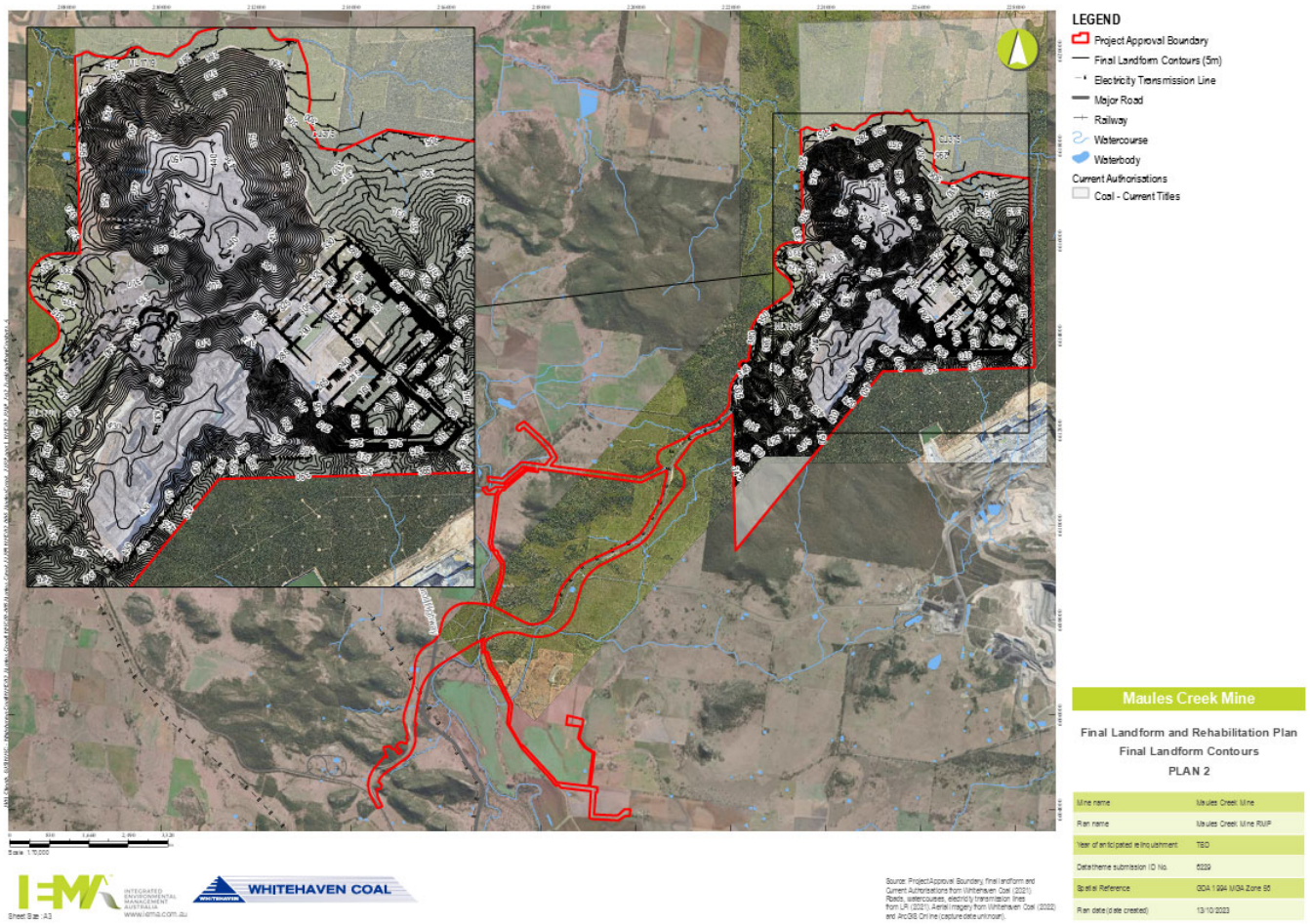
Plan 2: Final Landform Contours.

5.1 Final Landform and Rehabilitation Plan – Electric Copy

The FLRP's for MCCM were approved on 13 October 2023 and are included as PDFs below.



Plan 1: Final Landform Features



Plan 2: Final Landform Contours

6. REHABILITATION IMPLEMENTATION

6.1 Life of Mine Rehabilitation Schedule

The RMP Form and Way document states that this section should describe the rehabilitation schedule over the life of the mine, from the commencement of the RMP until lease relinquishment. The life of mine rehabilitation schedule must include a series of plans illustrating the proposed mine layout and sequence of progressive rehabilitation across the leasehold area at a minimum of five-yearly intervals until completion of mining and achievement of the final land use. These plans are illustrated in Figure 1D to 1G and detail end of life progressive rehabilitation for 2030 (5 years' time), 2034 (end of current approved mine life), 2039 (5 years after end of mine life) and 2044 (10 years after end of mine life).

Detailed mine planning is completed annually and outlines proposed mining/disturbance and rehabilitation areas. Detailed figures are prepared annually as part of the Annual Rehabilitation Report and Forward Program, with these outlining activities over the next three years. Beyond that, the site is working on detailed mine planning, but the information is not as detailed (conceptual).

The bulk of rehabilitation works will occur toward the end of project life; however progressive rehabilitation will be undertaken where it is possible to do so throughout the life of mine.

A summary of the proposed timing for progressive rehabilitation activities at MCCM is provided in Table 14.

Table 14: Progressive Rehabilitation Timing

Aspect	Timing
Decommissioning of key infrastructure	There is no future construction of infrastructure planned for site. All surface infrastructure (assets, buildings, services) is required for the life of the operation. Thus, decommissioning of infrastructure will not commence until the completion of rehabilitation (i.e. final shaping, topsoiling and seeding) at site. There is no underground infrastructure at site. Further decommissioning information is provided in Section 6.2.2. Processing facilities and rail infrastructure are not required for the rehabilitation phase and will subsequently be decommissioned after the last bucket of coal and following removal of infrastructure. The sealed road from the Boggabri Coal/Maules Creek turnoff to the front gate at Maules Creek will remain at closure.
Decommissioning of surface extraction areas	The decommissioning of surface extraction areas will be completed in 2035 once mining has ceased at site. There will be a final void at closure. Some backfilling of overburden will occur through the progressive rehabilitation process.
Key final landform establishment activities	At closure, there will be a single pit, and the final void highwalls and low walls will be shaped to ensure long-term stability and safety. The mine design incorporates measures to maintain wall stability, which are monitored throughout operations. Stability monitoring will also continue after mining ceases, with the specific timeframe for post-mining monitoring yet to be determined. The final landform must meet the required standards of being safe, stable, and non-polluting, and stabilisation works will be undertaken if necessary. For overburden areas, the site conducts progressive rehabilitation during operations. Additional rehabilitation works will be completed following the final extraction of coal to ensure all disturbed areas are properly restored. The site has no tailings dams, thus removing the need for tailings management as part of closure planning.
Investigations to address knowledge gaps	A Final Void Management Plan is required to be completed by December 2026. In addition, an Internal Closure Plan must be prepared by 2030. This Closure Plan will include a series of technical investigations and studies designed to guide the site's

Aspect	Timing
	rehabilitation and final closure. These studies will ensure that closure activities are informed, effective, and consistent with long-term environmental and operational objectives.
Assumptions and principles	The proposed rehabilitation schedule has been based on the following assumptions: Reaching the projected production milestones; The stages of the schedule will promote progressive rehabilitation.
Justification for delayed rehabilitation	Whitehaven has not identified any factors that would delay rehabilitation at site.

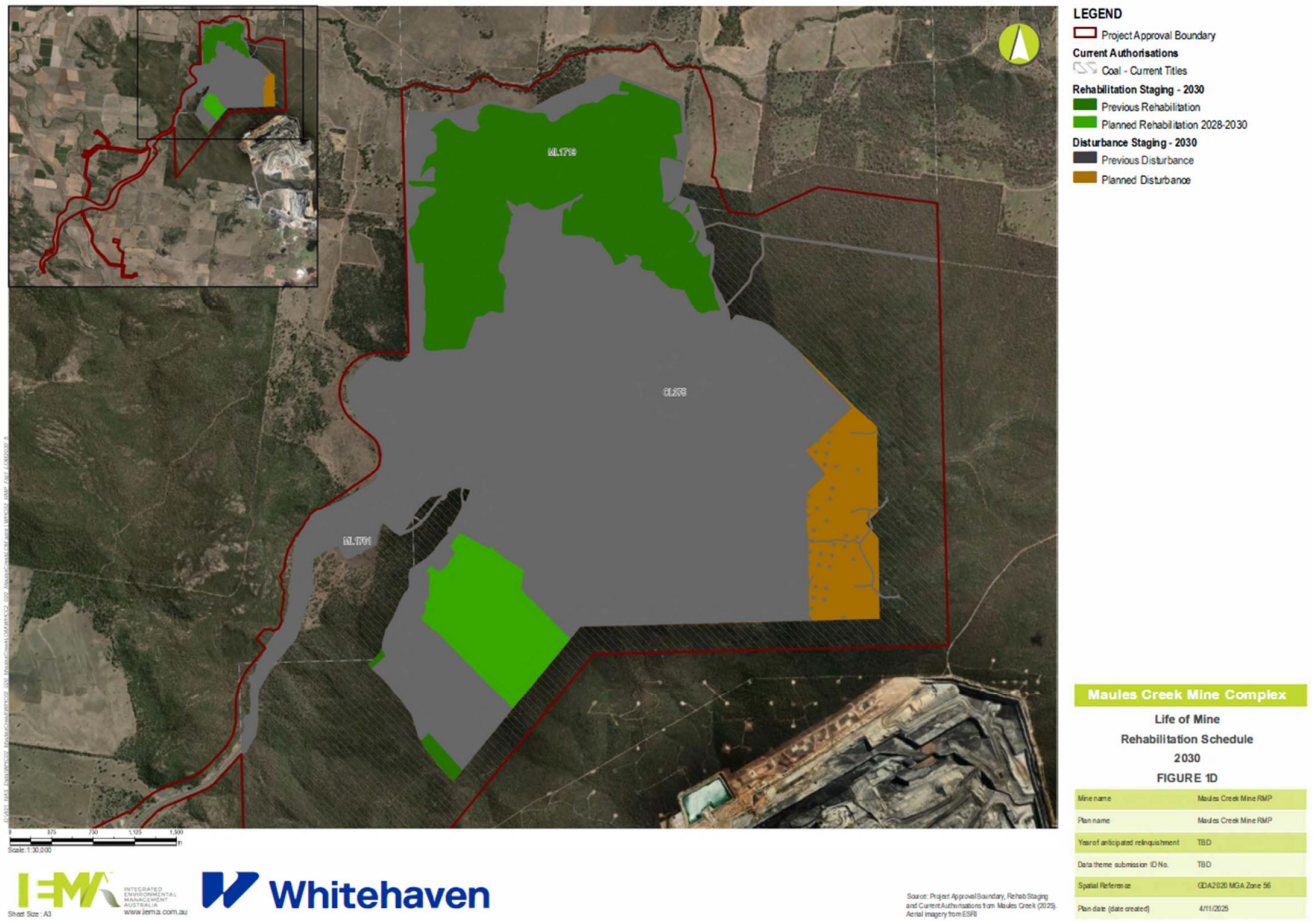


Figure 1 D: Progressive Mine Rehabilitation 2030

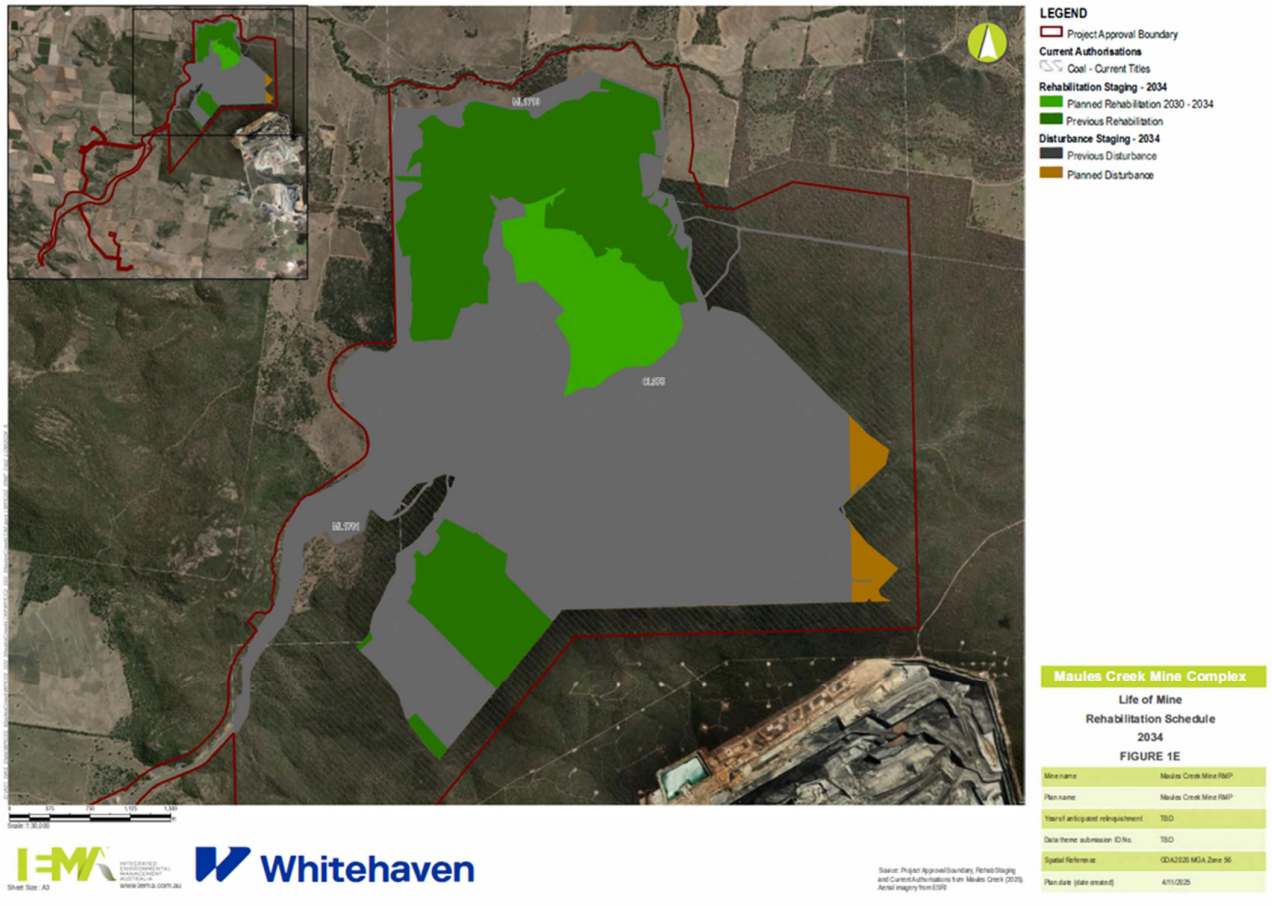


Figure 1 E: Progressive Mine Rehabilitation 2034 (end of current approved mine life)

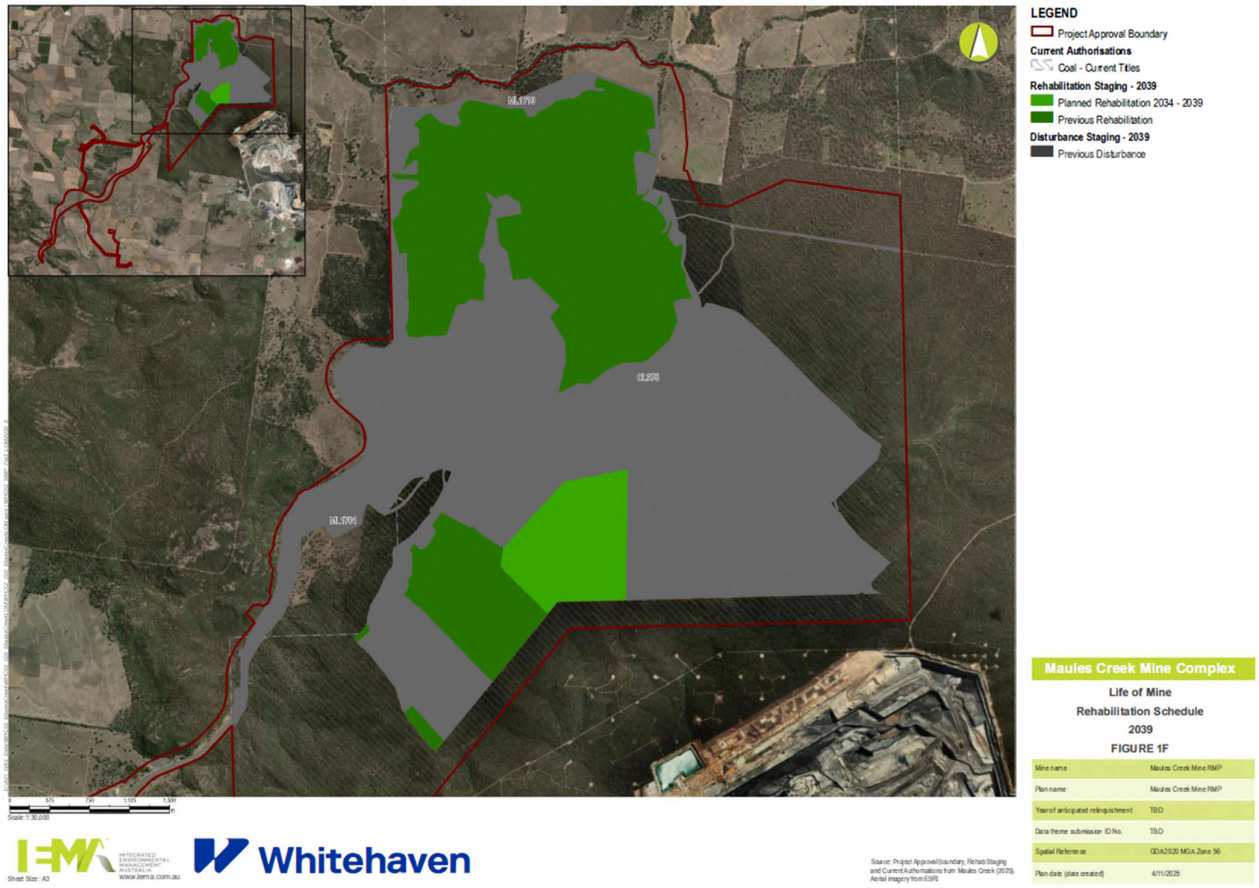


Figure 1 F: Progressive Mine Rehabilitation 2039 (5 Years after end of mine life)

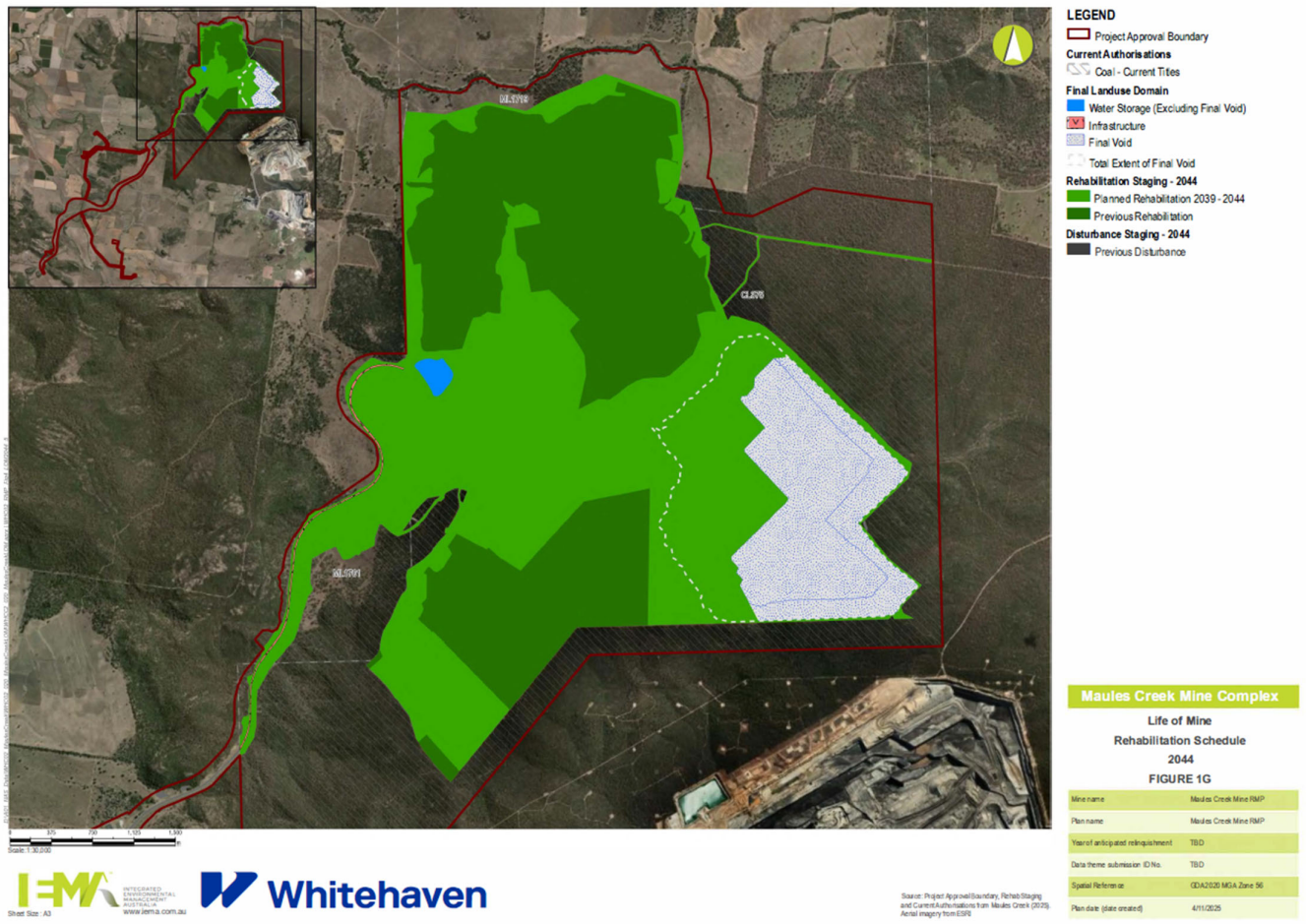


Figure 1 G: Progressive Mine Rehabilitation 2044 (10 Years after end of mine life)

6.2 Phases of Rehabilitation and General Methodologies

The final land use objectives will be achieved through a series of conceptual stages listed below:

- Active – The RMP Form and Way document states in the context of rehabilitation, land associated with mining domains is considered 'active' for the period following disturbance until the commencement of rehabilitation.

- Stage 1: Decommissioning – removal of infrastructure associated with mining activities including preparation plants, hard stand areas, buildings, contaminated materials, hazardous materials. The RMP Form and Way document states that this phase of rehabilitation may also include studies and assessments associated with decommissioning and demolition of infrastructure or works carried out to make safe or 'fit for purpose' built infrastructure to be retained for future use(s) following lease relinquishment.

- Stage 2: Landform Establishment – The RMP Form and Way document states that this phase of rehabilitation consists of the processes and activities required to construct the approved final landform (as per the development consent and, for large mines, the approved Final Landform and Rehabilitation Plan). In addition to profiling the surface of rehabilitation areas to the approved final landform profile this phase may include works to construct surface water drainage features, encapsulate problematic materials such as tailings (none at MCCM), and prepare a substrate with the desired physical and chemical characteristics (that is, rock raking or ameliorating sodic materials). The landform design and construction part of this phase incorporates gradient, slope, aspect, drainage, substrate material characterisation and morphology.

- Stage 3: Growing Media Development – The RMP Form and Way document states that this phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short-lived pioneer species). This phase may include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion. Additional characterisation of materials e.g. subsoils, topsoils, organic additives and overburden surface is usually required in this phase to cross check data from the earlier phases.

- Stage 4: Ecosystem and Land Use Establishment – This RMP Form and Way document outlines that his phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform. For vegetated land uses this rehabilitation phase includes establishing the desired vegetation community (e.g. Seeding or tube stocking) and implementing land management activities such as weed control. This phase of rehabilitation may also include habitat augmentation such as installation of nest boxes.

- Stage 5: Ecosystem and Land Use Development – The RMP Form and Way document outlines that this phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving rehabilitation objectives, completion criteria and the Final Landform and Rehabilitation Plan. Completion criteria for this phase will include components of floristic structure, nutrient cycling recruitment and recovery, community structure and function which are the key elements of a sustainable landscape.

- Stage 6: Rehabilitation Completion – The RMP Form and Way document outlines that this final phase of rehabilitation occurs where a rehabilitation area has achieved the final land use for the mining area as stated in the approved rehabilitation objectives and the approved rehabilitation completion criteria and spatially depicted in the approved Final Landform and Rehabilitation Plan. Rehabilitation areas may be classified as complete when the NSW Resources Regulator has determined in writing that rehabilitation has achieved the final land use following submission of the relevant application by the lease holder.

The stages listed above and methodologies (where relevant) are discussed in more detail in the following sub-sections.

6.2.1 Active Mine Phase

This subsection summarises the risks and opportunities for rehabilitation associated with the active mining phase across the mining domains. The subsections have been prepared in accordance with the RMP Form and Way document.

a) Soils and Materials

Soil management procedures are described in the MCCM *Soil Management Protocol* which has been designed to meet the requirements of the State and Commonwealth approvals. Below is a summary of the general processes to soil stripping, stockpiling, characterising, quantifying, and assessing soil quality:

- **Soil Stripping:** Soil will be stripped depending on the soil types/groups and in accordance with the individual Soil Stripping and Placement Plans developed for each area. The process for stripping topsoil is summarised below:
    - The area to be stripped of soil will be clearly demarcated and surveyed;
    - Soil will be in a slightly moist condition during stripping;
    - Soil will not be stripped during excessively wet or dry conditions;
    - Direct placement will occur when planning permits, and the land is prepared and ready to receive topsoil during stripping activities. In this process, topsoil will be stripped from its in situ location, transported to the rehabilitation area, spread, and appropriately seeded and ameliorated. This practice optimizes the use of fresh topsoil but is only feasible when rehabilitation works, and topsoil stripping activities align. When direct placement is not possible, the stripped topsoil will be stockpiled for future use in rehabilitation efforts; As part of the planning process, temporary drainage, sediment control and structures to prevent erosion will be developed for each area, if required; and
    - Soil collection will be undertaken by scrapers or loading into rear dump trucks.

    Stripped soil will be used in rehabilitation areas where the vegetation community corresponds with the initial soil vegetation community. In instances where soil cannot be used immediately for rehabilitation purposes, it will be stockpiled in accordance with vegetation community type.
- **Soil Stockpiling:** The Soil Stripping and Placement Plans will detail the stockpiling requirements for each area to be cleared. Soil stockpiling will be undertaken in accordance with the following process:
    - Stockpiles will be located in areas away from drainage lines and/or drainage will be diverted around stockpiles to prevent erosion;
    - Sediment controls will be installed downstream from stockpiles to prevent contamination of clean water;
    - Stockpile height will be limited to the practicable minimum;
    - New stockpiles will be continually created and old ones used in order of age;
    - More erodible materials will be placed on flatter areas to minimise potential erosion;
    - Stockpile surfaces shall be contour scarified in order to promote infiltration and minimise erosion until vegetation is established; and
    - Stockpiles will be seeded with native grasses tree or shrub species to protect the stockpile from raindrop splash erosion, aerate the soil to reduce anaerobic conditions, enhance organic carbon levels and suppress weeds.
- **Characterisation:** The MCCM Mine Site Rehabilitation Management Plan (MSRMP) states that there are nine soil types at the MCCM site, and each type will be stripped and re-used based on their characterisations. This includes recommended stripping depths, specific management measures and suggested amelioration and fertiliser rates.

    Subsoil will be characterised by agronomic parameters (e.g. pH, EC, Cation Exchange Capacity (CEC), and metals). Soil sampling will determine if the soil is suitable for rehabilitation, requires amelioration and/or selective handling and placement. Suitability and parameters used to classify soil types are detailed in the *Soil Management Protocol*.

    Unsuitable subsoil and spoil, including Potentially Acid Forming (PAF) material, will be capped with a minimum of 5m of suitable inert spoil (compacted depth), or capped to a depth greater than the minimum rooting depth of the vegetation. Unsuitable spoil and subsoil locations will be detailed in the individual Soil Stripping and Placement Plans.
- **Soil Respreading:** Stockpiled soil will be assessed for weed infestation prior to re-spreading. If determined to be unsuitable, stockpiled soil will be buried as mentioned above. If reusable, stockpile soil re-spreading will be undertaken with the following measures:
    - When planning soil re-spreading, MCCM will consider the information contained in the stockpile inventory (e.g. age, amount, type), climatic conditions, location and distance of the stockpile to the rehabilitation area, pre-mining vegetation communities, and vegetation communities for final land use in the rehabilitation area.
    - During the removal of the soils from stockpiles, care will be taken to minimise structural degradation of the soils;

- Material will be spread in even layers in appropriate thickness and will consider the soil depth information acquired in the pre-stripping sampling. Monitoring and research studies will continue to be undertaken to refine soil depth and rehabilitation application for each soil type;
- All soils will be lightly ripped prior to seeding. This will be conducted on the contour and will be managed to minimise the potential for unsuitable spoil material being ripped up to the surface; and
- Slow-release fertiliser will be applied prior to seeding while the surface is being lightly scarified to create an optimal seed bed. Fertiliser type and application rates will be used to minimise weed invasion.

- **Soil Amelioration:** The *Soil Management Protocol* provides suggested amounts of ameliorant application rates for the soil types at MCCM. Soil testing results will determine if physical and/or chemical ameliorant applicant is required. Additional soil testing following revegetation will be undertaken to determine if further amelioration is required
- **Soil Balance:** Soil stripped from each area will be recorded in a centralised inventory. The soil balance will be updated and reviewed regularly as surveys are conducted and progressive stripping and rehabilitation is undertaken
- **Monitoring, Responsibility and Reporting:** Overall soil management is the responsibility of Whitehaven. However, all staff and contractors are responsible for ensuring they follow the required processes and procedures outlined in the Soil Management Protocol. This includes ensuring all necessary permits, approvals and a Soil Stripping and Placement Plan are in place prior to any soil stripping activities.

  Management practices will be revised and updated based on operational experience and where performance/outcome improvements are identified. Soil stockpiling and rehabilitation will be assessed and reported annually as part of the MCCM Annual Review.

Section 4 outlines completion criteria related to soil materials and management.

The RMP Risk Assessment identified soil management generally as low risk. However, the risk of losing topsoil properties due to rehandling or failure to collect the soil was rated as a medium risk.

b) Flora

Biodiversity will be managed at MCCM in accordance with the Biodiversity Management Plan (BMP) and the Biosecurity Act 2015. In addition, weed management will be implemented to align with the Northwest Regional Strategic Weed Management Plan (NWRSWMP) 2017-2022 and in accordance with the MCCM Weed Management Procedure.

In summary, flora management will involve:

- The protection of threatened flora species such as *Dichanthium setosum* and *Thesium australel* on the MCCM offset properties of Wirradale, Wongala and Mt. Lindesay;
- Seed collection, management and storage will be undertaken in consideration with the relevant Florabank guidelines and current best practice methods;
- Rare seeds and species that are difficult to grow will be propagated in a nursery. Propagation of seedlings should be carried out in nurseries that can handle commercial quantities of seeds;
- Species that are known to reliably establish from sown seedlings will be included in direct seeding operations. This will be undertaken by a suitably qualified operator;
- Translocation programs have been prepared for *Tylophora linearis*, *Pomaderris queenslandica* (Scant Pomaderris) and Pultenaea imminuta. The programs include seed collection, propagation and translocation of these species with annual reports documenting the implementation progress;
- Weed management will be carried out by personnel who hold relevant and valid licences/permits for weeding works. Weed control techniques will include physical removal and herbicide application; and
- Feral animals will be controlled through ground shooting, baiting, fumigation, and warren ripping. These activities will be done by mine staff who hold relevant and valid licences/permits or appropriate Pest Control Contractors as required.

MCCM is approved to remove 544 ha of White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland critically endangered ecological community (CEEC) within the project area under Condition 1 of EPBC 2010/5566. Revegetation will

include no less than 1,665 ha of native forest and woodland in the project area, including 544 ha using species consistent with Box-Gum Woodland in accordance with Condition 25 of EPBC 2010/5566.

Section 4 outlines completion criteria related to flora management.

The RMP Risk Assessment identified flora management as low risk.

Control of Weeds

Environmental and noxious weeds can have detrimental effects on native remnant vegetation and have the potential to compromise revegetation efforts. Weed management of the rehabilitation areas will be aimed at controlling the occurrence and spread of environmental (e.g. Weeds of National Significance) and noxious weeds whilst encouraging native species. The long-term objective is to reach a stage where the rehabilitation areas only require a low level of weed control and where the native vegetation is not inhibited by the presence of weeds.

The implementation of measures that favour the restoration of healthy native vegetation that outcompetes weed species can also be an effective method of weed management.

The weed control program will involve:

- identifying weeds;
- application of weed control techniques in areas requiring weed control;
- follow-up monitoring of weed control; and
- follow-up inspection weed control as required.

Weed control will be undertaken for the targeted weed species based on seasonal conditions or identification. Follow-up weed control will be undertaken, as required, in areas that have received past primary weeding treatments. Follow-up treatments ensure pressure is maintained on weeds, assisting regenerating or planted native plants to out-compete weed species.

During the vegetation establishment period weed management will be minimised as the weeds provide a cover and act in holding the spoil in place. Once native vegetation begins to establish it will out compete the weeds and exotic cover should reduce. If a reduction of weeds is not identified at this stage weed TARPS will be activated.

The RMP Risk Assessment identified flora management as low risk.

c) Fauna

As above, fauna will be managed in accordance with the MCCM BMP and the Biosecurity Act 2015.

A fauna pre-clearing survey will be conducted prior to clearing. Habitat features that have a high potential to support native fauna species will be identified prior to any clearing activities. These include significant rock outcrops and crevices, large boulders, nests and in particular trees bearing hollows that have potential to contain species such as bats, gliders, possums, reptiles, and birds. Trees containing hollows or nests that have a high potential to contain fauna will be identified, recorded, and flagged with fluorescent marking tape. Within one week prior to clearing trees, a pre-clearing fauna survey will be conducted by the suitably qualified ecologist for the presence of fauna species to identify and minimise impacts to resident fauna. The location of suitable nearby habitat for the release of fauna that may be encountered during the pre-clearing process will be identified and marked on a map. Wildlife relocation beyond the coal lease boundary within the Leard State Forest will be done in accordance with a relevant permit from FCNSW.

A two-stage clearing process will be used to minimise potential impacts on fauna.

1. Clearing will commence following the identification of potential habitat trees by the suitably qualified ecologist. Trees or other marked with an “H” will not be cleared during the first stage; however all vegetation around the tree will be so that the tree is isolated. Other habitat features marked with an “H”, such as logs and log piles, will be supervised during clearing.
2. Identified habitat trees will be left to stand overnight after stage 1 clearing to allow resident fauna to voluntarily move from the area. Then, the habitat trees will be cleared using the following protocols:
    - If possible, trees marked as containing hollows will be shaken by machinery prior to clearing to encourage any animals remaining to leave the hollows and move on;

- Use a bulldozer to start pushing the tree over. Move the bulldozer over the roots and continue *gently* pushing the tree over. The tree should not fall heavily to the ground;
- Remove branches with hollows and sections of trunk and set aside for immediate transfer to a storage area for eventual placement within rehabilitation areas (once available);
- The suitably qualified ecologist will investigate all hollows for the presence of fauna following felling of the tree; and
- The felled habitat tree will be left overnight to allow any remaining fauna time to leave the hollows and move on.

A selection of hollow-bearing trees, hollow-bearing logs and rocks will be salvaged for reuse in rehabilitation areas and/or selected recipient sites within nearby offsets that require enhancements. Such materials vary in quality and quantity among different parts of the MCCM Project Boundary. Whilst some woody materials provide a valuable habitat resource for native fauna, others are not suitable for salvage because they are structurally unsound and/or decayed to the extent that they may not survive felling, relocation and replacement on the recipient site.

Prior to clearing, suitable salvage items will be identified, recorded, flagged with fluorescent marking tape, and marked with a large (>1 m) “S” using spray paint on two sides of the tree. The following criteria will be applied as part of the selection process:

- **Hollow trees** will be considered for salvage based on structural integrity, number and size of hollows. Hollows to be salvaged will include a range of diameter sizes. Ideally, hollows will be in trunks or solid living branches to maximise the chance that they would survive the felling process. Trees will be favoured if single stemmed to ensure that they would remain intact during felling. Stags (dead trees) will be selected if they appear solid and have good hollows in the trunk.
- **Woody ground debris** (fallen timber) will be selected based on size, structural integrity and presence of good hollows. Larger logs (in both length and girth) will be typically selected with large hollows (i.e. large diameter hollows through the length of the stem or at least a significant portion) through the stems. Logs that had been felled during past forestry activities will be selected rather than old naturally fallen logs because these are typically better preserved (having fallen prior to attack by insects etc).
- **Trees and fallen logs without hollows**. It is also intended that a number of trees without hollows, or large logs in good condition, will be collected for retention in addition to those marked by ecologists during pre-clearing. As these trees/logs do not require identification by ecologists, they can be selected at random during clearing and stock-piled to provide additional habitat features in rehabilitated land.
- **Large flat or creviced rocks** (>500 mm width) that appear solid enough to survive translocation will be considered for translocation to rehabilitation or offset sites.

In areas where few hollow trees or logs are present, most of the habitat features are likely to be marked for collection. In areas where hollows and logs were abundant, only those with significant value as habitat features (as described above) will be marked for retention as habitat. All habitat features selected for salvage will be fully itemised within the Habitat Resource Recovery Inventory.

Section 4 provides completion criteria related to fauna.

The RMP Risk Assessment identified fauna as a low risk.

Control of Feral Animals

The goal of feral animal management in the rehabilitation is to ensure that impacts to native species, existing vegetation and rehabilitation efforts caused by feral animals are minimised and managed. Feral animals will be controlled within all rehabilitation areas with the long-term objective being to reach a stage where the conservation management areas only require a low level of feral animal control and where the biodiversity value of native vegetation and rehabilitation efforts and restorations areas are not at high risk from feral animal.

Feral animal management will focus on the main feral animals recorded in mining leases. However, if new feral animals are found during monitoring those new feral animals will also be managed in accordance with the MCC Biodiversity Management Plan. The control of feral animals is intended to be adaptive and will be informed/reviewed based on the findings from the Feral Animal Monitoring Program. The control program will also consider advice from neighbouring landowners regarding observations of target feral animals upon offset areas.

Control measures will be implemented by mine staff or by an appropriate Pest Control Contractor(s) as required. All personnel involved in feral animal control will be required to hold relevant and valid licences/permits, including any relevant chemical licences for pesticide use or a firearms licence for shooting. The Humane Pest Animal Control: Code of Practice and Standard Operating Procedures (DPI,

2013, or its revision) will be followed.

d) Rock/Overburden Emplacement

Section 4.4 of the draft FVMCP states that Overburden Emplacement Areas (OEAs) (Domain 4A) includes out-of-pit OEAs and in-filled open cut areas. As mentioned in the FVMCP, OEAs will be progressively rehabilitated to minimise environmental impacts (e.g. dust emissions, biodiversity and visual amenity), and to reduce the size of the mine disturbance area.

OEAs will be re-shaped to be free draining and reflect the local topography and integrate with the surrounding landforms. Key landform objectives include:

- Re-profile OEA batters to a stable overall slope of approximately 10º;
- Develop a free-draining landform that integrates with the surrounding catchments and channelling water towards natural drainage lines of Back Creek.

Drainage structures will be designed to minimise erosion, be stable over the long-term and convey runoff from OEA catchments. Drainage berms will be implemented on batter slopes to limit effective slope lengths. Batter slopes will be deep-ripped along the contour of the slope following the application of topsoil.

Runoff will be collected in toe drainage or sediment dams prior to being discharged into the drainage lines of Back Creek and Whiskey Creek. A conceptual drainage design has been developed for the Northern OEA and adjoining MIA. A final landform drainage design will be developed by Whitehaven and included in the final 2026 FVMCP. Design controls and erosion and sediment control structures are detailed in the MCCM *Water Management Plan.*

Detailed soil surveys are undertaken within the disturbance footprint prior to the stripping of topsoil. MCCM will monitor and record topsoil volumes to ensure that appropriate volumes are recovered for later use in rehabilitation areas.

Revegetation of OEAs will include native woodland and forest species which will consist of, but not be limited to the following vegetation communities:

- White Box – White Cypress Pine Grassy Woodland (associated with White Box-Yellow Box- Blakely's Red Gum Grassy Woodland CEEC);
- Silver-leaved Ironbark Heathy Woodland;
- White Box - Narrow-leaved Ironbark - White Cypress Pine Grassy Open Forest (associated with the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland CEEC);
- White Box - Narrow-leaved Ironbark - White Cypress Pine Shrubby Open Forest; and
- Dwyer's Red Gum – Ironbark Woodland.

Fauna habitat features (e.g. tree hollows, debris, rocks) will be incorporated into the OEA rehabilitated areas.

Although unlikely, if significant salt scalds are identified within the OEAs, remediation and management will be undertaken in accordance with a site-specific management plan prepared by a suitably qualified person. The MCCM Trigger Action Response Plan (TARP) also provides further site management procedures should any salt scads be identified.

Section 4 provides completion criteria related to OEAs.

The RMP Risk Assessment identified OEAs as low risk.

e) Waste Management

Waste at MCCM is managed in accordance with relevant legal and strategic framework including the:

- POEO Act;
- Waste Avoidance and Resource Recovery Act, 2001; and
- Protection *of the Environment Operations (Waste) Regulation, 2005.*

Waste streams at MCCM include general waste, hazardous waste and sewage. Under EPL 20221, MCCM is required to monitor, remove, track and report waste on a regular basis.

All domestic rubbish, effluent or rubbish items at the MCCM, including plant maintenance (sump oil, bitumen, kerosene, etc.) is collected and disposed of at the nearest authorised waste disposal site or an alternative site agreed with the NSC.

Waste tyres are collected and placed in the overburden emplacement. Tyres will be placed as deep into the waste rock emplacement area as is reasonably practical, with a minimum of 20 metres of material to be dumped over all tyre disposal areas. Tyre dumps will be located more than 15 metres from any coal rejects or PAF material emplacement areas to minimise the potential for spontaneous combustion. Relocation of the tyres will be undertaken in accordance with Whitehaven's internal Mine tyre Disposal Environmental Procedure and condition O4.1 of EPL 20221.

Section 4 outlines completion criteria related to waste management.

The RMP Risk Assessment identified waste management as a low risk.

f) Geology and Geochemistry

A geochemical assessment has been undertaken by RGS Environmental Pty Ltd (RGS). The assessment was completed as part of the project Environmental Assessment (EA) and found the following:

- Overburden materials and majority of the potential coal reject materials are likely to have negligible (<0.1%) total sulphur content and are therefore classified as Non-Acid Forming (NAF) barren;
- Overburden appears to have excess acid buffering capacity typical of a moderate Acid Neutralising Capacity value;
- Most overburden materials and NAF potential coal rejects are produced to generate slightly alkaline and relatively low salinity runoff and seepage following surface exposure;
- Overburden materials are predicted to be non-sodic (and as such, non dispersive) and may be suitable for revegetation and rehabilitation activities (e.g. final surfaces or growth medium); and
- A small proportion of the potential coal reject materials are classified as Potentially Acid Forming (PAF) and these materials may generate acidic and more saline runoff and seepage if exposed to oxidising conditions.

Coal rejects will be managed in accordance with the Coal Reject Disposal Procedure.

Management of overburden and coal reject materials include:

- Use of drainage and containment structures;
- Pre-stripping topsoil from areas to be mined for use in final rehabilitation activities;
- Placement of overburden within the overburden emplacement areas in a manner that limits the risk of surface erosion;
- Placement of NAF coal reject materials in the open cut pit and/or co-disposed with overburden;
- Burial of PAF coal reject materials from the selected coal seams ensuring at least 15m final coverage of inert material. Out of pit co-disposal of PAF rejects in encapsulated cells may need to be considered until sufficient capacity in the open pit becomes available;
- Burial of PAF roof and floor materials from selected coal seams that do not report as dilution to the CHPP ensuring at least 15m final coverage of inert material; and
- Covering carbonaceous waste materials (i.e. not PAF) as soon as practical with at least 5m of non-carbonaceous NAF overburden to minimise the length of exposure to oxidising conditions.

PAF material will be identified through drilling samples. Seams that are identified as PAF will be disposed of in accordance with the PAF management as mentioned above. Annually a selection of seams will be sampled at the reject screen, and ultrafine reject will be sampled at the underflow sampling unit of the thickener to ensure the results are in line with the drill hole results.

Surface water and seepage from the overburden emplacement areas where rejects have been placed will be monitored for pH, Electrical Conductivity (EC), total suspended solids (TSS) and dissolved metals (including arsenic, molybdenum and selenium). This will help assess whether the current management strategies are effective.

The RMP Risk Assessment identified geology and geochemistry as medium risk for MCCM.

g) Material Prone to Spontaneous Combustion

Spontaneous combustion is considered to be very low risk at the MCCM, consistent with the operational experience to date and the experience of neighbouring mining operations. A Spontaneous Combustion Management Plan which includes prevention, detection and control/incident management has been developed for the MCCM and will be implemented in the unlikely event of an occurrence.

The RMP Risk Assessment identified spontaneous combustion as a low risk.

h) Material Prone to Generating Acid Mine Drainage

A small proportion of potential coal reject materials located near the Braymont, Flixton, Herndale and Onvale seams (roof and some floor samples) are classified as Potential Acid Forming – High Capacity (PAF-HC) due to their high total sulphur content and negligible buffering capacity. These materials may generate acidic and more saline runoff and seepage if exposed to oxidising conditions.

Management of the PAF material will include:

- Burial of PAF coal reject materials with at least 15m final coverage of inert material;
- Burial of PAF (roof and floor) materials that do not report as dilution to the CHPP in at least 15m of inert material;

Disposal of PAF in the out-of-pit OEA or within mined-out sections of the open cut and buried to a depth of at least 5m.

Surface water flows and run off from the OEA or areas where rejects have been placed will be monitored on a regular basis as part of the MCCM's Water Management Plan.

The RMP Risk Assessment identified PAF material as a low risk.

i) Ore Beneficiation Waste Management (Reject and Tailings Disposal)

There are no planned tailings dams at MCCM. Instead of using the approved tailings drying areas, MCCM has installed belt press filters (BPFs) within the CHPP. The BPFs dewater the fine tailings material forming a material that contains roughly 35% moisture. This material is then transferred on a conveyor belt to the main reject material conveyors where it is blended with the course and fine reject streams to form a combined reject and tailings material. This reject and tailings material is then transferred to the rejects bin where it is collected by a mine haul truck and disposed of in the OEA or available in pit areas.

The RMP Risk Assessment identified reject and tailings disposal as a low risk.

j) Erosion and Sediment Control

Activities that have the potential to cause erosion and sediment laden run-off at MCCM include:

- Vegetation clearing and topsoil stripping;
- Stockpiling of topsoil;
- Construction of roads and infrastructure;
- Construction of OEAs; and
- Re-routing drainage lines via clean water diversions.

As a result of these activities, potential impacts may include:

- Potential dust from clearing activities;
- Increased surface erosion from disturbed and rehabilitated areas through the removal of vegetation and stripping of topsoil;
- Increased sediment and pollutant loads entering the natural water system; and
- Siltation or erosion of watercourses and water bodies.

Surface water runoff from areas disturbed by mining operations (e.g. sediment laden runoff) will be managed so that downstream water quality remains within the adopted water quality compliance criteria. Topsoil stockpiles will be located within the approved MCCM disturbance boundary and will be developed considering the potential for erosion and sediment issues and not be located within any drainage line.

Sediment mobilisation and erosion will be minimised by:

- Installing appropriate erosion and sediment controls prior to disturbance of any land;
- Limiting the extent of the disturbance to the practical minimum;
- Reducing the flow rate of water across the ground, particularly on exposed surfaces and in area where water concentrates;
- Completing temporary rehabilitation where practical in areas such as infrastructure areas. This would include the use of hydro-mulching;
- Progressively rehabilitating disturbed land and constructing drainage controls to improve stability of rehabilitated land;
- Treating rehabilitation areas to promote filtration;
- Protecting natural drainage lines and watercourses by the construction of erosion control devices such as diversion banks, channels and sediment retention dams;
- Installing appropriate erosion and sediment controls around all soil stockpiling areas;
- Installing suitable control measures in areas with steep gradients, as required (e.g. rock riprap, geotextile fabric); and
- Restricting access to rehabilitated areas.

Sedimentation dams, dirty water drains, and contour banks will be used to direct runoff from disturbed areas away from undisturbed areas. Each of the dirty water drains will direct water into sedimentation dams, which will provide additional settlement of run off prior to overflow into natural drainage lines. These sediment dams and erosion control structures will be designed in accordance with the current recommended design standards including:

- *Managing Urban Stormwater, Soils and Construction* (Landcom, 2004); and
- *Managing Urban Stormwater, Soils and Construction Volume 2E Mines and Quarries* (DECC, 2008).

Rehabilitated land will be re-shaped where required to minimise down slope flows, and contour banks or other structures will be installed where appropriate. Water will be carried around the slopes to the sediment dams and then either be pumped back into the mine water management system or released offsite, provided the water quality meets the criteria within the EPL conditions and the requirements within Schedule 3, Condition 38 of Project Approval 10_0138. Water may also be released offsite if a rainfall event exceeds the design capacity of the sediment control system.

In 2020, Golder Associates (Golder) was commissioned to undertake a review of rehabilitation areas impacted by extreme rainfall events that occurred in January and February of 2020. The review determined erosion flowlines across the majority of the northern emplacement, including topsoil stockpiles, rock-lined drop structures and contour drains had been designed to capture and control majority of flow into designated flow paths. Water pooling at the top of the rehabilitation was also directed back towards the mining operations and away from rehabilitation areas. The review also determined that risk of erosion to the rehabilitation area could be minimised by:

- Minimising runoff from the active dump reporting to the downslope rehabilitated landform;
- Construction and rock lining of drop and drainage structures prior to construction of contour structures which feed into them; and
- Avoiding placement of topsoil stockpiles on formed drainage lines.

These recommended actions were undertaken across 2020 and 2021.

The RMP Risk Assessment identified erosion and sediment control as a medium risk. Treatment Plan 3 was identified during the risk assessment to improve erosion and sediment management. Treatment Plans are presented in this RMP in **Section 3**.

k) Ongoing Management of Biological Resources for Use in Rehabilitation

Soil management will be in accordance with the Soil Management Protocol as detailed in **Section 6.2.1.1.**

The topsoil seed bank is an important reserve of indigenous plant seeds and soil microflora, which will assist with the preservation of local genetic material and the reestablishment of a similar range and mix of species of the original vegetation in the rehabilitation area.

The Soil Handling and Management Plan will identify where the stripped soil will be placed, based on its suitability for reuse and the soil balance. Suitability will be determined following soil testing. Soil stockpile locations, vegetation community volumes and date of soil stripping will be recorded in the Soil Handling and Management Plan and GIS database.

Where possible, topsoils will be directly placed onto prepared rehabilitation areas. This will help to ensure the health and viability of stripped soils.

Where stockpiling is unavoidable, the following process for soil stockpiling will be followed to minimise degradation of stored soil and encourage nutrient stores:

- Where possible, stockpiles will be located in areas away from drainage lines. Drainage will be diverted around stockpiles to prevent erosion;
- Sediment controls will be installed downstream from stockpiles to prevent contamination of clean water;
- Stockpiles will be limited to a maximum height of 4m;
- Initial stockpiled material (stockpiles created in first 5-10 years) will be stored for use when all other topsoil material has been utilised (refer to section 2.3);
- More erodible materials will be placed on flatter areas to minimise the potential for erosion;
- The surface of soil stockpiles shall be contour scarified in order to promote infiltration and minimise erosion until vegetation is established;
- Stockpiles intended to be used within 5 years will be seeded with grass cover crops to protect the stockpile from raindrop splash erosion, aerate the soil to reduce anaerobic conditions, enhance organic carbon levels and suppress weeds;
- Stockpiles intended to be in place for greater than 5 years will be seeded with cover crops, grass, tree or shrub species to protect the stockpile from raindrop splash erosion, aerate the soil to reduce anaerobic conditions, enhance organic carbon levels, suppress weeds and to create a via seed resource;
- Material will be stripped from the top layer of the stockpile to take advantage of the benefits of the cover crops.; and
- Following removal of the top layer of stockpiled material, the stockpile will be contour scarified and seeded with the appropriate cover crop.

Prior to re-spreading of stockpiled soil, an assessment of weed infestation will be undertaken to determine if additional weed control measures are required prior to reuse of the topsoil .

The following will be considered during soil respreading:

- Topsoil requirements for rehabilitation areas will be balanced against stored stockpile inventories, vegetation communities and proposed respreading depths;
- During the removal of soils from the stockpiles, care will be taken to minimise structural degradation of the soils;
- Material will be spread in even layers at an appropriate thickness. Soil sampling will determine the optimal topsoil depth in support of available resources and to meet the rehabilitation goals of the area being rehabilitated;
- All topsoils are to be lightly ripped (maximum tyne width 1m) prior to seeding. This is to be conducted on the contour and care taken not to bring unsuitable spoil material to the surface; and
- Fertiliser application should be conducted prior to seeding while the surface is being lightly scarified to create an optimal seed bed.

Salvage of habitat features will take place during both Stage 1 and Stage 2 of clearing. The salvaged habitat features will be moved to a holding site for storage until a time that they can be emplaced in mine rehabilitation areas and in nearby offset areas to allow their continuation as potential fauna refuge sites. This will take place before and after clearing. Some such materials may be transported to interim storage areas though such materials will be preferentially transported immediately to pre-identified sites if available. Vegetation that is not salvaged as a habitat feature will be mulched, and spread back over the topsoil. The topsoil and mulch will then be removed and transported to interim storage areas and applied to rehabilitation areas to provide additional organic matter. A description of the salvage items will be identified through the two stage clearance process. Relocation of bush rocks within the Leard State Forest or beyond the forest boundary will be undertaken as agreed with FCNSW.

Propagation of seedlings should be undertaken by nurseries that can effectively handle commercial quantities of seed, propagate and grow the seed and harden the seedlings. A seed and tubestock supply strategy is described in Section 6.5 of the Biodiversity Management Plan. Revegetation by seedlings of the scale required will be undertaken by nurseries that can effectively collect commercial quantities of seed, propagate and grow the seed and harden the seedlings. Orders will need to be placed well in advance of revegetation works to meet the demand for tubestock. The likely time frames for plants to reach transplantable sizes will vary depending on the species and method of propagation (e.g. most species require one season to be of sufficient size, but other species such as Xanthorrhoea, Callitris and Bursaria can take two or more years).

l) Mine Subsidence

As of 2022, there no evidence to indicate that the MCCM is at risk of mine subsidence.

m) Management of Potential Cultural and Heritage Issues

Aboriginal Heritage

Aboriginal cultural heritage is managed in accordance with the MCCM *Aboriginal Archaeology and Cultural Heritage Management Plan* (AACHMP). This plan was prepared to satisfy Schedule 3 Condition 58 and the Statement of Commitments (SOC) in Project Approval 10_0138.

As part of the plan, an Annual Site Audit is undertaken with the assistance of the Relevant Aboriginal Parties (RAPs). All Aboriginal cultural heritage objects found within the MCCM Project Boundary are stored securely at the Red Chief Local Aboriginal Land Council (LALC) as part of the approved Care Agreement. As part of the Agreement, the Red Chief LALC is responsible for regular audits of the artefact archive.

The AACHMP has recently been updated to replace the use of grader scrapes during clearance and undertake a targeted inspection of the ground surface prior to disturbance instead. This change was proposed by RAPs during a 2019 RAP consultation meeting. MCC is still awaiting approval from the DPE.

Controls currently in place at the MCCM to manage Aboriginal cultural heritage include:

- The preparation of an Aboriginal Heritage Conservation Strategy (AHCS);
- Continuous consultation with RAPs (scheduled every six months);
- Pre-clearance surveys which identify potential Aboriginal scarred trees and Quinine Bush (*Alstonia constricta*);
- Items of Aboriginal cultural heritage significance are registered in on the Aboriginal Heritage Information Management System (AHIMS);
- Archaeological monitoring of Aboriginal cultural heritage sensitive areas is undertaken prior to topsoil clearance with the presence of RAP representatives and specialists archaeologists; and
- Annual audit of the Aboriginal cultural heritage site fencing.

During the RMP Risk Assessment, Aboriginal heritage was considered a low risk.

A strategy for the ongoing management of heritage after lease relinquishment will be developed prior to MCCM reaching 5 years from mine closure. At the present time all heritage aspects will be managed in accordance with the approved management plans and conservation agreements refences above.

Historic Heritage

Historic heritage is managed in accordance with the MCCM *Historic Heritage Management Plan* (HHMP) which was developed to meet the commitments outlined in Schedule 3 Condition 38 and the SOC in Project Approval 10_0138.

To date, there are seven historic heritage sites within MCCM owned land. During the EA assessment, mining operations were not predicted to have a direct impact on these heritage items. A site inspection was undertaken to assess the conditions of heritage buildings at the following four sites:

- Velyama Site Complex;
- Warriahdool Hut;

- Harpary Site Complex; and
- Therribri Homestead Site.

The inspection found that the two buildings at the Harparary Complex were in poor condition and considered a safety hazard. These buildings were therefore demolished and DPE was notified of the demolition on 22 November 2020.

Management of historic heritage items at the MCCM include:

- Maintaining archaeological record that retains historic heritage values of local significance;
- Annual monitoring of sites;
- Weed control; and
- Installation of protective fencing around the remaining sites.

Additional management practices for the Velyama Site Complex are detailed in the Velyama Site Complex Conservation Management Plan.

The RMP Risk Assessment identified historic heritage as a low risk.

At the present time all heritage aspects will be managed in accordance with the approved management plans and conservation agreements refenced above.

n) Exploration Activities

All exploration drilling activities are reviewed prior to commencement as part of MCCM's Land Disturbance Permit (LDP) process. Planned borehole locations and access tracks are assessed for environmental, cultural heritage, approval and mining title issues and necessary constraints and conditions are placed on drilling locations for each borehole location.

All boreholes are surveyed and if not required for monitoring purposes are cement sealed on completion. All casing is removed where practicable. However, in isolated holes, this may not be possible requiring the casing to be cut off below ground level. Borehole sites are then rehabilitated to an appropriate standard.

6.2.2 Decommissioning

Decommissioning and infrastructure removal will occur during the mine closure phase. This will include removal of all equipment and infrastructure, remediation of any contaminated land, ripping, topsoil (if needed) and seeding. Decommissioning of groundwater boreholes is in accordance with the "Minimum Construction Requirements for Water Bores in Australia (2020)". All infrastructure that is considered to be beneficial to future use will be retained subject to agreement with future stakeholders, regulatory authorities and landowner agreements.

Refer to **Appendix A** for more detail on the risks associated with the decommissioning phase.

a) Site Security

Site security in relation to the final void is detailed in Section 4.5.4 of the *Final Void and Mine Closure Plan* (FVMCP). It states that security measures will include:

- Excavating or capping exposed carbonaceous material with inert material, to prevent ignition from spontaneous combustion, bushfires or human interference;
- Constructing a physical barrier, including a safety berm and security fence, around the entire perimeter of the final void to control human access; and
- Installing signage clearly stating the risk to public safety and prohibiting public access, at intervals along the entire length of the perimeter security fence.

b) Infrastructure to be Removed or Demolished

MCCM will decommission and remove all built infrastructure not required for the final landform during the mine closure phase. Decommissioning activities will be undertaken in consultation with the Resources Regulator. A decommissioning plan will be used as a guide for sequencing and the process of infrastructure removal.

Decommissioning of mine infrastructure will include:

- The removal of the CHPP (and all associated infrastructure);
- Removal of rail infrastructure (including rail spur, rail loop and associated load-out facility);
- Removal of all buildings (including administration offices, sheds, small buildings and workshops);
- Removal of hardstand and foundation materials;
- Disconnection and removal of services (e.g. electricity and telecommunications infrastructure and equipment);
- Remote infrastructure (e.g. communication or telemetry infrastructure); and
- Removal of access roads and tracks not required for the final landform.

c) Buildings, Structure and Fixed Plant to be retained

Infrastructure (e.g. dams, surface water drains and bunds, roads, and buildings) which are determined to be beneficial for future uses will be left in place, subject to approval by the Resources Regulator and any other relevant regulatory agency. MCCM's target final land use does not include the retention of buildings. However, some water management structures will remain post closure. Where applicable a Geotechnical Assessment will be carried out prior to closure by a suitably qualified engineer to verify that the water infrastructure retained on site is long term stable.

d) Management of Carbonaceous/Contaminated Material

During operations MCCM will implement the following processes to minimise the potential for land contamination:

- Use of bunded diesel and oil tanks;
- Construction and use of compacted gravel and/or concreted hardstand areas;
- Use of oil/water separators;
- The adoption of 'dry' spill clean-up and workshop cleaning processes; and
- The establishment of a bioremediation pad on site to allow progressive and rapid remediation of any contaminated soil on site.

According to section 5 of the FVMCP, a land contamination assessment will be undertaken once mining operations cease and infrastructure and demolition activities have been completed. The land contamination assessment will be undertaken in accordance with the relevant guidelines and requirements, including:

- *The NSW Contaminated Land Management Act, 1997;*
- *Managing Land Contamination Planning Guidelines SEPP 55 – Remediation of Land;*
- *Guidelines for Consultants Reporting on Contaminated Sites;* and
- *The National Environment Protection (Assessment of Site Contamination) Measure.*

Contaminated areas, or areas with potential contamination, will be assessed and remediated. Remediation activities will likely include the extraction of contaminated materials for disposal off-site at a licenced facility, on-site bioremediation, or onsite burial subject to obtaining the relevant approvals. Following the completion of remediation works, a suitably qualified contamination expert would be engaged to assess that remediation works have been managed appropriately and in accordance with the relevant standards and requirements.

e) Hazardous Materials Management

Hazardous materials are managed and disposed of in accordance with the *Waste Classification Guidelines* (DECCW 2009), the *Australian Code for the Transport of Dangerous Goods by Road and Rail* (National Transport Division 2007), the SEPP 33 – *Hazardous and Offensive Development Application Guidelines* (DUAP 1994) (SEPP 33 Guidelines) and the *Hazardous Industry Planning Advisory Papers* developed under SEPP 33.

Transport, storage, handling, disposal and storage of hydrocarbon products (e.g. diesel oils and greases) will be carried out in a way that minimises the potential for pollution and complies with the requirements of the *Work, Health and Safety Act, 2011* and AS1940 – *The Storage and Handling of Flammable and Combustible Liquids.* All hazardous chemicals that enter the site will be entered into the site's chemical safety management system (ChemAlert). Hazardous or regulated waste streams will be disposed of offsite at a licensed waste facility. MCCM will engage a suitably qualified consultant to undertake a hazardous materials assessment as part of the preparation of the final mine closure plan.

f) Underground Infrastructure

Underground infrastructure at the MCCM includes an underground fibre optic network that has been installed for day-to-day operations. This network will be removed once all infrastructure has been decommissioned or demolished unless it is useful for future landowners or neighbouring operations. Another significant component of MCCM's underground infrastructure is the Roma/Brighton groundwater pipeline. The buried pipe is approximately 9km long and rehabilitation and closure activities will be considered in the decommissioning plan.

6.2.3 Landform Establishment

Landform establishment is the process of shaping the final landform to a safe, stable and free-draining landform that is appropriate for the desired final land use and consistent with the surrounding landscape.

The final shaped landform will be constructed in accordance with the requirements of this document. Rehabilitation will be undertaken progressively, generally commencing as soon as practicable following the completion of mining related activities.

Relevant MCCM documents providing detailed management of geotechnical and geochemical risks in relation to rehabilitation include:

- Draft WHC-PLN-MCC-Final Void Management Plan
- WHC-PLN-MCC- WATER MANAGEMENT PLAN

MCCM assessed the risks associated with the Landform Establishment phase of rehabilitation in the RMP Risk Assessment. These risks and associated rankings can be found in **Appendix A**.

a) Water Management Infrastructure

Water management structures will be constructed on a staged basis during the operational phase of the MCCM. To date, permanent water structures that have been constructed include sedimentation dams, a raw water dam, clean water drains and dirty water drains.

During the mine closure phase, Section 4.3 of the FVMCP states that water dams that are no longer required will be pumped to the final void with contaminated soils/sediments removed and disposed of off-site at a licenced facility, bioremediated on site, or buried onsite subject to acquiring the relevant approvals.

Dams will either be retained for future use or filled and/or embankments removed, and the area will be reprofiled and revegetated. Sediment dams will only be retained if the water meets the water quality completion criteria to ensure no adverse impacts to the surrounding waterways and downstream environment.

MCC commits to obtaining any required approvals under the *Water Management Act 2000* for relevant water management works proposed to be retained as part of the final landform prior to the development consent lapsing.

b) Final Landform Construction: General Requirements

Final landform design and key features are detailed in Section 4 of the FVMCP, this document has been developed in accordance with condition 74 of Schedule 3 of PA_10_0138. This document will be finalised in 2026. In summary, key features of the MCCM include:

- Rehabilitated overburden emplacement areas (including in-filled areas of the MCCM open cut pit);
- Water management features that will be designed to be stable in the long-term;
- A final void located in the southern and eastern portion of CL 375; and
- Rehabilitated infrastructure areas that are generally flat

The final outer surfaces of the mine landforms will be designed to be safe, stable, provide an adequately drained post-mining landform, and have a shape that is consistent with the types of naturally occurring landform features in the region. They will also be designed to provide a final surface that facilitates revegetation and growth of species that occurred in the native woodland and forest communities that were present prior to the commencement of mining.

In some instances, parts of the mine landforms will be constructed in their final configuration from the outset (e.g., some batters of the out-of-pit overburden emplacement and some cut and fill areas associated with the mine-related infrastructure). However, for the majority of the out-of-pit overburden emplacement area and the open cut, the working batters and berms will need to be pushed back/down (or in-filled with overburden in the case of the open-cut) to form the final mine landform surface. Micro-relief features and permanent water management structures (e.g., drop structures between batters and final bunds) will also be installed as part of this process. The final rehabilitated batters of the overburden emplacement will have a maximum overall slope of 10 degrees, and the walls of the final void will be blasted to a slope of approximately 37 degrees, or less.

The designs of final landforms will be refined as part of the overall mine planning process, in a manner that is consistent with the overall rehabilitation and mine closure concept for the MCCM.

Spoil characterisation is to be undertaken in accordance with the Soil Management Protocol. Sampling will determine if the subsoil and spoil is suitable for rehabilitation use or if it requires amelioration or selective handling and placement. Characterisation of subsoil and spoil for erosion (primarily dispersion) and agronomic (pH, EC, CEC, and metals) parameters are required to determine if spoil characteristics are suitable for vegetation establishment and growth. Unsuitable parameters for spoil, which are detailed in the Soil Management Protocol are identified in **Table 15** below.

Table 15: Unsuitable Spoil and Subsoil Parameters

Parameter	Unsuitable Range
pH	<5.0 or >8.5
Exchangeable Sodium Percentage (ESP)	6% if clay content >10%
Electrical Conductivity (1:5 suspension)	>1.0dS/m

Once sampling is undertaken, results will determine if amelioration and or selective handling of spoil is required. If not able to be ameliorated, unsuitable spoil and subsoil, including Potentially Acid Forming (PAF) material, is to be capped with a minimum of 5.0m of suitable spoil (compacted depth) or, more appropriately, capped to a depth greater than the minimum rooting depth of the vegetation. Capping spoil will need to be ameliorated and contour ripped prior to the placement of the ameliorated topsoil.

Sign-off requirements in the Land Design Protocol identify if spoil characterisation has been undertaken. The Topsoiling Protocol has sign off requirements that identifies results of the sampling and the required actions. It is envisaged that spoil characterisation is conducted at the beginning of the progressive rehabilitation planning phase to enable selective handling and or spoil amelioration.

The risks to final landform construction were rated as medium in the Rehabilitation Risk Assessment.

c) Final Landform Construction: Reject Emplacement Areas and Tailings Dams

The management of coal rejects materials include disposal of PAF and NAF coal reject materials in the mined-out areas of the open pit and/or co-disposal with overburden and burial to a depth of at least 5 m in the Overburden Emplacement Areas.

There are no tailings dams onsite.

d) Final Landform Construction: Final Voids, Highwalls and Low Walls

The approved MCCM final landform includes a final void located in the southern and eastern extent of the Project Boundary. At the cessation of mining the open cut pit, the pit walls will be blasted and shaped to a slope of approximately 37 degrees or less to provide a landform that is safe and stable in the long-term (MCC, 2020; Aston Coal 2 Pty Ltd, 2011).

To minimise the extent of the final void as far as is practicable and feasible, the mine plan for the MCCM involves partially backfilling the open cut pit and reducing the extent of its surface catchment. WRM (2020) reviewed the surface catchment area draining to the final void and predict that the total surface catchment area would be approximately 904.7 ha which is approximately 2% greater than that estimated in the 2011 MCCM EA (i.e. 887 ha) due to consideration of contemporary topographic data which provides a more accurate definition of the catchment boundary.

The following principles would be adopted to provide a safe and stable final void in the long-term:

- At the cessation of mining, battering back and shaping open cut pit walls to a slope of approximately 37 degrees or less to mitigate potential for failures and mass movement;
- excavating or capping exposed carbonaceous material with inert material, to prevent ignition from spontaneous combustion, bushfires or human interference; and
- diverting surface runoff from land surrounding the void by constructing bunds and/or drains to limit the drainage catchment of the final void and the potential for instability of the void walls associated with runoff flows eroding void walls;
- constructing a physical barrier, including a safety berm and security fence, around the entire perimeter of the final void to control human access; and
- installing signage, clearly stating the risk to public safety and prohibiting public access, at intervals along the entire length of the perimeter security fence.

Various technical studies/assessments would be undertaken during the post-closure phase to verify and confirm that the MCCM rehabilitation completion criteria have been met. Anticipated technical studies and assessments to be undertaken post-closure include:

- A geotechnical stability assessment of the final void to verify the long-term stability and safety of the final void.
- A stability assessment of key final landforms (e.g. OEAs and retained water management infrastructure including long-term drainage structures and sediment dams) to confirm the landforms and structures are operating as designed and are stable in the long-term.
- Verification and re-simulation of final void groundwater model and water balance using post-mine groundwater and surface water monitoring program results to confirm predictions after the cessation of mining and verify long-term final void waterbody recovery predictions.
- A rehabilitation assessment to confirm that MCCM rehabilitation completion criteria have been met. The MCCM rehabilitation completion criteria include water quality criteria for runoff from rehabilitated landforms, which would therefore also be assessed in the rehabilitation assessment.

All technical studies and assessments would be undertaken by relevant and suitably qualified persons.

The Rehabilitation Risk Assessment rated the risk of lack of detail in the final void management strategy to be a medium risk. No treatment plan was added to address this risk because MCCM are committed to preparing a Final Void and Mine Closure Plan which will cover details around this risk.

e) Construction of Creek/River Diversion Works

Water management structures, such as contour banks/bunds and drains, will be constructed around the perimeter of the void to divert surrounding catchment runoff water away from the void and therefore limit the drainage catchment of the final void. These principles would continue to be applied to any future proposals involving the continuation of mining beyond the currently approved mine life, which would modify the currently approved MCCM final void.

6.2.4 Growth Medium Development

As part of the Land Disturbance Permit, prior to the clearing and stripping of land, MCCM will engage a suitably qualified soil scientist to conduct a soil survey and develop a growth media inventory. The soil survey is undertaken in a progressive manner, on an annual basis, in preparation for each year's clearing activities. The soil survey information identifies the technical details of soil and landscape attributes that are required for planning activities regarding soil management, rehabilitation, and the design of landforms and landform covers.

Prior to disturbance, soils and spoils will be tested to see if ameliorants are required (including application rates), or whether they can be left and buried in overburden emplacement areas. Mine soils and spoils will usually be ameliorated with one or more of the following, if required:

- Agricultural gypsum (i.e., to treat dispersion, calcium to magnesium ratio, and improve structure and water holding capacity);
- Vegetation mulch generated on site (i.e., to increase organic carbon, and improve the soils water holding capacity and soil biota levels); and/or
- Fertiliser (i.e., slow-release native plant fertiliser where possible).

If sufficient topsoil is unavailable, subsoil or mine spoil may be able to be ameliorated from a suitable growing media. Subsoil amelioration will be determined based on the pre-disturbance soil testing program.

Soil microbes such as rhizobia bacteria may be found in some soils which can assist with increasing nitrogen production in the system. These bacteria assist leguminous species such as Acacias to grow, which contributes to the nitrogen growth.

Erosion and sediment controls will be implemented to protect rehabilitated area from dispersive soils and spoils, provide soil surface cover and minimise the creation of concentrated surface water flow conditions. Controls relating to all mining and associated disturbances are detailed in the MCCM Water Management Plan, these include:

- Amelioration of dispersive spoil to minimise the risk of rill, gully and tunnel erosion and allow the infiltration of surface water (reduce the amount and velocity of surface water). This will be determined during the soil testing program outlined in the Soil Management Protocol;
- Contour scarification of compacted surfaces to encourage infiltration and surface roughness;
- Use of cover crops including salt-tolerant self-sterile annual grasses (if seasonally and commercially available), native grasses and native legumes to minimise raindrop and sheet erosion of reshaped areas;
- Use of inert rock mulches of appropriate stone sizes and cover where effective and appropriate;
- Vehicle access will be predominately restricted to designated tracks on mine landforms that have been revegetated to minimise ground disturbance (e.g. erosion and/or compaction); and
- In the larger drainage systems such as clean water drains and modified natural drainage systems, erosion control methods such as cross vanes, rock vanes and J-hook vanes will be used to provide channel bed and bank protection.
- The use establishment of contour banks in regular intervals on non-geofluvial landforms.

To maximise water infiltration, the surface of the topsoil will be ripped along the contour to reduce compaction. The depth of ripping will vary based on the topographical relief of the land. Gypsum is also applied to improve soil structure and increase permeability where sampling shows this to be required.

Topsoil and Subsoil Management

Topsoil at the MCCM is managed in accordance with Schedule 3, Condition 39 of Project Approval 10_0138, and Conditions 26(b), 27(c) and 27(d) of EPBC 2010/5566. Detailed topsoil management is provided in the Soil Management Protocol.

Prior to stripping any topsoil, a detailed survey which included an assessment on topsoil suitability for rehabilitation activities, was undertaken within the disturbance footprint. Topsoil is stored and monitored to ensure there is sufficient volumes for use in future rehabilitation.

Relevant MCCM documents providing detailed management of topsoil includes:

- WHC_PRO_MCC_Soil Management Protocol

Weed Control

There are a number of noxious weeds present within the MCCM Project Boundary and surrounds. Weed management will be undertaken in accordance with the MCCM BMP. The removal of these weeds will be done in accordance with best practice and with consideration of the *Noxious Environmental Weed Control Handbook* (DPI, 2014) and local weed management plans published by the Narrabri Shire Council.

Weed control techniques will include physical removal and herbicide application. Additional techniques may be considered depending on the environmental and noxious weeds present. All personnel involved in weed management will be required to hold relevant permits /licences, including a chemical licence to use herbicides and a chainsaw certificate to operate chainsaws (if required).

Relevant MCCM documents providing detailed management of weeds include:

- WHC-STD-ENV-WEED MANAGEMENT PROCEDURE - Provides a guide for all relevant staff on how to manage weed species that may be found on site, or has the potential to spread to MCCM leases.

General planting seasons for Central Western NSW is autumn through to the beginning of spring. Planting season will depend on germination conditions, including stored moisture, soil temperature, humidity and rainfall. Local conditions will be considered prior to planning. The provisional revegetation schedule is provided in **Table 6-3** of the MCCM BMP.

Degradation of substrate, dust generation and erosion due to a possible delay in vegetation established will be minimised through the implementation of controls outlined in **Section 6.2.1.10.**

A selection of hollow-bearing trees, hollow-bearing logs and rocks will be salvaged for reuse in rehabilitation areas. Further details on salvage materials and habitat augmentation are included in **Section 6.2.1.3**.

6.2.5 Ecosystem and Land Use Establishment

Rehabilitation activities described in this section are implemented in a manner that directly supports the objectives and performance outcomes of the approved Biodiversity Management Plan (BMP). The Rehabilitation Strategy states revegetation works will generally be carried out when climatic growth conditions are optimal, and that they will involve direct native seeding and/or supplementary tube stock planting. Ecosystem establishment and development activities will be undertaken consistently with the Biodiversity Management Plan, including the use of appropriate endemic species mixes, vegetation community targets, habitat features and monitoring methodologies relevant to the approved post-mining land use outcomes.

MCCM carry out rehabilitation and revegetation works in accordance with the WHC-STD-ENV-Climate Adaption Protocol. The protocol provides employees and contractors with the required knowledge to identify risks and develop responses associated with rehabilitation activities in changing climatic conditions. The protocol also includes information regarding the optimal sowing time of Eucalypt woodlands (Table 16). MCC will aim to undertake sowing during the months of August to October where possible. In the event that sowing cannot be undertaken in this window, seeding will still be completed however the areas will be monitored for success and reseeding may be required in the event that seed germination is not optimal.

Table 16: Optimal Sowing Times for Eucalypt Woodlands

Region	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Northern Victoria-Southern NSW												
NSW Central West												
Northern NSW												
Southern Qld												

Source: Greening Australia (2012) – dark blue represents optimum time to sow

It is anticipated that natural seed germination from the soil seed bank will need to be assisted with direct seeding and planting of seedlings. Areas with limited access and difficult terrain for traditional seed spreading methods (e.g. tractor and spreader) may be revegetated via aerial seeding. Revegetation species will include the main strata species of each vegetation community (Table 17) and species to assist in the initial development of the ecosystem, including short-lived Acacia species to contribute nitrogen to the developing system but not at excessive densities (UoN, 2012). Acacia species to be incorporated in the seed mix from vegetation communities include Acacia decora, and A. cheelii will consist of tree and shrub varieties.

Table 17: Provisional Species List

Common Name	Scientific Name	Common Name	Scientific Name
Overstorey		*Overstorey*	
* White Box	*Eucalyptus albens*	Narrow-leaved Grey Box	*Eucalyptus pilligaensis*
* Yellow Box	*Eucalyptus melliodora*	Inland Grey Box	*Eucalyptus microcarpa*
* Blakely's Red Gum	*Eucalyptus blakelyi*	Dwyer's Red Gum	*Eucalyptus dwyeri*
Narrow-leaved Ironbark	*Eucalyptus crebra*	Red Stringybark	*Eucalyptus macrorhyncha*
Apple Box	*Eucalyptus bridgesiana*	Angophora species	N/A
Midstorey		*Midstorey*	
*Sticky Hop-Bush	*Dodonaea viscosa* ssp. *Angustifolia*	Silver Wattle	*Acacia dealbata*
*Wilga	*Geijera parviflora*	Hickory Wattle	*Acacia implexa*
Belah	*Casuarina cristata*	White Cypress Pine	*Callitris glaucophylla*
-	*Allocasuarina* spp.	Scant Pomaderris	*Pomaderris queenslandica*
Black Tea-tree	*Melaleuca bracteata*	Buloke	*Allocasuarina leuhmanii*
Understorey		*Understorey*	
*Smooth Darling Pea	*Swainsona galegifolia*	Three-awn Speargrass	*Aristida vagans*
*Barb-wire Grass	*Cymbopogon refractus*	Slender Stackhousia	*Stackhousia viminea*
*Silky Blue-grass	*Dichanthium sericeum*	Yellow Burr-daisy	*Calotis lappulacea*
*Daises	*Brachyscome* spp.	-	*Rostellularia adscendens* var. *adscendens*
*Everlasting Daises	*Chrysocephalum* spp.	Plains Grass	*Austrostipa aristiglumis*
*Kangaroo Grass	*Themeda triandra*	-	*Panicum* spp.
*Wallaby Grass	*Austrodanthonia induta*	-	*Austrodanthonia* spp.
*Winter Apple	*Eremophila debilis*	-	*Bothriochloa* spp.
Blue Trumpet	*Brunoniella australis*	-	*Chloris* spp.

Seed supply should be planned well in advance of planting to ensure sufficient quantity, diversity, and quality are available, specifically rare species that may be difficult to source. Seed with local provenance that occurs on similar topography, climatic conditions and soil types to where they are sown on the rehabilitation should be prioritised. MCC will also source seeds with high levels of genetic diversity, collected from plants spaced at least three plant heights apart. This prevents the collection of too many closely related seeds. Quality seed will greatly increase the chances that the rehabilitation completion criteria can be met. Using seeds of poor physical or genetic quality will result in poor germination, poor growth, lower resistance to diseases and pests, an inability to adapt to climate change and environmental shocks, an inability to self-regenerate and reduced diversity (Rawlings, et al., 2010).

Temporary or interim rehabilitation will be used where required to provide cover to minimise erosion and dust impacts, as well as inhibit the establishment of weeds. This will involve the application of a temporary cover crop for short term uses and native grasses for longer-term requirements. The species that are used will be selected so as to not be likely to impede the final revegetation of native vegetation, particularly the Box-Gum Woodland CEEC.

Irrigation of the rehabilitation areas may be required to assist the germination of the plants and to assist the supplementary tube stock planted. Supplementary watering of tube stock at the time of planting can be particularly useful. Irrigation (if required) will be

undertaken considering the prevailing weather conditions, soil moisture and plant health. Water availability following seeding has been found to be a major influence on a number of experimental sites (UoN, 2012).

Weed management will include the following actions:

- vehicles and equipment minimise the transport of weed seed;
- areas will be inspected regularly for the presence of weed species;
- relevant personnel will be provided with pictures and descriptions of known weed species and asked to report incidental sightings;
- treatment of entire infestations where possible;
- re-treatment of recurring infestations at regular intervals;
- mapping of key weed infestations following monitoring to track progress and focus control activities where necessary; and
- prompt rehabilitation of land post disturbance.

Pest control actions will be undertaken with reference to the appropriate Code of Practice and Standard Operating Procedures (these documents are available on the DotE website).

6.2.6 Ecosystem and Land Use Development

Rehabilitation areas entering the ecosystem development phase will be managed to achieve the target vegetation communities and ecological outcomes defined for the site and within the approved BMP. This includes progressing rehabilitated areas toward self-sustaining native woodland and forest ecosystems through appropriate species composition, structural development, and habitat establishment. Natural regeneration processes will be supported through soil and seedbank management, with supplementary seeding or planting undertaken where required. Monitoring outcomes will be used to assess progress against both rehabilitation completion criteria and biodiversity performance measures, with adaptive management applied where necessary to ensure alignment with the intended biodiversity outcomes. Rehabilitation monitoring and adaptive management outcomes will be used in conjunction with the Biodiversity Management Plan to inform ongoing ecosystem establishment, maintenance and corrective actions where required.

Weed infestation on rehabilitated areas are managed in accordance with the Maules Creek Weed Management Procedure. Weeds are monitored by MCCM Personnel; staff are required to complete biannual weed inspections of all areas within the MCCM's project boundary. Key information is recorded on field sheets and logged into MCCM's environmental data management system. The location of identified weeds will also be logged into MCC's GIS records. This spatial data will be used to help guide and plan weed control campaigns and monitor and review MCCM's performance in weed management.

Weed prevention and management practices will be carried out in accordance with the Maules Creek Management Procedure.

To manage feral animals on rehabilitated areas control measures will be implemented by mine staff or by an appropriate Pest Control Contractor(s) as required. All personnel involved in feral animal control will be required to hold relevant and valid licences/permits, including any relevant chemical licences for pesticide use or a firearms licence for shooting. The Humane Pest Animal Control: Code of Practice and Standard Operating Procedures (DPI, 2013, or its revision) will be followed. MCCM will seek to co-ordinate feral animal control around the Project with neighbouring landholders and other mine operators (i.e. to avoid duplication of feral animal control methods). Feral animal control practices will be carried out in accordance with those listed in the Maules Creek Biodiversity Management Plan.

Routine Ongoing Maintenance

Rehabilitation area maintenance activities will be determined by the outcomes of the rehabilitation monitoring programs as detailed in Section 8.0. The scope of routine rehabilitation maintenance during the ecosystem and land use sustainability phase may include the following:

- Weed and feral animal control of rehabilitation;
- Erosion control works;
- Maintenance fertilising;
- Re-seeding; and
- Repair of fence lines, access tracks and other general related land management activities.

Intervention and Adaptive Management

Where monitoring results reveal that indicators are not trending towards the completion criteria as predicted, plans are executed to investigate causes for poor rehabilitation performance and, where appropriate, undertake rework and/or modify management practices to achieve the desired rehabilitation results.

The Rehabilitation Risk Assessment considered the risk of limited vegetation structural development and habitat for targeted fauna species resulting in the site not meeting completion criteria. This risk was ranked as medium. Other risks associated with ecosystem and land use development were ranked as low.

Intervention and adaptive management is discussed further in Section 10.

6.3 Rehabilitation of Areas Affected by Subsidence

This section is not applicable. Refer to **Section I)** for subsidence likelihood at MCCM.

7. REHABILITATION QUALITY ASSURANCE PROCESS

Table 18 below outlines the rehabilitation and quality assurance process for MCCM.

Note, additional work will be required to develop a quality assurance process once rehabilitation recommences at the site.

Table 18: Rehabilitation and Quality Assurance Process - Maules Creek

Phase	Key Quality Assurance Steps	Current Record Status (In place/still required)	Maules Creek Procedures/Documentation
Active Mining	Records of competent personnel for active mining and rehabilitation.	Records in place.	Position descriptions
	Up to date mine plans.	Completed for this RMP and the Annual Rehabilitation Report and Forward Program.	Mining planning procedures
	Documentation of pre-clearance surveys (covering all key environmental aspects).	Records in place.	Maules Creek Procedure - Clearing Operations Specific environmental management plans
	Maintenance of a topsoil inventory to document stripped, stockpiled and re-spread resources.	Location of soils stockpiles are known	Whitehaven Maules Creek Coal Mine - Topsoiling Protocol.
	Regular inspections of erosion and sediment controls.	Inspections currently being completed.	Water Management Plan
	Regular inspections to identify potential weed infestations. Details of weed status included in rehabilitation monitoring.	Inspections currently being completed	Biodiversity Management Plan
	Weed management spraying records	Current records kept for weed spraying.	Biodiversity Management Plan
	Regular inspections to review spontaneous combustion	Currently being completed.	Whitehaven Maules Creek Rejects Management Procedure

Phase	Key Quality Assurance Steps	Current Record Status (In place/still required)	Maules Creek Procedures/Documentation
	Overburden and reject material testing to determine PAF	Drillhole sampling for PAF Known locations of PAF Sign off process when inert material is placed over the PAF/rejects.	Whitehaven Maules Creek Rejects Management Procedure
	Soil testing	Completed annually.	Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. Annual Soil results.
Decommissioning	Inspections and demolition reports to confirm all infrastructure has been removed.	Still required prior to closure. To be covered in Final Void and Closure Plan.	To be covered in the Final Void and Mine Closure Plan (Draft, final to be prepared by 2026).
	Removal of waste	Waste records	
	validation testing to ensure any contamination/hazardous substances has been appropriately remediated and/or removed.	Still required prior to closure. To be covered in Final Closure Plan.	
	Public safety risks are assessed during decommissioning.	Fencing, signage, security. To be covered in Final Closure Plan.	
Landform Establishment	Landform establishment and survey process. Quality assurance signoff of constructed landforms including slopes, landforms and water drainage structures.	Currently in place	Whitehaven Maules Creek Landform Design Protocol Whitehaven Maules Creek Landform Construction Protocol Whitehaven Maules Creek Corrective Actions Protocol Whitehaven Maules Creek Progressive Rehabilitation Procedure Preparation of the Annual Rehabilitation Plan.
	Records of reject capping depth at site. Covered by 15 metres of overburden that is not PAF.	Currently in place	Whitehaven Maules Creek Rejects Management Procedure
	Recording depths of ripping of rehabilitation areas.	Currently in place	Whitehaven Maules Creek Landform Design Protocol Whitehaven Maules Creek Landform Construction

Phase	Key Quality Assurance Steps	Current Record Status (In place/still required)	Maules Creek Procedures/Documentation
			Protocol Whitehaven Maules Creek Corrective Actions Protocol Whitehaven Maules Creek Progressive Rehabilitation Procedure Preparation of the Annual Rehabilitation Plan. Final Void and Mine Closure Plan (Draft, final to be prepared by 2026).
	Slopes, geotechnical and stability assessment required for the Final Closure Plan	Regularly reviewed but to be covered in more detail in the Final Void and Mine Closure Plan.	Whitehaven Maules Creek Landform Design Protocol Whitehaven Maules Creek Landform Construction Protocol Whitehaven Maules Creek Corrective Actions Protocol Whitehaven Maules Creek Progressive Rehabilitation Procedure Preparation of the Annual Rehabilitation Plan.
	Void Water Management Assessment completed as part of Final Closure Plan.	To be covered in Final Void and Mine Closure Plan.	Final Void and Mine Closure Plan (Draft, final to be prepared by 2026).
Growth Medium Establishment	Soil assessment for existing rehabilitation areas.	Covered in rehabilitation monitoring.	Whitehaven Maules Creek Coal Mine - Topsoiling Protocol.
	Soil assessment for future rehabilitation areas.	Required prior to future rehabilitation.	Whitehaven Maules Creek Coal Mine - Topsoiling Protocol.
	Register of topsoil and subsoil for future rehabilitation.	Location of soils stockpiles are known	Whitehaven Maules Creek Coal Mine - Topsoiling Protocol.
	Records of identification and management of actual acid forming, potentially acid forming (PAF) and non-acid forming (NAF) material and ongoing monitoring.	Records in place	Whitehaven Maules Creek Coal Mine - Topsoiling Protocol.
Ecosystem and Landuse Establishment	Documentation of seeding or planting activities undertaken including: Date of planting;	Records in place. To be recorded for future monitoring programs.	Whitehaven Maules Creek Seed Selection and Fertiliser Protocol Whitehaven Maules Creek Progressive Rehabilitation

Phase	Key Quality Assurance Steps	Current Record Status (In place/still required)	Maules Creek Procedures/Documentation
	Weather conditions; Seed mix; Seeding rate (kg/ha) and/or planting rate (tubestock/ha); Fertiliser rate (kg/ha); Records of the salvage of all rehabilitation resources including suitable capping materials, topsoils/subsoils, seeds, habitat structures (e.g. tree hollows and rocks) for use in rehabilitation.		Procedure Preparation of the Annual Rehabilitation Plan Whitehaven Maules Creek Corrective Actions Protocol
	Regular site inspections of rehabilitated areas to allow early identification of any emerging threats to rehabilitation.	Monthly inspections completed	
	Rehabilitation monitoring in accordance with Section 8 to monitor the success of rehabilitation.	Records of existing and proposed rehabilitation monitoring.	
	Continuation of environmental monitoring program.	Ongoing. To be reviewed closer to final closure.	
	Weed and feral animal infestations; and Documentation of all weed management and eradication programs and follow-up inspections.	Current weed management records kept.	
Ecosystem and Land Use Development	Rehabilitation monitoring in accordance with Section 8 to monitor the success of rehabilitation.	Criteria assessed in the annual rehabilitation monitoring.	Whitehaven Maules Creek Progressive Rehabilitation Procedure Preparation of the Annual Rehabilitation Plan Whitehaven Maules Creek Corrective Actions Protocol
	Regular site inspections of rehabilitated areas to allow early identification of any emerging threats to rehabilitation.	Monthly inspections.	
	Weed and feral animal infestations; and Documentation of all weed management and eradication programs and follow-up inspections.	Current records kept.	

The rehabilitation quality assurance process will be used when planning future rehabilitation activities. The objective for rehabilitation will be one of continuous improvement and includes:

- Utilising relevant industry best practice rehabilitation techniques;
- Utilising key personnel with rehabilitation and closure experience;
- Continuing to undertake rehabilitation monitoring and assessing against rehabilitation criteria; and
- Reviewing rehabilitation performance against the Trigger Action Response Plan in **Section 10**.

8. REHABILITATION MONITORING PROGRAM

8.1 Analogue Site Baseline Monitoring

Rehabilitation completion criteria have been developed based on benchmark data for the White Box grassy woodland (BVT 226 and PCT 1383) and Narrow-leaved Ironbark - Cypress Pine - White Box shrubby open forest (BVT 316 and PCT 592).

The following vegetation structural parameters below will be measured at each plot and will be compared against the rehabilitation completion criteria for the relevant PCTs/BVTs:

- native species richness;
- native overstorey cover;
- native mid-storey cover; and
- native groundcover (grasses).

Additional parameters will also be monitored to evaluate the condition of the rehabilitation areas and ongoing management measures:

- erosion type and severity; and
- fauna species richness and/or abundance.

Over time (as revegetation develops and matures) additional monitoring parameters may be included in the monitoring program to inform revegetation condition and development (e.g. plant fertility status [fruiting/flowering], woody species density and tree stem diameter and height) and determine requirement of management measures (e.g. thinning).

As agreed with the OEH (now BCD), MCCM proposes to use the benchmark data for the relevant PCTs/BVTs as interim rehabilitation completion criteria until appropriate analogue/reference sites have been determined, which are representative of the target vegetation communities for rehabilitation of the MCCM.

Transects will be established in adjacent undisturbed (analogue) communities to track the rehabilitation progress, predict self-sustainable values and compare the rehabilitation and analogue sites. At a minimum, revegetated communities will be of similar (at least 80%) or higher quality than an analogue site at the time of Project relinquishment.

8.2 Rehabilitation Establishment Monitoring

Visual monitoring of revegetation will be conducted on a regular basis to assess whether vegetation is establishing and to determine the need for any maintenance and/or contingency measures (such as the requirement for supplementary plantings, erosion control and weed control).

The quality of rehabilitation will be monitored annually using EFA or a similar systems-based approach. An overview of the EFA method is provided below.

EFA is a CSIRO developed method used to provide indicators of rehabilitation success and allows the assessment of ecosystem sustainability through the plotting of development trajectories. EFA aims to measure the progression of rehabilitation towards a self-sustaining ecosystem through the assessment of landscape function, vegetation dynamics and habitat complexity (http://www.csiro.au/Organisation-Structure/Divisions/Ecosystem-Sciences/EcosystemFunction Analysis.aspx). EFA is divided into the following three modules/components: the LFA component; the vegetation composition and dynamics component; and the habitat complexity component.

The LFA Soil Surface Analysis component of EFA provides an effective quantitative tool for assessing ecosystem function. Data recorded as part of LFA monitoring is based on landscape processes and focuses on the dynamics of resource mobilisation, transport, deposition, use and loss of soil condition. Parameters assessed as part of LFA monitoring typically include:

- Soil cover;
- Perennial grass basal cover and canopy cover;

- Litter cover, origin and incorporation;
- Cryptogam cover;
- Crust condition;
- Erosion type and severity;
- Amount of deposited material;
- Micro-topography (surface roughness);
- Surface resistance to disturbance; and
- Soil type (slake and texture tests).

The vegetation composition and dynamics component of EFA monitoring provides a quantitative assessment of species composition, density and cover. The habitat complexity component of EFA provides an index of the development of available habitats for fauna and includes measurements of vegetation cover, ground habitat (litter, logs and rocks) and the availability of water. The monitoring of habitat complexity is based on the assumption that more environmental niches for fauna develop as the diversity of vegetation and ground cover (e.g. litter) increases.

A number of permanent transects will be established within rehabilitated areas. Corresponding transects will also be established in adjacent undisturbed (analogue) communities. The information obtained will be used to track the rehabilitation progress, predict self-sustainable values and compare the rehabilitation and analogue sites. Remedial management strategies will be implemented where necessary. These methods will provide quantitative data that measures changes in:

- Floristic diversity including species area curves and growth forms;
- Ground cover diversity and abundance;
- Vegetation structure and habitat characteristics (including ground cover, cryptogams, logs, rocks, litter, projected foliage cover at various height increments);
- Understorey density and growth (including established shrubs, direct seeding and tubestock plantings and tree regeneration);
- Overstorey characteristics including tree density, health, and survival; and
- Other habitat attributes such as the presence of hollows, mistletoe and the production of buds, flowers, and fruit.

Visual assessments will also be incorporated into the revegetation monitoring programme to allow for the rapid application of remedial actions where necessary.

8.3 Measuring Performance Against Rehabilitation Objectives and rehabilitation Completion Criteria

The combination of monitoring methodologies described in Section 8.1 and 8.2 allows the site to be assessed over time with the resultant data enabling Maules Creek to assess the trajectory of the ecosystem being monitored whilst also providing an overall assessment of lands in terms of land capability. In turn, this data can be used to decide if the site is converging on a target functional state or requires further treatment plans. Rehabilitation monitoring will allow a review of short term and long-term trends. Monitoring programs are aligned, where practicable, with biodiversity monitoring requirements to ensure consistent assessment of ecological development and function."

Monitoring results and the effectiveness of rehabilitation measures, including progress against the detailed performance and completion criteria, are reported through the Annual Rehabilitation Report are subject to independent audit where required under relevant regulatory approvals and guidelines.

MCCM will evaluate the rehabilitation monitoring and methodologies annually based on performance and consultation with key stakeholders. Any changes will be outlined in the RMP and Annual Review.

9. REHABILITATION RESEARCH, MODELLING AND TRIALS

9.1 Current Rehabilitation Research, Modelling and Trials

Under Condition 15 of EPBC 2010/5566, MCCM must invest $1 million (M) into the research of Box Gum Woodland mining rehabilitation and a further $1.5M into research for threatened species recovery actions under Condition 16 of EPBC 2010/5566.

Section 8.1.1.11 of the 2021 Annual Review reports MCCM funding the following research activities to date:

- Annual spring surveys of potential Swift Parrot foraging habitat sites across their breeding range in Tasmania;
- Radio tracking of habitat and roost usage of South-eastern Long-eared Bat and continuing the development of acoustic techniques for Nyctophilus species call identification;
- Designing, installing and undertaking survey nest predation mitigation structures for the Regent Honeyeater. This also included Noisy Miner management and facilitation of bi-annual volunteer survey programs; and
- Draft reporting of the seed bank within natural and stockpiled soil samples at the MCCM.

The research programs will be used to assist MCCM in identifying potential rehabilitation improvements and restoration practices, including the revegetation of Box Gum Woodland and management of threatened species on site and in BOAs.

9.2 Future Rehabilitation Research, Modeling and Trials

As part of MCCMs closure requirements, a Final FVMCP must be submitted to the NSW Resources Regulator by December 2026. In preparation of the current Draft FVMCP, Whitehaven engaged Australian Groundwater and Environmental Consultants Pty Ltd (AGE) to complete a groundwater aspects assessment. The assessment suggested that Whitehaven undertake several supplementary studies to identify knowledge gaps and/or verify groundwater modelling predictions to include in the Final FVMCP. These studies include:

- Using the updated BTM complex groundwater flow model to simulate water level recovery in the final void and provide estimates of groundwater inflow for the water balance model;
- Collect spoil samples from site and conduct laboratory testing to determine permeability and porosity (at emplaced measure) for use in updated groundwater modelling;
- Conduct additional column testing to resolve uncertainties including:
    - Replacing deionised water with groundwater collected from bores or in-pit at the MCCM;
    - Replacing crushed core with actual spoil material collected from the MCCM waste emplacements; and
    - Use peristaltic pumps to pump groundwater through columns to represent gradual movement of groundwaters.

Section 5.3 of the current FVMCP also anticipates the following technical studies and assessments will be undertaken during post-closure to confirm that rehabilitation completion criteria is being met:

- A geotechnical stability assessment of the final void to verify the long-term stability and safety of the final void;
- A stability assessment of key final landforms (e.g OEAs and retained water management infrastructure including long-term drainage structures and sediment dams) to confirm the landforms and structures are operating as designed and are stable in the long-term;
- Verification and re-simulation of final void groundwater model and water balance using post-mine groundwater and surface water monitoring program results to confirm predictions after the cessation of mining and verify long-term final void waterbody recovery predictions;
- A rehabilitation assessment to confirm that MCCM rehabilitation completion criteria have been met. The MCCM rehabilitation completion criteria includes water quality criteria for runoff from rehabilitated landforms, which would therefore also be assessed in the rehabilitation assessment; and
- A land contamination assessment once all infrastructure demolition and decommissioning activities have been completed.

All technical studies and assessments will be undertaken by suitably qualified persons.

10. INTERVENTION AND ADAPTIVE MANAGEMENT

Potential threats to rehabilitation have been identified as part of the RMP Risk Assessment discussed in **Section 3**, with a full copy of the risk assessment attached as **Appendix A**. Monitoring and inspection programs will be implemented at site to assess the success of overall rehabilitation and identify any areas that require improvement.

MCC will undertake and record annual rehabilitation inspections. In the event the inspection identifies sub-optimal rehabilitation, further investigation will be undertaken to establish the cause and appropriate remediation strategy. Mitigation actions will be recorded on the MCCM document control system for implementation. Where necessary, rehabilitation procedures will be reviewed and revised in order to improve rehabilitation outcomes.

MCC will also refer to the site-specific The Trigger Action Response Plan (TARP) shown in **Section 10.** The TARP identifies the proposed contingency strategies in the event of unexpected variations or impacts to rehabilitation outcomes. The TARP outlines the key identified risks, their trigger and proposed mitigation measures to reduce the identified risks.

Table 19: Trigger Action Response Plan at MCCM

Aspect/Category	Key Element	Element Number	Trigger Response	1st Level Trigger	2nd Level Trigger
Landform stability	Slope gradient	1	Trigger	<70% of the rehabilitation area has slopes within the limits stipulated in the previous MOP.	<55% of the rehabilitation area has slopes within the limits stipulated in the previous MOP.
			Response	• Undertake re-grading and revegetation of the area.	• Undertake a review of the landform design, including survey if required. • Undertake re-grading and revegetation of the area.
	Erosion control	2	Trigger	Minor gully or tunnel erosion present and/or minor rilling (rilling up to 300 mm in depth or width).	Slumping and/or significant gully or tunnel erosion present and/or significant rilling, which is compromising landform.
			Response	• An inspection of the site will be undertaken by a suitably trained person. Investigate opportunities to install water management infrastructure to address erosion. • Remediate as appropriate.	• Engage suitably qualified person(s) to assist with the management of erosion and sedimentation at the site and provide recommendations to appropriately remediate the erosion. • Remediate as soon as practicable.
	Water Management Structures	3	Trigger	Water management structures (sediment dams, channels, contour banks) minor erosion and/or scouring as determined by monitoring.	Water management structures fail or display significant scouring / erosion as determined by monitoring.
			Response	• An inspection of the site will be undertaken by a suitably trained person.	• Engage a suitably qualified person to develop a site-specific remediation plan and review water management structure design criteria.

Aspect/Category	Key Element	Element Number	Trigger Response	1st Level Trigger	2nd Level Trigger
				• Identify remedial actions such as amelioration, revegetation or alternative scour protection.	• Provide for physical works on the basis of design review.
Biodiversity (native vegetation areas)	Native Species Richness	4	Trigger	Less than the relevant mean target criteria for the "Time Since Initial Revegetation" (i.e. BVT 226 Year 1 = 1 or BVT 316 Year 5 = 6) in Table 16	Less than the relevant minimum target criteria for the "Time Since Initial Revegetation" (i.e. BVT 226 Year 3 = 2 or BVT 316 Year 2 = 2) in Table 16.
			Response	• Review methods used by revegetation contractor; seed or seedling quality, soil quality or weather conditions since time of revegetation to determine if the cause of delayed native species richness.	• Engage a suitably qualified person to investigate causes for revegetation failure and recommend remedial actions. • Undertake a field survey to identify which species are not present in revegetation areas. • Re-seed or maintenance planting of revegetation areas with unsatisfactory species richness. • Implement appropriate management actions, including revising rehabilitation procedures if required.
	Native Groundcover (Grasses)	5	Trigger	Less than the relevant mean target criteria for the "Time Since Initial Revegetation" (i.e. BVT 226 Year 1 = 2% or BVT 316 Year 5 = 8%) in Table 16.	Less than the relevant minimum target criteria for the "Time Since Initial Revegetation" (i.e. BVT 226 Year 3 = 5% or BVT 316 Year 2 = 2%) in Table 16.
			Response	• Review methods used by revegetation contractor; seed or seedling quality, soil quality or weather conditions since time of revegetation to determine if the	• Engage a suitably qualified person to investigate causes for germination failure and recommend remedial actions.

Aspect/Category	Key Element	Element Number	Trigger Response	1st Level Trigger	2nd Level Trigger
				cause of delayed native groundcover (grasses).	• Undertake a field survey to identify likely causes of unsatisfactory germination rates. • Re-seed areas with unsatisfactory cover. • Review seeding procedures incl. seasonal mixes, timing and seed rate per hectare. • Implement appropriate management actions including revising rehabilitation procedures if required.
	Exotic Plant Cover (Weeds)	6	Trigger	Increasing number richness and cover of exotic species and/or occurrence of newly identified exotic species.	More than 10% of domain area and/or significant weed invasions.
			Response	• Engage weed management contractor to remove / spray introduced weed species.	• Engage weed management contractor to remove introduced weed species. Investigate management measures to improve native plant establishment and weed suppression including additional soil amelioration, establishment and retention of cover crops until weed presence is at acceptable levels. • Implement recommendations as appropriate.

Aspect/Category	Key Element	Element Number	Trigger Response	1st Level Trigger	2nd Level Trigger
Water Quality	Pest Animal Control	7	Trigger	Site fauna monitoring shows an increase in pest animal species following control measures implemented across sites.	Significant pest animal occurrences of newly identified pest species identified through site inspections and monitoring.
			Response	• Identify the location of pest animal issues and review the need for further control measures.	• Review the issues and facilitate additional control measures as required.
	Water quality	8	Trigger	Water quality exceeds baseline values	Long term upward trend outside ANZECC quality guideline limits values
			Response	• Review and investigation of water quality monitoring and management where appropriate. • Implement relevant remedial measures where required.	• Hydrologist (or similar specialist) to review sampling and climate data and review likely cause(s). If mine related, undertake assessment to identify sources of water quality degradation and recommend remedial actions. • Implement specialist recommendations
	Discharge water quality at licence discharge points	9	Trigger	Sediment basin discharge exceeds EPL criteria for pH, TSS and/or oil/grease	Long term upward trend outside ANZECC quality guideline limits

Aspect/Category	Key Element	Element Number	Trigger Response	1st Level Trigger	2nd Level Trigger
			Response	• Re-sampling will be undertaken during the next discharge event to confirm results exceed limits, and investigate potential causes.	• Review sediment basin maintenance and discharge procedures, and sediment basin capacity requirements. • Undertake required corrective actions.
Soil/spoil Quality	Salinity	10	Trigger	Increasing trend in soil/water salinity levels	Presence of salt scalds
			Response	• Undertake soil/spoil testing to verify EC and recommend further soil / spoil amelioration	• Engage a specialist consultant suitably qualified person to develop a site specific management report to be implemented to remediate salinity scald. • Undertake works as required.
	Spoil surface layers chemical characteristics	11	Trigger	Increasing trend in soil dispersivity (EAT)	Soil is moderately to highly dispersive
			Response	• Undertake testing to determine required amelioration and undertake amelioration as required.	• Review material handling practices to confirm that non-dispersive spoil is selectively dumped at final RL where possible and /or dispersive spoils emplaced at surface are appropriately ameliorated. • Ameliorate dispersive spoils (for example with coarse gypsum) to a depth of 300 mm. • Revegetate if required.

Aspect/Category	Key Element	Element Number	Trigger Response	1st Level Trigger	2nd Level Trigger
	Soil biophysical and chemical characteristics	12	Trigger	Soil nitrogen, potassium and phosphorous levels are not in the range of analogue sites by Year 5.	Soil physical, chemical and biological characteristics are not able to sustain the desired final land use.
			Response	• Engage a consultant to recommend appropriate soil/spoil amelioration. • Undertake amelioration and re-vegetation in accordance with the consultant recommendations.	• Engage a consultant to recommend appropriate soil/spoil amelioration. • Undertake amelioration and re-vegetation in accordance with the consultant recommendations.
	Topsoil Depth	13	Trigger	Topsoil is not reinstated to, at least, the minimum depth specified for the proposed final land use.	Sufficient suitable topsoil cannot be identified for reinstatement at the minimum specified depth for the proposed final land use.
			Response	• Top dress with additional suitable topsoil resource. • If additional suitable material is not immediately available stabilise the area with cover crop until additional suitable topsoil is sourced and re-emplaced.	• Undertake a review of the topsoil balance to confirm sufficient material to meet minimum depth requirements. • Investigate suitable topsoil resource substitutes and introduce if required.

11. REVIEW, REVISION AND IMPLEMENTATION

In accordance with Clause 11 of Schedule 8A to the Mining Regulation 2016, MCCM will amend this RMP in the following circumstances:

- As a consequence of an amendment made to the rehabilitation objectives, rehabilitation completion criteria or final landform and rehabilitation plan;
- To reflect any changes to the risk control measures in the rehabilitation management plan that are identified in a rehabilitation risk assessment; and
- Whenever directed in writing to do so by the Secretary.

Schedule 5 Condition 5 of the Project Approval (MOD 8) states the following for the revision of strategies, plans and programs:

> *"5. Within 3 months of the submission of an:*
>
> *(a) annual review under condition 4 above;*
>
> *(b) incident report under condition 8 below;*
>
> *(c) audit under condition 10 below; or*
>
> *(d) any modification to the conditions of this approval,*
>
> *the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Planning Secretary."*

The lease holder (Whitehaven) must ensure the Rehabilitation Management Plan remains current and relevant to ensure it defines the rehabilitation outcomes to be achieved in relation to the mining area and sets out the strategy to achieve those outcomes.

Whenever any foreseeable hazard is identified that presents a risk to achieving the rehabilitation objectives, the rehabilitation completion criteria and the final landform and rehabilitation plan, the lease holder is required to update the Rehabilitation Risk Assessment and the Rehabilitation Management Plan.

The RMP document was updated in November 2023 based on the following:

- Approval of the Rehabilitation Objectives (ROBJ) (Section **4**).
- Approval of the Final Landform Plans (Section **5**).
- The document was also updated to give context on rehabilitation completion criteria (Section **4**).

Updated based on consultation outcomes (Section Appendix B).

12. SUPPORTING APPENDICES

This section includes the documents that have been appended to this RMP .

These include:

- Appendix A – Rehabilitation Risk Assessment
- Appendix B – Consultation for RMP
- Appendix C - Mining Amendment (Standard Conditions of Mining Leases—Rehabilitation) Regulation 2021

Appendix A: Rehabilitation Risk Assessment

			Key to Risk Assessment:	Green = RMP Form and Way Document (Section 6.2) - Note minor edits to wording.								
				Grey = risk from RR Risk Guideline (note, minor edits to wording)								
				Cream = risk from RR TAP guidance								
				Red = Added as part of this specific RA								
Risk Aspect Number	**RMP Phase**	**Applicable RMP Mining Domain (new domain names)**	**RMP Form and Way Document Aspect (Section)**	**Risk Management** **Unwanted Event / Impact**	**Applicable (Yes/No)**	**Risk Control Measures/Comments**	**How the effectiveness of the risk control measures are assessed/validated (Validation Method)**	**Risk Control Effectiveness**	**Consequence Category**	**Expected Risk Consequence**	**Risk Likelihood**	**Current Risk Rating**
1	General/All Phases	All Domains	General	Insufficient skills and experience of rehabilitation personnel.	Yes	1. Experienced contractors and required equipment. GPS controlled dozers and digger 2. Experience rehabilitation and closure team. Use of contractors. 3. Landform Design specialist included in this risk assessment process. 4. Record keeping. & sign off process	1. Record keeping for experienced and trained personnel. 2. Position descriptions 3. Quality assurance process for rehabilitation 4. Contractor HSE Management/ competent person appointment and training	Satisfactory	Financial	1 Insignificant	C - Possible	**L3**
2		All Domains		Lack of clearly defined responsibilities.	Yes	1. Position descriptions		Satisfactory	Financial	1 Insignificant	D - Unlikely	**L2**
3		All Domains		Insufficient funding for or prioritisation of rehabilitation activities.	Yes	1. RCE process 2. Internal calculation on bonds undertaken on a six monthly basis	Copy of bond from RR	Satisfactory	Financial	2 Minor	D - Unlikely	**L4**
4		All Domains	General	Target vegetation communities are not achieved	Yes	1. Rehabilitation monitoring 2. Existing robust criteria which have been reviewed for the RMP. These will be reviewed with every RMP update or when triggered from the Resources Regulator. 3. Targeted seed mix, sourced from reputable suppliers	1. Rehabilitation monitoring against criteria.	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
5		All Domains		Rehabilitated areas do not meet the completion criteria within the RMP/Project Approval at final closure.	Yes	1. Existing robust criteria which have been reviewed for the RMP. These will be reviewed with every RMP update or when triggered from the Resources Regulator. 2. Rehabilitation monitoring. 3. Rehab sign off process, and QA to ensure that rehabilitatio is built to design	1. Rehabilitation monitoring against criteria.	Satisfactory	Legal and Compliance	2 Minor	C - Possible	**M6**

6			6.2.1. 1 Soils and Materials	Inadequate topsoil and capping material quantity available to be salvaged during operations for later use in rehabilitation.	Yes	<u>Soils</u> 1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2.Excavation/clearing permit 3. Top soil permit and excavation register 4. Existing process for clearing veg and soil management. This includes erosion and sediment control. 5. Manage topsoil heights - <u>4 m height.</u> Known topsoil storage locations. Note there is a shortage of topsoil. See later lines about using ameliorants in rehabilitation. 6. Seeding of topsoil stockpiles where required. 7. Proposed topsoil and subsoil stripping depth. 8. Annual Soil Surveys - see Landloch reports. <u>Capping and Overburden</u> 9. Reject material placed inpit. Area is capped, with additional capping for reject material identified as being PAF. 10. Use of WENCO system. dumping limit to where reject can be dumped to	1. Implementation of Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. test pitting and lidar survey to ensure top soil placement is to the correct depth 3. Capping plan (covering availability and type of capping).	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
7				Less than adequate soil/materials characterisation undertaken during operations to inform rehabilitation.	Yes	1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2.Excavation/clearing permit 3. Top soil permit and excavation register 4. Previous soil assessments and material characterisation. 5. Use of gypsum and other ameliorants in rehabilitation areas. General gypsum rates per hectare of between 2 and 2.5 tonnes. 6. Rehabilitation monitoring process and soil testing as part of this monitoring. 7. Annual Soil Surveys - see Landloch reports. 8. In areas of seed failure additional sampling undertaken.	1. Soil assessments and overburden characterisation records. 2. Soil testing in rehabilitation areas.	Satisfactory	Environment	2 Minor	D - Unlikely	**L4**
8				Contamination of topsoil due to overstripping	Yes	1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Stripping report completed by soil scientist. 3. Stripping activities completed by trained specialists. 4. Four metre stockpile height is approved in the MOP. Constrained by small footprint with limited areas to stockpile topsoil. 5. Annual Soil Surveys - see Landloch reports. 6. Supervision and monitoring of topsoil stripping activities	1. Implementation of Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Landform Design and Rehabilitation Procedures. QAQC and signoff of activities. 3. Training records	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
9				Loss of topsoil properties due to rehandling or failure to collect soil	Yes	1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Stripping report completed by soil scientist. 3. Stripping activities completed by trained specialists. 4. Four metre stockpile height is approved in the MOP. Constrained by small footprint with limited areas to stockpile topsoil. 5. Topsoil register/Map. 6. Planning and scheduling	1. Implementation of Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Landform Design and Rehabilitation Procedures. QAQC and signoff of activities. 3. Training records	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
10				Poor stockpile location selection	Yes	1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Stripping report completed by soil scientist. 3. Stripping activities completed by trained specialists. 4. Four metre stockpile height is approved in the MOP. Constrained by small footprint with limited areas to stockpile topsoil. 5. Annual Soil Surveys - see Landloch reports. 6. Direct placement of topsoil onto rehabilitation areas - where possible. 7. Mine planning.	1. Implementation of Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Landform Design and Rehabilitation Procedures. QAQC and signoff of activities. 3. Training records	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
11	21.0	All Domains		Less than adequate weed and pest management during all phases.	Yes	1. Weed management program including spraying and scalping. Annual Works Schedule. 2. Feral animal management program. 3. Seed reputable seed supplier	1. Records of weed and ferals management	Satisfactory	Financial	1 Insignificant	C - Possible	**L3**
12			6.2.1.2 Flora 6.2.1 .3 Fauna	Land clearing ahead of the mine/other projects does not meet the requirements (clearing window approved areas required)	Yes	1. Biodiversity MP have a range of checklists and processes. 2. Maules Creek Procedure - Clearing Operations 3. Land Disturbance Protocol and Pre Clearance Permit. 4. Risk Assessment completed prior to clearing. Specialised contractors undertake clearing. Clearing areas are marked, staff undertake training and have daily TBTs. 5. Ecologists on site during and following clearing. 6. Completion of Annual Clearing Report. 7. Where required extraordinary clearing can be applied for outside of clearing window	1. Pre clearance permit 2. Training records. 3. Post clearance inspection and reporting. 4. Completion of Annual Clearing Report.	Satisfactory	Buisness Interuption and Equipment Damage	2 Minor	D - Unlikely	**L4**

13			6.2.1 .4 Rock/Overburden Emplacement	Limited rock/overburden resulting in a materials deficit for rehabilitation.	Yes	1. No shortage of overburden at site. 2. Mine planning. 3. Landform Design Protocol. 4. Landform Construction Protocol.	1. Overburden records - volume and locations. 2. Landform Design and Rehabilitation Procedures. QAQC and signoff of activities.	Satisfactory	Environment	2 Minor	D - Unlikely	**L4**
14			6.2.1.5. Waste Management	Inappropriate management/disposal of waste during operations which causes a longterm rehab issue.	Yes	1. Established waste management system. 2. Site inspections	1. Waste records	Satisfactory	Environment	3 Medium	E - Rare	**L3**
15			6.2.1 .6 Geology and Geochemistry	Adverse geochemical/chemical composition of materials such as overburden, interburden, processing wastes, subsoils and topsoils and imported cover materials.	Yes	1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Soil and overburden testing. Annual Soil Surveys - see Landloch reports. 3. Use of ameliorants 4. No PAF in overburden from existing testing.	1. Soil and overburden testing results. 2. Records of ameliorants.	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
16			6.2.1.7 Material Prone to Spontaneous Combustion	Less than adequate management of spontaneous combustion in overburden areas.	Yes	1. Overburden testing. 2. Mine planning and material placement. 3. Capping of reject material. 4. Spontaneous Combustion Management Plan	1. Records of overburden placement. 2. Coal quality testing.	Satisfactory	Environment	3 Medium	E - Rare	**L3**
17			6.2.1.8 Material Prone to Acid Mine Drainage	Less than adequate management of Potential Acid Forming (PAF) materials during operations.	Yes	1. The identification of PAF material will initially occur through drill hole sampling. 2. Reject material identified as being PAF will be placed within the OEA or in pit to provide a final depth of inert cover of at least 15m 3. Additional overburden sampling when required. 4. Maules Creek Coal Reject Disposal Procedure.	1. Testing results for tailings, rejects, overburden, interburden and soils.	Satisfactory	Environment	3 Medium	E - Rare	**L3**
18			6.2.1.9 Ore beneficiation waste management	Poor handling and containment of geochemical and geotechnically unsuitable reject materials.	Yes	1. Reject material identified as being PAF will be placed within the OEA or in pit to provide a final depth of inert cover of at least 15m. 2. Maules Creek Coal Reject Disposal Procedure. Note - no tailings.	1. Testing results for tailings, rejects, overburden, interburden and soils.	Satisfactory	Environment	3 Medium	E - Rare	**L3**
19			6.2.1 .10 Erosion and sediment control	Poor erosion and sediment control management during operations (prior to rehabilitation).	Yes	1. Water Management Plan covering operational phase. 2. Mine planning	1. Inspections. 2 .Records of water management designs as per Blue Book. 3. Water management maintenance.	Satisfactory	Environment	2 Minor	C - Possible	**M6**
20			6.2.1 .13 Management of potential cultural and heritage issues	Less than adequate management of cultural and heritage sites during operations/lack of awareness of cultural heritage obligations.	Yes	1. Implementation of ACHMP and European Heritage MP. 2. Prior to clearing CH surveys are undetrtaken and all artefacts relocated 3. permit to disturb process	1. Records indicating implementation of ACHMP	Satisfactory	Legal and Compliance	2 Minor	D - Unlikely	**L4**
21			6.2.1 .14 Exploration activities	Less than adequate management of exploration activities which poses a risk to future rehabilitation.	Yes	1. Locations of exploration holes are known. 2. All exploration n EL's with these being rehabilitated as they go.	1. Records of exploration (including status - active or rehabilitated)	Satisfactory	Buisness Interuption and Equipment Damage	1 Insignificant	E - Rare	**L1**
22			6.2.2.1 Site Security	Public safety risks due to less than adequate site security during decommissioning/general operations.	Yes	1. To be assessed prior to closure (as part of 2026 Final Void and Mine Closure Plan). Currently have inductions, fencing and site security.	1. Details in Final Void and Mine Closure Plan 2. Site waste and demolition records prior to closure.	Satisfactory	Legal and Compliance	2 Minor	D - Unlikely	**L4**
23			6.2.2.2 Infrastructure to be removed or demolished	Hazards associated with retained infrastructure (e.g. dams, site services).	Yes	1. Consent (Schedule 3 Condition 71) and MOP outlines that *Surface Infrastructure - To be decommissioned and removed, unless the Resources Regulator agrees otherwise.* 2. To be included in 2026 Final Void and Mine Closure Plan		Satisfactory	Environment	1 Insignificant	D - Unlikely	**L2**
24				Generation of material and waste products from the demolition process.	Yes	1. Existing waste management services. 2. To be included in the 2026 Final Void and Mine Closure Plan		Satisfactory	Environment	1 Insignificant	D - Unlikely	**L2**
25				Less than adequate decommissioning/ removal/augmentation of the mine water management system including any dams prescribed by the Dams Safety Act 2015.	Yes	1. Existing water management system. 2. To be included in the 2026 Final Void and Mine Closure Plan. 3. MOD 7/8 water assessment looked at the final use of site dams.		Satisfactory	Environment	1 Insignificant	D - Unlikely	**L2**
26				Risks to closure associated with existing Groundwater bores and piezometers		1. Groundwater bores and piezometers will have standpipes removed and sealed.	1. Records of decommissioned and active piezometers.	Satisfactory	Environment	1 Insignificant	D - Unlikely	**L2**

27	22.0	MD1 - Infrastructure MD3 - Water Management	6.2.2.3 Buildings, structures and fixed plant to be retained	Risks associated with retained heritage items.	Yes	1. Management as per Historic Heritage Management Plan. 2. Historical Heritage items located outside of mining areas. None in ML.	1. Details in Final Void and Mine Closure Plan	Satisfactory	Environment	1 Insignificant	E - Rare	**L1**
28			6.2.2.4 Management of carbonaceous/ contaminated material	Contamination resulting from decommissioning activities (e.g. storage and use of hydrocarbons/chemicals, drilling fluids, spillage of dirty or produced saline water, brine, sewage). Carbonaceous material remaining at closure.	Yes	1. All remaining hydrocarbons such as diesel and lubricants and other hazardous materials will be either used or discarded by an authorised waste contractor. 2. Carbonaceous material to be buried at site with sufficient capping material used in these areas. 3. Contamination sites register.Landfarm location. 4. Phase 1 and 2 Assessments required as part of the Final Void and Mine Closure Plan. To be included in 2026 Final Void and Mine Closure Plan. Possibly some contamination remediation prior to closure. 5. Contamination assessment completed in the previous Henway yard prior to dumping over this areas with overburden. Some remediation completed. 6. Ongoing contamination assessment and closure risk assessment to be undertaken through the Final Void and Mine Closure Plan process, including identification and management of residual contamination risks	1. Details in 2026 Final Void and Mine Closure Plan. Contamination Assessment and Demolition Assessment.	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
29	Landform Establishment Phase	All Domains	6.2.3.1 Water management infrastructure	Less than adequate rehabilitation of water management infrastructure.	Yes	1. Rehabilitation design includes water management. 2. Rehabilitation areas include geofluvial design. Topo factor risk analysis is used in design. 3. Landform Design Protocol. 4. Landform Construction Protocol. 5. Use of onsite rock for rock lined drains and drop structures. Use of crusher and hardness testing.	1. Engineering design. 2. Quality assurance process for rehabilitation. 3. Details of water management in 2026 Final Void and Mine Closure Plan (including study).	Satisfactory	Environment	2 Minor	D - Unlikely	**L4**
30				Insufficient future water licensing requirements for water retained within the final void(s) following mine closure.	Yes	1. To be assessed as part of 2026 Final Void and Mine Closure Plan. 2. Existing surface and groundwater monitoring. 3. Also assessing as part of the water modelling process. Every three years.	1. Details of water management in 2026 Final Void and Mine Closure Plan (including study). 2. Monitoring results.	Satisfactory	Legal and Compliance	2 Minor	D - Unlikely	**L4**
31				Less than adequate studies associated with surface and groundwater management (e.g. creek diversions, geomorphological and hydraulic modelling, aquatic ecological assessments, final void water balance, groundwater modelling, geochemical studies, etc.)	Yes	1. Further detailed investigations, modelling and updated risk assessments to be completed as part of the 2026 Final Void and Mine Closure Plan process, including consideration of residual risks to water sources and the requirements of the NSW Aquifer Interference Policy and relevant DPE groundwater guidelines 2. Existing surface and groundwater monitoring & model updated on 3yr basis	1. Details of water management in 2026 Final Void and Mine Closure Plan (including study). 2. Monitoring results.	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
32			6.2.3.2 Final landform construction: general requirements	Geotechnical/geochemical risks associated with landform establishment.	Yes	1. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 2. Soil testing. Annual Soil Surveys - see Landloch reports. 3. Use of ameliorants 4. Engineering design. Use of SIBERIA model.	1. Soil testing results. 2. Records of ameliorants. 3. Engineering design. 4. Quality assurance process for rehabilitation.	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
33				Less than adequate landform design (e.g. macro and micro-relief)	Yes	1. Rehabilitation design using geofluvial design. Topo factor risk analysis is used. 2. Landform Design Protocol. 3. Landform Construction Protocol.	1. Engineering design. 2. Quality assurance process for rehabilitation.	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
34				Not dumping to LoM landform which results in re handle (rehab) at end of mine life.	Yes	1. Landform Design Protocol. 2. Quality Assurance.	1. Engineering design. 2. Quality assurance process for rehabilitation. 3. Mine planning and dumping plans	Satisfactory	Financial	2 Minor	D - Unlikely	**L4**
35				Final landform unsuitable for final land use (e.g. large rocks present affecting cultivation and settlement).	Yes	1. Designs as per approved final landform/ vegetation type. No pasture for final land use. 2. Quality assurance. 3. Annual rehabilitation Monitoring Program	1. Engineering design. 2. Quality assurance process for rehabilitation.	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
36			6.2.3.3 Final landform construction: reject emplacement areas	Exposure or release of reject material at closure causing long term issues. Not sufficient capping.	Yes	1. Reject material identified as being PAF will be placed within the OEA or in pit to provide a final depth of inert cover of at least 15m. When non PAF the site completes 5 metres. 2. Mine planning. 3. Geotechnical testing for capping material. 4. Maules Creek Coal Reject Disposal Procedure. 5. No tailings, only coarse rejects.	1. Testing results for tailings and rejects. 2. Mine planning and records of tailings/rejects and overburden. .	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**

37			6.2.3.4 Final landform construction: final voids, highwalls and low walls	Final voids, highwalls and low walls pose a risk to public safety and/or sterilises the land available for future final land uses	Yes	1. Site access is limited by fencing and security. 2. Final void to be designed as per approval 3. Geotechnical investigations, long-term stability assessments and risk assessments to be undertaken as part of the 2026 Final Void and Mine Closure Plan, with implementation of identified management measures during closure	1. Copy of the Geotechnical works and risk assessment required for the 2026 Final Void and Mine Closure Plan (not yet required). 2. Execution of closure plan report including validation of controls (not yet required).	Satisfactory	Health and Safety	3 Medium	D - Unlikely	**M6**
38				Lack of detail around final void management strategy (e.g. water balance, water quality, geotechnical assessments, future water licencing requirements).	Yes	1. Schedule 3 Condition 74 of PA 10_0138 requires the proponent to prepare and implement a Final Void and Mine Closure Plan. A draft is required to be submitted to the Resources Resources Regulator by the end of December 2020 (Completed), and a final plan must be submitted by the end of December 2026. See details under Schedule 3 Condition 74.	1. Final Void and Mine Closure Plan (by December 2026). 2. Execution of closure plan report including validation of controls (not yet required).	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
39			Section 6.2.4 Growth Medium Development	Lack of information around ameliorants and or strategies required to address constraints and or enhance the substrate.	Yes	1. Soil testing. Annual Soil Surveys - see Landloch reports. 2. Addition al testing required with advice from local agronomist. 3. Use of ameliorants. 4. Whitehaven Maules Creek Coal Mine - Topsoiling Protocol.	1. Soil testing results. 2. Records of ameliorants. 3. Rehabilitation monitoring reports.	Satisfactory	Environment	2 Minor	D - Unlikely	**L4**
40	Growth Medium Development Phase	MD 1 - Infrastructure MD 4 - Overburden Emplacement MD 5 - Active Mining MD 8 - Other (Stockpiled Area)		Less than adequate handling and management of mine materials (e.g. overburden, reject materials etc.) to address potential geochemical and geotechnical constraints for rehabilitation.	Yes	**Soil** 1. Topsoil stockpile reconciliation. Specific Domain 5E - Stockpiled Material from the current MOP. 2.Whitehaven Maules Creek Coal Mine - Topsoiling Protocol. 3. Experienced in using ameliorants. 4. Proposed topsoil and subsoil spreading depth. Generally 300mm. **Rejects** 1. Reject material identified as being PAF will be placed within the OEA or in pit to provide a final depth of inert cover of at least 15m. 2. Maules Creek Coal Reject Disposal Procedure. **Overburden** 1. Mine planning. 2. Geotechnical testing for capping material.	1. Soil and geochemical testing. 2. Quality assurance process for rehabilitation.	Satisfactory	Environment	3 Medium	D - Unlikely	**M6**
41	Ecosystem and Land Use Establishment Phase	MD 1 - Infrastructure MD 4 - Overburden Emplacement MD 5 - Active Mining MD 8 - Other (Stockpiled Area) Existing Rehabilitation Areas	6.2.5. Ecosystem and land use establishment	Inadequate type and range of species planted (including cover crops), including short-lived pioneer species, to achieve the intended revegetation outcome.	Yes	. WHC-STD-ENV-Seed Selection/Fertiliser Protocol. 3. QA on the seed quality ands type prior to planting. 4. Trialling seed of local provincence.	1. Quality assurance process. 2. Records of seed mix and output.	Satisfactory	Environment	2 Minor	D - Unlikely	**L4**
42				Unsuitable/lack of initial measures adopted (e.g. watering) to promote vegetative establishment and growth.	Yes	1. Inspections and monitoring are completed 2. Watering of tube stock when required.	1. Water use records when used in rehabilitation. 2. Rehabilitation inspections and monitoring.	Satisfactory	Financial	2 Minor	D - Unlikely	**L4**
43				Poor quality tubestock.	Yes	1. Regular seed contractor. 2. Defined seed mix and weed management. Seed of provenence. 3. Mostly seeding, not tubestocking used.	1. Quality assurance process. 2. Records of seed mix and output. 3. Rehabilitation monitoring.	Satisfactory	Environment	2 Minor	D - Unlikely	**L4**
44				Less than adequate environmental and rehabilitation monitoring.	Yes	1. Existing environmental and rehabilitation monitoring program. Regular review. Actions based on the monitoring.	1. Quality assurance process. 2. Records of seed mix and output. 3. Rehabilitation monitoring.	Satisfactory	Environment	1 Insignificant	D - Unlikely	**L2**
45		MD 1 - Infrastructure MD 4 - Overburden		Lack of maintenance or re-reeding of failed areas.	Yes	1. Use of fertiliser in rehabilitation areas unless advised otherwise. 2. Use of mulch(from clearing) and other ameliorants. Mulhcx is mixed through with topsoil. 3. Monitoring program. 4. WHC-STD-ENV-Seed Selection/Fertiliser Protocol. 5. Re - seeding and fixing of erosion issues based on monitoring.	1. Quality assurance process for rehabilitation. 2. Rehabilitation monitoring. 3. Records of mulch, fertiliser and ameliorants.	Satisfactory	Environment	2 Minor	D - Unlikely	**L4**

46	Ecosystem and Land Use Development Phase	Emplacement MD 5 - Active Mining MD 8 - Other (Stockpiled Area) Existing Rehabilitation Areas	6.2.6. Ecosystem and land use development	Long term water quality and quantity issues (e.g. acid-drainage, high salinity).	Yes	1. Water monitoring and soil testing program. 2. Groundwater model. BTM complex model. 3. Ongoing review of long-term surface water and groundwater risks through monitoring, modelling and closure planning processes. 4. Further groundwater investigations, modelling and updated risk assessments to be undertaken through the 2026 Final Void and Mine Closure Plan process, including consideration of residual risks to water sources, long-term water quality and relevant requirements of the NSW Aquifer Interference Policy	1. Results for soil and water testing. 2. Rehabilitation monitoring.	Satisfactory	Environment	3 Medium	D - Unlikely	M6
47				Limited vegetation structural development and habitat for targeted fauna species meaning the site does not meet some completion criteria.	Yes	1. Inspections and monitoring. 2. Incorporation of logs and rocks during earlier phases of rehabilitation. 3. Use of nest boxes in the future. Use of stag trees in future rehabilitation.	1. Quality assurance process 2. Rehabilitation monitoring.	Satisfactory	Environment	3 Medium	C - Possible	M9

Appendix B: Consultation for RMP

RMP CONSULTATION INCLUDING DETAILED RESPONSES

The following table summarises the feedback provided by NSW Department of Planning and Environment (DPE) – Water on 26 July 2022 in response to the MCCM Rehabilitation Management Plan (2022).

Item	NSW DPE Water Recommendation	Response/Where Addressed
	The Rehabilitation Management Plan is recommended to be reviewed to achieve the following outcomes. These are intended to meet the department's legislative, policy and water management requirements.	
1	Sharing of water must protect the water source, its dependent ecosystems and basic landholder rights.	Addressed in Maules Creek Coal Project 2011 Environmental Assessment (EA) Chapters 7.10 and 7.11.
2	Water sources, floodplains and dependent ecosystems are protected and restored.	Addressed in Maules Creek Coal Project 2011 Environmental Assessment (EA) Chapters 7.10 and 7.11; and RMP Sections 6.2.1.10, 6.2.3.5 and 6.2.5.
3	Activities within a water source should avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, and where possible land should be rehabilitated.	Addressed in RMP Section 6. Erosion, sediment control and potential contamination impacts are managed by the management plans. Rehabilitation will be completed in accordance with the Rehabilitation Objectives which are approved by RR.
4	The final Rehabilitation Management Plan is made electronically available on a public accessible website.	RMP is made available on Maules Creek Mine page on the Whitehaven Coal website.
5	A conceptual model/diagram clearly presents how the groundwater and surface water systems interact with the final landform. This is to be informed by recent environmental assessments/modelling reviews.	Addressed in the Maules Creek Coal Project 2011 EA, Chapters 7.10.3 and 7.11.3. A final void groundwater model and water balance assessment is planned to be completed as part of the post closure phase. The RMP will be updated as environmental assessments/modelling reviews are completed, including those for the Final Void and Mine Closure Plan due to be finalised in 2026.
6	The final design and location of surface drainage features achieves a stable landform and maintains or improves riparian corridor functioning. This is to be completed with reference to industry guidelines such as: "*Rehabilitation Manual for Australian Streams* (LWRRDC 2000)", "*Guideline: Works that interfere with water in a watercourse for a resource activity* (DNRME 2019)" and "*Guidelines for Controlled Activities on Waterfront Land* (2012)" or their latest versions.	Addressed in RMP Section 6.2.3.
7	Dirty runoff catchment areas are rehabilitated and the conveyance of clean surface runoff downstream is maximised.	Addressed in RMP Section.2. Surface runoff is managed by the erosion and sediment controls outlined in Section 6.2.1.10. Rehabilitation will be completed in accordance with the Rehabilitation Objectives which are approved by RR.

Item	NSW DPE Water Recommendation	Response/Where Addressed
8	Decommissioning of groundwater boreholes is in accordance with the "Minimum Construction Requirements for Water Bores in Australia (2020)".	Addressed in RMP Section 6.2.2.
9	Ongoing water take by the final landform via interception, storage or diversion is quantified and complies with relevant approvals and licences under the *Water Management Act 2000* or a relevant exemption. Please note exemptions from the requirement to hold approvals under s.90 and 91 of the *Water Management Act 2000* for approved SSD/SSI projects will not apply once the project approval ceases. Therefore, any relevant water management works that are to be retained will need to obtain an approval prior to the development consent lapsing.	Addressed in RMP Section 5 and Section 6.2.3.4.
10	Aquifer interference activities are designed to minimise ongoing water take and water quality impacts and meet the requirements of the NSW Aquifer Interference Policy.	Addressed in RMP Section 6.2.3.4 and Maules Creek Coal Project 2011 EA Chapters 7.10.2 and 7.10.3.
11	Residual risk to water sources is clearly understood and minimised. This is to include relevant assessment documentation and updated risk assessments to meet the requirements of the NSW Aquifer Interference Policy. Further detail can be found in Fact Sheet 5 in Appendix C of the "*Guidelines for Groundwater Documentation for SSD/SSI Projects. Technical guideline* (DPE 2022)".	Addressed in RMP Section 3. This RMP will be updated as required as further investigations, studies, and assessments are completed.
12	A monitoring and review program is included to ensure the rehabilitation outcomes are met.	Addressed in RMP Section 8.

The following table summarises the feedback provided by NSW Department of Planning and Environment (DPE) – Biodiversity, Conservation and Science on 16 August 2022, in response to the MCCM Rehabilitation Management Plan (2022).

Item	NSW DPE Water Recommendation	Response/Where Addressed
	BCS has reviewed the revised RMP and, other than noting several minor editing errors, has no specific comments to make on the plan.	
1	The legend of Figure 1A states "*Entire site sits within Lithgow City Council Local Government Area and Hawkesbury Catchment Area*".	Updated in 2023 RMP: Section 1.3 The legend of Figure 1A states "*Entire site sits within Narrabri Shire Council Local Government Area and Namoi Catchment Area*".
2	The fourth dot point in Section 6.2.3.2 appears to be incomplete,	Updated in 2023 RMP: Section 6.2.3.2 "*Rehabilitated infrastructure areas that are generally flat.*"

The following table summarises the feedback provided by Forestry Corporation of NSW on 23 August 2022 in response to the MCCM Rehabilitation Management Plan (2022).

Item	Forestry Corporation of NSW Recommendation	Response/Where Addressed
	The Forestry Corporation of NSW has provided comments on the 2022 Maules Creek Coal rehabilitation management plan.	
1	(Section 1.3) Has it been decided who will manage the Eastern (Wollandilly, Oakleigh/Onavale) and Western (Velyama) offset areas at end of mine life? FCNSW may be interested where lots share a boundary with State forest. FCNSW invite Whitehaven to hold discussions.	Addressed in RMP: Section 1.3 and Figure 1 A.
2	(Table 7) FCNSW supports nest box installation where it is backed by an end of mine life strategy. If Whitehaven propose to install nestboxes on State forest, it must be accompanied by a commitment to maintain the nestboxes during and post life of mine (i.e. dismantling, monitoring and removal of ferals). Without ongoing management, nestboxes can become liabilities to the landholder and this is not in FCNSWs interest.	Maintenance of nest boxes at end of mine life not addressed in RMP. Section 10 discusses ongoing monitoring of rehabilitated site but does not address an end of mine life strategy for nest boxes.
3	(Table 9) What are the details of piezometers proposed to remain on State forest post life of mine? Where are they proposed? Who will manage their operation and plug and abandonment post mining? What are Whitehaven's expectations of the landholder?	Not addressed in RMP. Table 9 discusses criteria and validation for removal of piezometers. Table 3 includes regulatory requirements for decommissioning groundwater piezometers but refers to Section 6.2 which doesn't refer to them specifically.
4	(Table 9) Over what area is *average overall slope of 10 degrees* measured? 6.2.3.2 says maximum overall slope of 10 degrees. These are conflicting statements. Slopes greater than 20 degrees are considered too steep to maintain commercially and are therefore not in the best interest of FCNSW. What areas and what is the estimated number of hectares proposed to be greater than 10 degrees?	Slopes specified in Section 6.2.3.2: *Steeper slopes, which would be limited to 1V:3H (vertical to horizontal slope) with an average overall slope of 1V:5H targeted, occur towards the landform top surface, with slopes becoming flatter downslope.*
5	(Section 6.2.1.4) What drainage structures are proposed to remain on State forest at end of mine life (location, type etc)? Who will be responsible for managing these structures? Is Whitehaven proposing that the landholder inherit this responsibility? If so, who pays for these costs and who is responsible for unplanned erosion, sedimentation events?	FLRP included in Section 5 and post mining drainage structure considerations included in Section 9.2. Final drainage structure design and management will be considered in the final FVMCP as discussed in Section 6.2.1.4 and Section 3.

6	(Section 6.2.2.1) Who will be responsible for the warning signs and exclusion fence adjacent to the final void at end of mine life? The fence and signage will need maintenance in perpetuity. Are there records of discussions between the landholder, Resources Regulator and Whitehaven to determine liabilities attributed to the final void? When was the final void location that is shown in this rehabilitation plan decided? Has the proposed location moved since 2014?	Not addressed in RMP. Section 6.2.2.1 discusses site security including fencing and signage and references FVMCP. Section 6.2.6 discusses ongoing monitoring of the site but does not assign responsibility. History of site operations discussed in Section 1.1.
7	(Section 6.2.3.4) Is the final void location on State forest? Have options been explored to change the tenure to reduce accessibility by the public and the risk/costs this presents to public land managers?	Site Land Use illustrated in Figure 1 A. Section 6.2.3.4 discuss preparation of the Final Void and Mine Closure Plan which will cover details around risks.

Feedback from Narrabri Shire Council on 29 August 2022 and the NSW Resources Regulator on 5 August 2022 in response to the MCCM Rehabilitation Management Plan (2022) required no response.

DPE Water, DPE Biodiversity, Conservation and Science, Narrabri Shire Council and the NSW Resources Regulator will be forwarded a copy of the updated RMP for their review.

Appendix C: Mining Amendment (Standard Conditions of Mining Leases – Rehabilitation) Regulation 2021

Standard Conditions under Mining Regulation 2016, Schedule 8A, Part 2.	
Condition Number	Condition
Division 1 – Protection of the Environment and Rehabilitation	
4	Must prevent or minimise harm to environment (1) The holder of a mining lease must take all reasonable measures to prevent, or if that is not reasonably practicable, to minimise, harm to the environment caused by activities under the mining lease. (2) In this clause-- "harm" to the environment has the same meaning as in the Protection of the Environment Operations Act 1997.
5	Rehabilitation to occur as soon as reasonably practicable after disturbance The holder of a mining lease must rehabilitate land and water in the mining area that is disturbed by activities under the mining lease as soon as reasonably practicable after the disturbance occurs.
6	Rehabilitation must achieve final land use (1) The holder of a mining lease must ensure that rehabilitation of the mining area achieves the final land use for the mining area. (2) The holder of the mining lease must ensure any planning approval has been obtained that is necessary to enable the holder to comply with subclause (1). (3) The holder of the mining lease must identify and record any reasonably foreseeable hazard that presents a risk to the holder's ability to comply with subclause (1). Note--: Clause 7 requires a rehabilitation risk assessment to be conducted whenever a hazard is identified under this subclause. (4) In this clause-- "final land use" for the mining area means the final landform and land uses to be achieved for the mining area— (a) as set out in the rehabilitation objectives statement and rehabilitation completion criteria statement, and (b) for a large mine--as spatially depicted in the final landform and rehabilitation plan, and (c) if the final land use for the mining area is required by a condition of development consent for activities under the mining lease--as stated in the condition. "planning approval" means— (a) a development consent within the meaning of the Environmental Planning

	and Assessment Act 1979 , or (b) an approval under that Act, Division 5.1
Division 2 – Risk Assessment	
7	Rehabilitation risk assessment (1) The holder of a mining lease must conduct a risk assessment (a "rehabilitation risk assessment") that— (a) identifies, assesses and evaluates the risks that need to be addressed to achieve the following in relation to the mining lease— (i) the rehabilitation objectives, (ii) the rehabilitation completion criteria, (iii) for large mines--the final land use as spatially depicted in the final landform and rehabilitation plan, and (b) identifies the measures that need to be implemented to eliminate, minimise or mitigate the risks. (2) The holder of the mining lease must implement the measures identified. (3) The holder of a mining lease must conduct a rehabilitation risk assessment— (a) for a large mine--before preparing a rehabilitation management plan, and (b) for a small mine--before preparing the rehabilitation outcome documents for the mine, and (c) whenever a hazard is identified under clause 6(3) --as soon as reasonably practicable after it is identified, and (d) whenever given a written direction to do so by the Secretary.
Division 3 Rehabilitation Documents	
8	Application of Division This Division does not apply to a mining lease unless— (a) the security deposit required under the mining lease is greater than the minimum deposit prescribed under the Act, section 261BF in relation to that type of mining lease, or (b) the Secretary gives a written direction to the holder of the mining lease that this Division, or a provision of this Division, applies to the mining lease.
9	General requirements for documents A document required to be prepared under this Division must— (a) be in a form approved by the Secretary and Note--: The approved forms are available on the Department's website.

	(b) include any matter required to be included by the form, and (c) if required to be given to the Secretary--be given in a way approved by the Secretary.
10	Rehabilitation management plans for large mines (1) The holder of a mining lease relating to a large mine must prepare a plan (a "rehabilitation management plan") for the mining lease that includes the following— (a) a description of how the holder proposes to manage all aspects of the rehabilitation of the mining area, (b) a description of the steps and actions the holder proposes to take to comply with the conditions of the mining lease that relate to rehabilitation, (c) a summary of rehabilitation risk assessments conducted by the holder, (d) the risk control measures identified in the rehabilitation risk assessments, (e) the rehabilitation outcome documents for the mining lease, (f) a statement of the performance outcomes for the matters addressed by the rehabilitation outcome documents and the ways in which those outcomes are to be measured and monitored. (2) If a rehabilitation outcome document has not been approved by the Secretary, the holder of the mining lease must include a proposed version of the document. (3) A rehabilitation management plan is not required to be given to the Secretary for approval. (4) The holder of the mining lease— (a) must implement the matters set out in the rehabilitation management plan, and (b) if the forward program specifies timeframes for the implementation of the matters--must implement the matters within those timeframes.
11	Amendment of rehabilitation management plans The holder of a mining lease must amend the rehabilitation management plan for the mining lease as follows— (a) to substitute the proposed version of a rehabilitation outcome document with the version approved by the Secretary--within 30 days after the document is approved, (b) as a consequence of an amendment made under clause 14 to a rehabilitation outcome document--within 30 days after the amendment is made, (c) to reflect any changes to the risk control measures in the prepared plan that are identified in a rehabilitation risk assessment--as soon as practicable after the

	rehabilitation risk assessment is conducted, (d) whenever given a written direction to do so by the Secretary--in accordance with the direction.
12	Rehabilitation outcome documents (1) The holder of a mining lease must prepare the following documents (the "rehabilitation outcome documents") for the mining lease and give them to the Secretary for approval— (a) the "rehabilitation objectives statement", which sets out the rehabilitation objectives required to achieve the final land use for the mining area, (b) the "rehabilitation completion criteria statement", which sets out criteria, the completion of which will demonstrate the achievement of the rehabilitation objectives, (c) for a large mine, the "final landform and rehabilitation plan", showing a spatial depiction of the final land use. (2) If the final land use for the mining area is required by a condition of development consent for activities under the mining lease, the holder of the mining lease must ensure the rehabilitation outcome documents are consistent with that condition.
13	Forward program and annual rehabilitation report (1) The holder of a mining lease must prepare a program (a "forward program") for the mining lease that includes the following— (a) a schedule of mining activities for the mining area for the next 3 years, (b) a summary of the spatial progression of rehabilitation through its various phases for the next 3 years, (c) a requirement that the rehabilitation of land and water disturbed by mining activities under the mining lease must occur as soon as reasonably practicable after the disturbance occurs. (2) The holder of a mining lease must prepare a report (an "annual rehabilitation report") for the mining lease that includes— (a) a description of the rehabilitation undertaken over the annual reporting period, (b) a report demonstrating the progress made through the phases of rehabilitation provided for in the forward program applying to the reporting period, (c) a report demonstrating progress made towards the achievement of the following— (i) the objectives set out in the rehabilitation objectives statement, (ii) the criteria set out in the rehabilitation completion criteria statement, (iii) for large mines--the final land use as spatially depicted in the final landform

	and rehabilitation plan. (3) If a rehabilitation outcome document has not been approved by the Secretary, the holder of the mining lease must rely on a proposed version of the document. (4) The holder of the mining lease must give the forward program and annual rehabilitation report to the Secretary. (5) In this clause-- "annual reporting period" means each period of 12 months commencing on— (a) the date on which the mining lease is granted, or (b) if the Secretary approves another date in relation to the mining lease--the other date.
14	Amendment of rehabilitation outcome documents and forward program (1) This clause applies to— (a) a rehabilitation outcome document if it has been approved by the Secretary, and (b) a forward program if it has been given to the Secretary. (2) The holder of a mining lease must not amend a document to which this clause applies that relates to the mining lease unless— (a) the Secretary gives the holder a written direction to do so, or (b) the Secretary, on written application by the holder, gives a written approval of the amendment. (3) The holder of the mining lease must amend the document in accordance with the Secretary's direction or approval. (4) Nothing in this clause prevents the holder of a mining lease preparing a draft amendment for submission to the Secretary for approval.
15	Times at which documents must be prepared and given (1) The holder of a mining lease must do the following before the end of the initial period— (a) prepare a rehabilitation management plan, and (b) prepare rehabilitation outcome documents and give them, other than the rehabilitation completion criteria statement, to the Secretary for approval, and (c) prepare a forward program and give it to the Secretary. (2) The holder of the mining lease must prepare a forward program and annual rehabilitation report and give them to the Secretary before— (a) 60 days after the last day of each annual reporting period, commencing with the annual reporting period in which the forward program was given to Secretary

	under subclause (1)(c), or (b) a later date approved by the Secretary. (3) A rehabilitation completion criteria statement relating to completion of rehabilitation during a period covered by a forward program must be given to the Secretary for approval when the forward program is required to be given to the Secretary. (4) The holder of the mining lease must prepare updated rehabilitation outcome documents for the mining lease and give them to the Secretary for approval before— (a) 60 days after a development consent is modified following an application referred to in clause 20(1)(b), or (b) a later date approved by the Secretary. (5) A rehabilitation completion criteria statement is not required to be given to the Secretary under subclause (4) unless a rehabilitation completion criteria statement has already been given to the Secretary under subclause (3). (6) The Secretary may, by written notice, direct the holder of a mining lease to prepare, or give to the Secretary, a document required to be prepared under this Division at a time other than that specified in this clause. (7) The holder of the mining lease must comply with the direction. (8) In this clause-- "initial period" means the period commencing when the mining lease is granted and ending— (a) 30 days, or other period approved by the Secretary, after this Division first applies to the mining lease, or (b) if this Division applies to the mining lease because of an increase in the required security deposit— (i) when the surface of the mining area is disturbed by activities under the mining lease, or (ii) at a later date approved by the Secretary.
16	Certain documents to be publicly available (1) This clause applies to the following documents— (a) a rehabilitation management plan, (b) a forward program, (c) an annual rehabilitation report. (2) The holder of a mining lease must make a document to which this clause applies publicly available by—

	(a) publishing it on its website in a prominent position, or (b) if the holder does not have a website-- providing a copy of it to a person— (i) on the written request of a person, and (ii) without charge, and (iii) within 14 days after the request is received. (3) If a document is published on the website of the holder of the mining lease, the holder must ensure that it is published— (a) for a rehabilitation management plan--within 14 days after it is prepared or amended, or (b) for a forward program or an annual rehabilitation report--within 14 days after it is given to the Secretary or amended, (4) Personal information within the meaning of the Privacy and Personal Information Protection Act 1998 is not required to be included in a document made available to a person under this clause.
Division 4 – Records, Reporting and Notifications	
17	Records demonstrating compliance The holder of a mining lease must create and maintain records of all actions taken that demonstrate compliance with each of the conditions set out in this Part. Note--: The Act, sections 163D and 163E provide for the form in which records must be kept and the period for which they must be retained
18	Report on non-compliance (1) The holder of a mining lease must provide the Minister with a written report detailing any non-compliance with— (a) a condition of the mining lease, or Note--: The Act, section 364A contains provisions relating to the use and disclosure of information provided under this condition. (b) a requirement of the Act or this Regulation relating to activities under the mining lease. (2) The holder of the mining lease must provide the report within 7 days after becoming aware of the non-compliance. (3) The holder of the mining lease must ensure the report— (a) identifies the condition of the mining lease, or the requirement of the Act or this Regulation, to which the non-compliance relates, and (b) describes the non-compliance and specifies the date or dates on which, or the period during which, the non-compliance occurred, and

	(c) describes the causes or likely causes of the non-compliance, and (d) describes the action that has been taken, or will be taken, to mitigate the effects, and to prevent any recurrence, of the non-compliance.
19	Nominated contact person (1) The holder of a mining lease must nominate a natural person to be the contact person with whom the Secretary can communicate in relation to the mining lease for the purposes of the Act. Note--: The Act, section 383 sets out the ways in which notices or other documents may be issued or given to, or served on, a person for the purposes of the Act. (2) The holder of the mining lease must give written notice to the Secretary of— (a) the full name and contact details of the nominated person--within 28 days after the date on which the standard conditions apply to the mining lease under clause 31A of this Regulation, and (b) any change in nomination or in the nominated person's contact details--within 28 days after the change occurs. (3) The holder of the mining lease must ensure that the contact details for the nominated person include the person's phone number and postal and email addresses.
Division 5 – Applications relating to development consent	
20	Additional requirements--application for or to modify development consent (1) The holder of a mining lease must give written notice to the Secretary within 10 days after— (a) making an application for development consent that relates to the mining area, or (b) making an application for modification of a development consent— (i) under the Environmental Planning and Assessment Act 1979, section 4.55(2), and (ii) that proposes to modify a condition of the consent that relates to rehabilitation of the mining area in a way that may affect an obligation under the mining lease relating to rehabilitation of the mining area. (2) This clause does not apply if the development is State significant development.