WILPINJONG COAL MINE

REHABILITATION MANAGEMENT PLAN

PREPARED BY
WILPINJONG COAL PTY LIMITED

October 2025

Summary Table	
a. Name of mine:	Wilpinjong Coal Pty Limited
b. Rehabilitation management plan commencement date:	July 2022
c. Rehabilitation management plan revision dates and version numbers:	01 July 2022 (Version 1) 28 June 2023 (Version 2) 24 September 2025 (Version 3)
d. Mining Leases:	ML1573 (Expiry date 07 February 2027) ML1779 (Expiry date 20 December 2039) ML1795 (Expiry date 27 September 2040) ML1846 (Expiry date 28 February 2044)
e. Name of lease holder(s):	Wilpinjong Coal Pty Limited
f. **Date of submission:**	October 2025

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1.0 Introduction

This Rehabilitation Management Plan (RMP) has been prepared by Wilpinjong Coal Pty Limited (WCPL) in accordance with the NSW Resources Regulator (NSW RR) *Form and Way-Rehabilitation Management Plan for Large Mines* (NSW RR, July 2021). This RMP has been developed to satisfy the requirements of Condition 64, Schedule 3 of Development Consent (SSD-6764). The development of a Rehabilitation Management Plan (RMP) also satisfies the requirements of Mining Leases (ML) ML1573, ML 1779, ML1795 and ML1846.

Previously the WCPL Mining Operations Plan (MOP) 2021-2022 documented the rehabilitation requirements until the expiry of the transitional period on 2 July 2022, at which point the MOP was superseded by this RMP, supported by the Annual Rehabilitation Report and Forward Program (ARRFP).

The RMP has also been developed to build upon several other existing management plans (where applicable) as required by Development Consent (SSD-6764), including the Biodiversity Management Plan (BMP), Water Management Plan (WMP), including the Surface Water Management Program (SWMP) and the Groundwater Management Plan (GWMP) and Environmental Management Strategy (EMS).

1.1 History of Operations

The Wilpinjong Coal Mine (the Mine) is owned by WCPL, a wholly owned subsidiary of Peabody Australia Pty Ltd (Peabody). The Mine is an existing open cut coal mining operation situated approximately 40 kilometres (km) north-east of Mudgee, near the Village of Wollar, within the Mid-Western Regional Local Government Area, in central New South Wales (NSW) (**Figure 1**).

On 24 April 2017, WCPL was granted Development Consent (SSD-6764)[1] for the Wilpinjong Extension Project (WEP) that provides for the continued operation of the Mine at rates of up to 16 million tonnes per annum (Mtpa) of run-of-mine (ROM) out to 2033, and access to approximately 800 hectares (ha) of open cut extensions. A summary of the Mine's approved operations is provided in **Table 1**.

The Mine produces thermal coal products which are transported by rail to domestic customers for use in electricity generation and to port for export. Open cut mining, coal handling operations and associated mobile equipment movements are undertaken 24 hours per day, seven days per week. The Mine also undertakes exploration and prospecting activities across WCPL's exploration licence and mining lease areas for the purposes of geological, geotechnical and hydrogeological investigations. Open cut mining occurs within Open Cut Pits 1, 2, 3, 4, 5, 6, 7 and 8.

Mine waste rock emplacements have been progressively re-shaped behind the active mining block to construct landforms generally consistent with the pre-mining landform surface. Other Project components including areas of tailings emplacements have also been progressively rehabilitated as the area has become available. Revegetation of completed landforms has been progressively undertaken since 2008 and has included establishing both woodland and grassland vegetation communities, consistent with the Project's rehabilitation objectives and post-mining land use. As of December 2024, approximately 1097ha of completed landforms[2] have been rehabilitated.

Prior to the WEP approval, the majority of the Mine's facilities were constructed under the now surrendered Project Approval (PA 05-0021), including the office administration complex, ROM pad, Coal Handling and Preparation Plant (CHPP) rail spur, rail loop and rail loading infrastructure, water treatment facility (WTF), workshop, tailings filter press, lime silo at the CHPP and visual bunds. Other completed development and construction activities associated with the approved WEP to support mining included extension of the Ulan-Wollar Road relocations and rail crossings, extension and

[1] The Mine originally operated under Project Approval (PA 05-0021) that was granted on 1 February 2006. PA05-0021 was surrendered on the 28 April 2020 as required by Condition 9, Schedule 2 of SSD-6764

[2] Of the historical completed landforms to date that are currently under pasture or considered not woodland, these landforms will be progressively upgraded with relevant woodland species to meet the biometric vegetation types (BVT) requirements.

relocation of local electrical transmission lines (ETLs) and 330kV ETL, extension of Pit 3 and development of Pit 8, development of satellite mine infrastructure areas and ROM pads.

1.2 Current Development Consents, Leases and Licences

WCPL operate under Development Consent (SSD-6764). **Table 2** provides a summary of the other approvals, leases and licences that the Mine operates under.

Table 1 Mine Approvals, Leases and Licences

Approval	Name of Approval	Approval Date	Expiry Date
SSD-6764 (as modified)	Project Approval	24 April 2017	24 April 2033
ML1573	Mining Lease (ML)	08 February 2006	08 February 2027
ML1779	Mining Lease (ML)	20 December 2018	20 December 2039
ML1795	Mining Lease (ML)	27 September 2019	27 September 2040
ML1846	Mining Lease (ML)	28 February 2023	28 February 2044
EL6169	Exploration Licence (EL)	22 December 2003	28 November 2027
EL7091	Exploration Licence (EL)	03 March 2008	03 March 2028
EL9399	Exploration Licence (EL)	03 May 2022	03 May 2028
Notification Areas A & B	Dam Safety	Approved 24 January 2014	N/A
EPL 12425	Environmental Protection Licence (EPL)	02 March 2021	N/A
Radiation Licence	Licence No. 5061384	02 January 2024	02 January 2026
Explosives Licence	Licence No. XSTR200024	24 March 2018	24 March 2028
Water Licences	Various (Refer to Water Licence Summary in Groundwater Management Plan)		
EPBC	EPBC Act Approval	08 August 2017	31 December 2033

Note: Copies of the Development Consent (SSD-6764), EPL 12425, ML 1573, ML1779, ML1795 and ML1846 are available on the Peabody Energy website (http://www.peabodyenergy.com).

Table 2 Summary of Approved Operations

Component	Approved Wilpinjong Coal Mine
Mining Method	• Open cut mining operation extracting ROM coal.
Open Cut Extent	• Eight contiguous open cut pits and associated contained infrastructure area comprising approximately 2,790 hectares.
ROM Coal Production Rate	• Up to 16 Mtpa of ROM coal.
Waste Rock Management	• Waste rock deposited predominantly within mined-out voids. • Elevated waste emplacement area (Pit 2).
Annual Waste Rock Production	• Annual waste rock production of approximately 43 million bank cubic metres.
Coal Washing	• Beneficiation of ROM coal in the CHPP. • Facilities for the handling and stockpiling of both washed and unwashed (bypass) coal.
Product Coal	• Approximately 13 Mtpa of thermal product coal for domestic electricity generation and export, capped at maximum rail limits.
Coal Rejects (tailings and coarse rejects)	• Coal rejects placed predominantly within mine voids. • Tailings filter press to allow co-disposal of the tailings with coarse rejects
Water Supply	• Make-up water demand to be met from runoff recovered from mine operational areas, recovery from tailings disposal areas, open cut dewatering, advanced dewatering of pit areas and supply from a borefield (if required). • Recovery of water from tailings via tailings filter press.
Water Disposal	• Mine water treated in a Water Treatment Facility (WTF) and discharged to Wilpinjong Creek in accordance with Environment Protection Licence (EPL) 12425.
Project Life	• 28 years (from the date of grant of a Mining Lease 1573).
Product Coal Transport	• An average of six and a maximum of 10 laden trains per day leaving the mine. • Transport via the Sandy Hollow-Gulgong Railway.
Hours of Operation	• Open cut mining, handling and processing of ROM coal at the CHPP and train loading at the Wilpinjong Coal Mine is currently undertaken 24 hours per day, seven days per week.

1.3 Land Ownership and Land Use

WCPL owns the majority of land in and surrounding the Mine area. Land use and land ownership for properties within and surrounding the Mine area are shown in **Figure 2** and **Figure 3**. **Figure 4** and **Figure 5** show vegetation and heritage and contours and catchments respectively. WCPL-owned lands not subject to mining are mainly used for stock grazing through leases or agistment. Isolated lots of Crown Land and Crown Roads occur within the Mine area. **Appendix A** provides the land ownership table relevant to WCPL's Project Boundary.

The main infrastructure area is contained centrally within the mining operations area with satellite infrastructure located to the east and west of the operation. Only mobile infrastructure (e.g. environmental monitoring equipment and water management infrastructure) is located outside of the central mining operations and satellite areas.

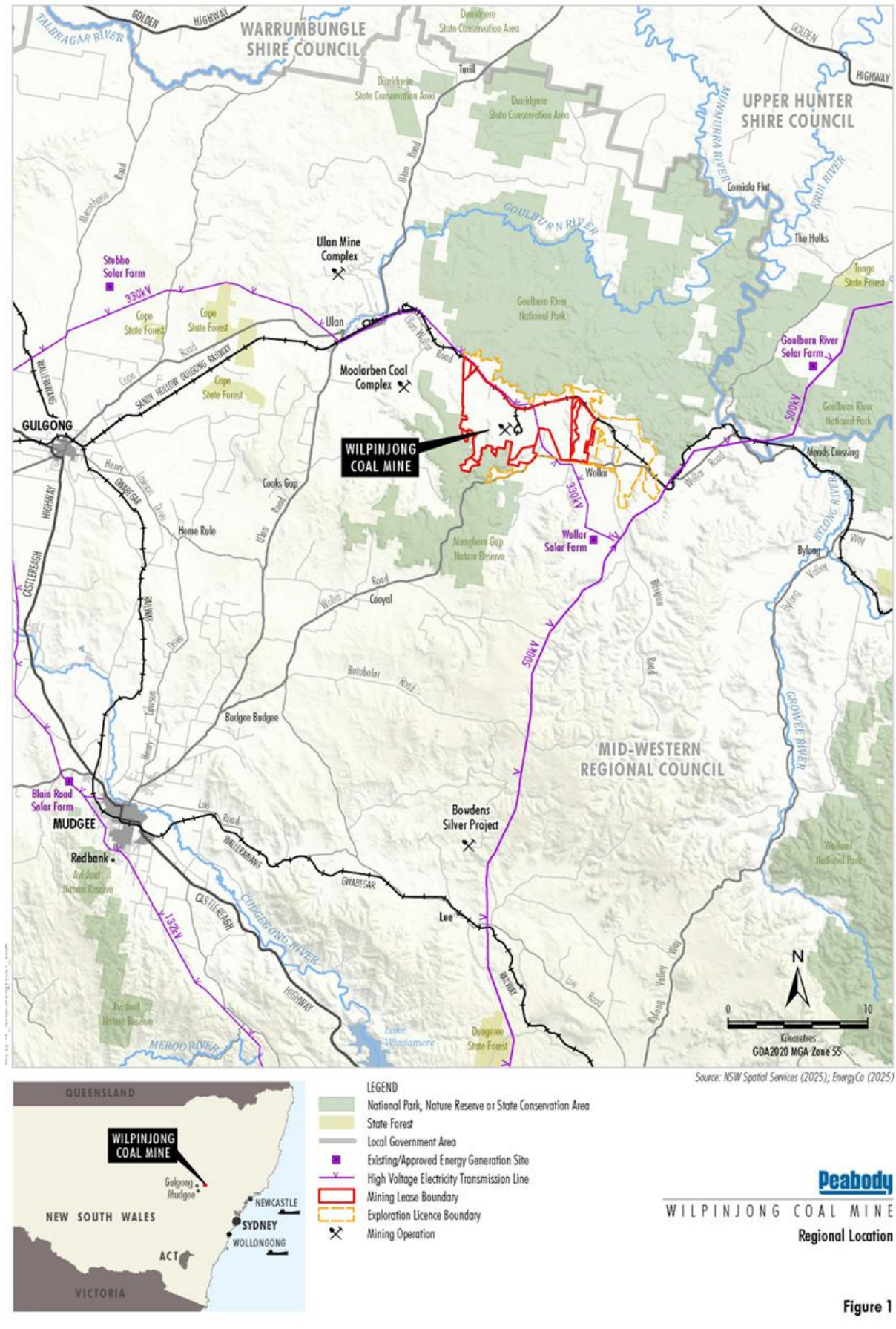
A substantial buffer of WCPL owned land and Crown Land occurs to the south and east of the Mine. To the west of the Mine, the land is largely owned by WCPL and by Moolarben Coal Complex. The Moolarben Coal Complex and WCPL share the western boundary along Pit 6.

In accordance with Condition 61(a), Schedule 3 of Development Consent (SSD-6764) WCPL continues to consult with Moolarben Coal Operations Pty Ltd (MCO) to investigate potential options to integrate the Wilpinjong Coal Mine and Moolarben Coal Complex final landforms. Further west and adjacent to the Moolarben Coal Complex is the Ulan Coal Complex operated by Ulan Coal Mines Pty Limited (UCMPL) (**Figure 1**).

Large areas of the National Parks Estate occur to the north (i.e. Goulburn River National Park) and south-east (i.e. Munghorn Gap Nature Reserve) of the Mine (**Figure 2**). Some Council owned roads and Crown Land roads remain open within the ML despite applications to close these roads having been submitted.

Consultation with Mid-Western Regional Council (MWRC) and Department of Primary Industries – Lands is ongoing regarding the applications to close these roads. This process is expected to be finalised during 2023. The nearest private receivers (i.e., residents within the Wollar Village) are situated approximately 1.5 km from mining operations (**Figure 3**).

Figure 1 Project Locality



Source: NSW Spatial Services (2025); EnergyCo (2025)

Figure 2 Land Use Environment

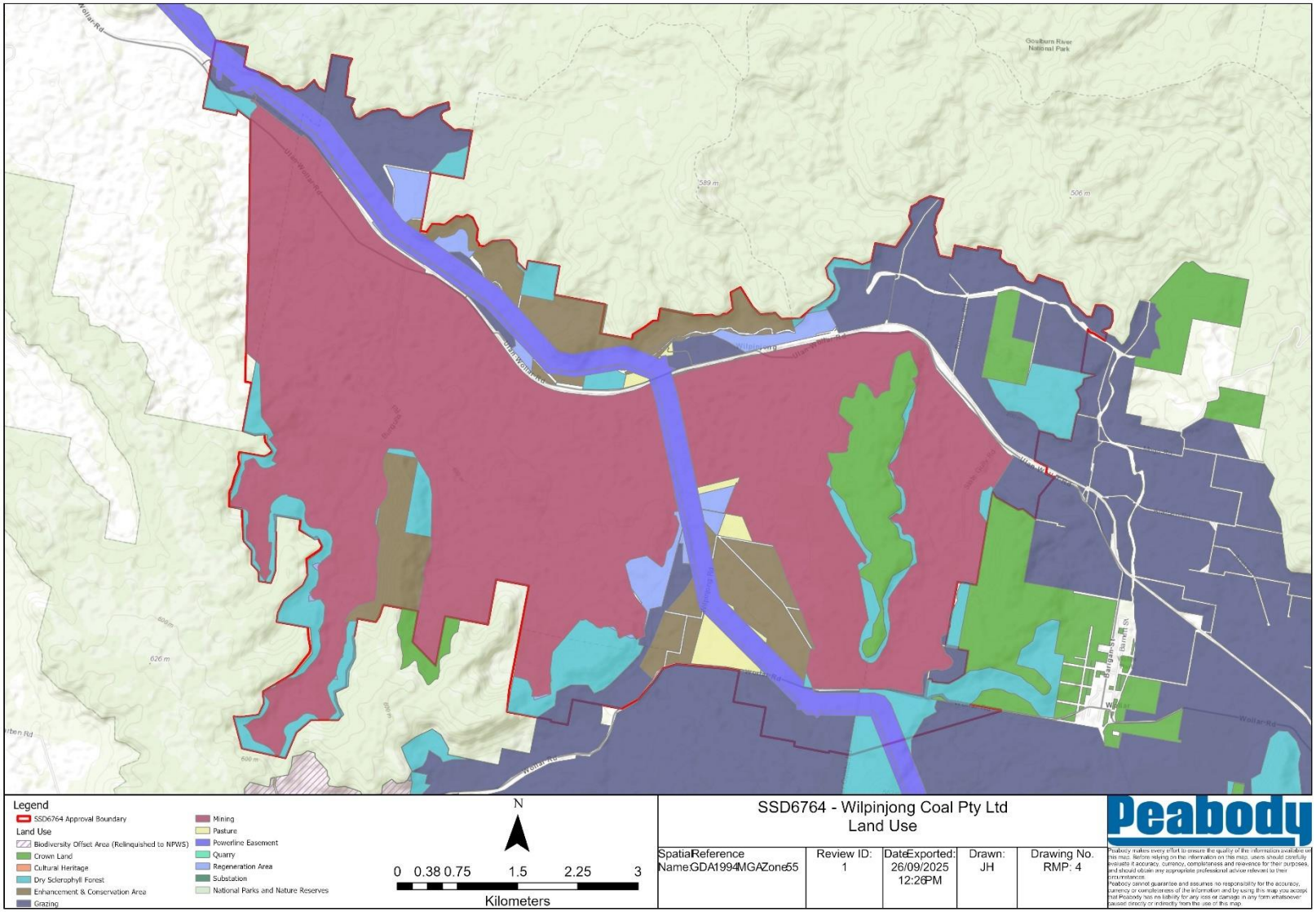


Figure 3 Land Ownership

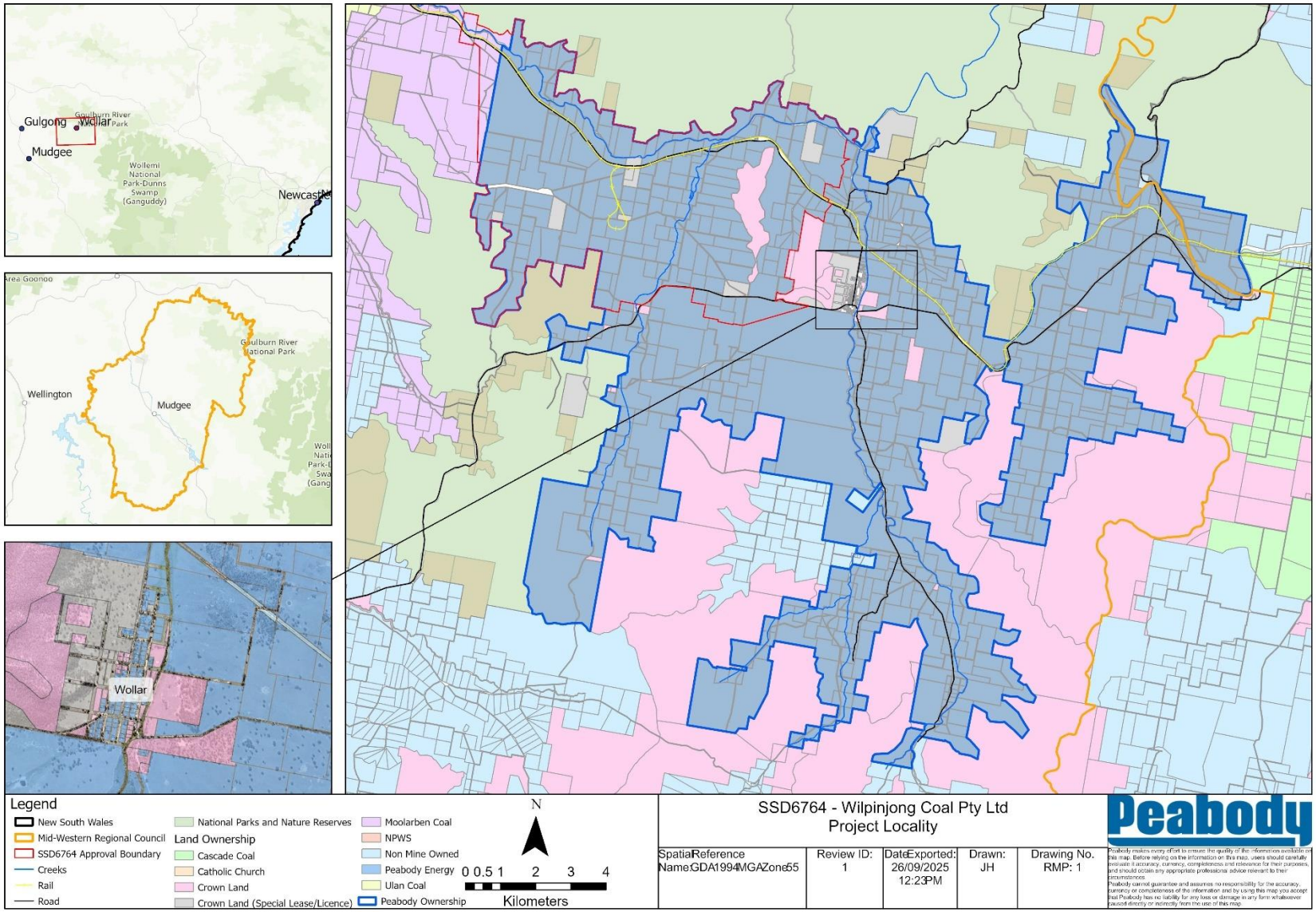


Figure 4 Vegetation and Heritage

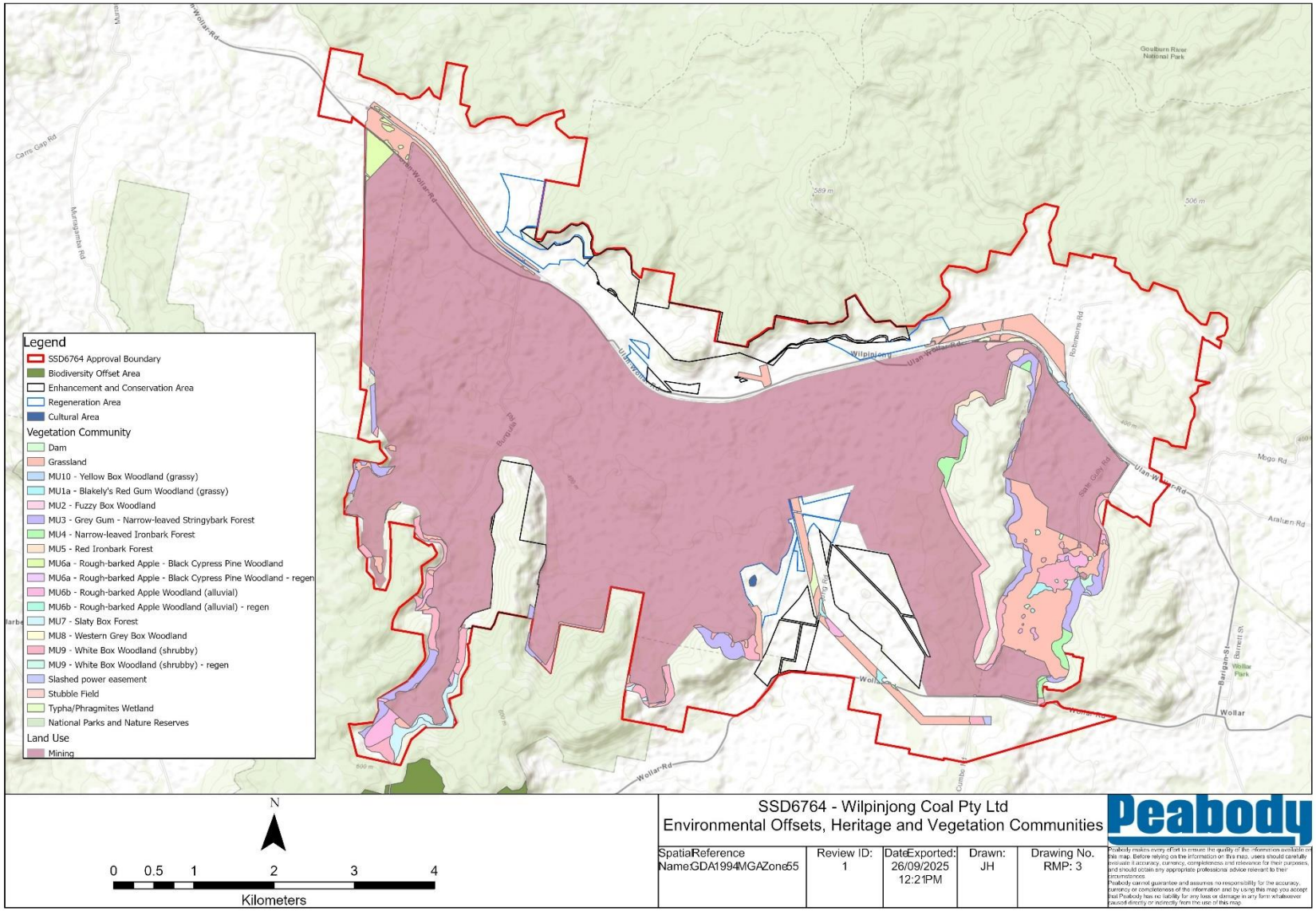
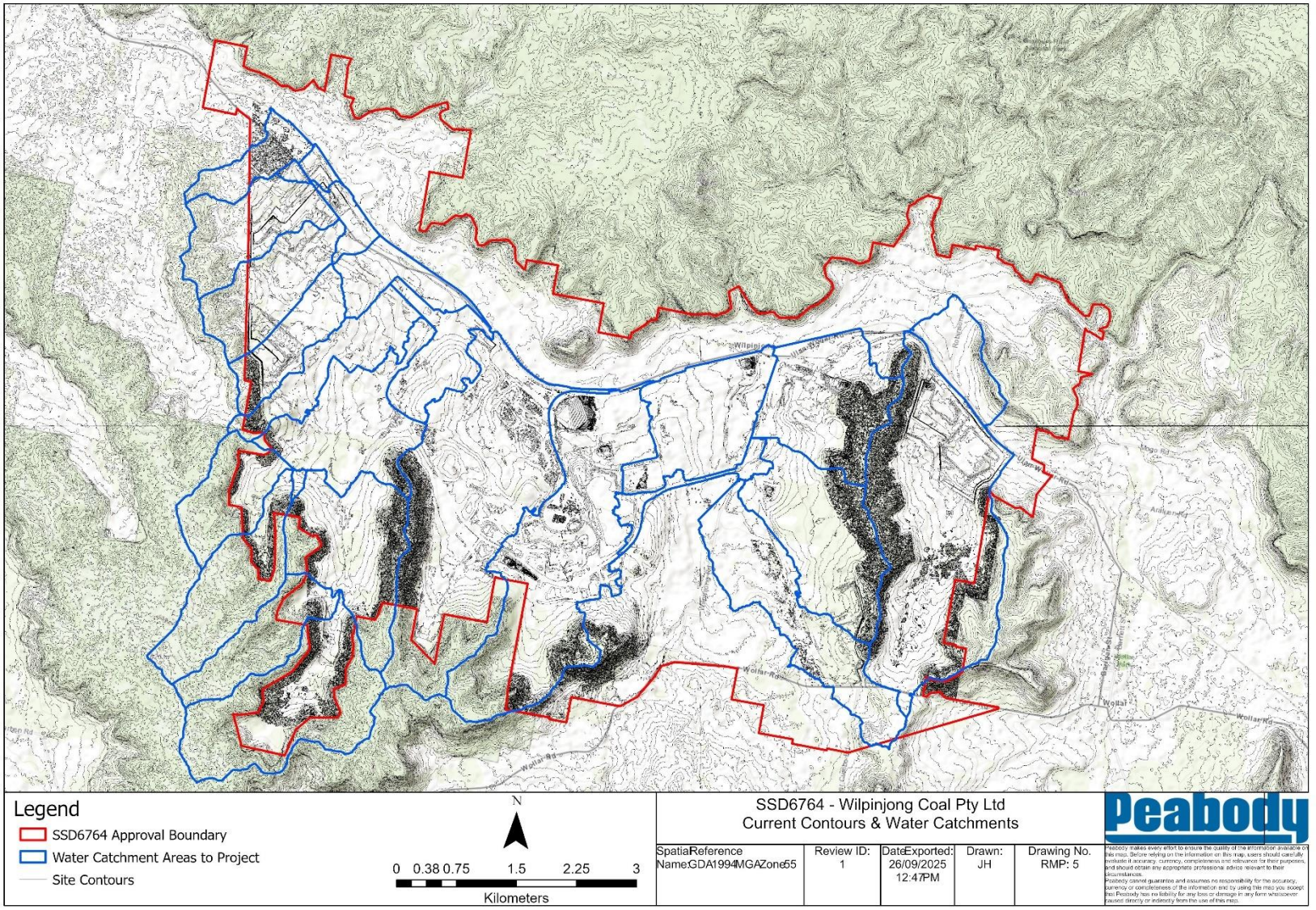


Figure 5 Contours and Catchments



2.0 Final Land Use

2.1 Regulatory Requirements for Rehabilitation

Conditions 60 to 64, Schedule 3 of Development Consent (SSD-6764) details the regulatory requirements relating to rehabilitation (**Appendix B**).

Appendix B outlines the RMP conditions and other associated rehabilitation as required by Development Consent (SSD-6764) and indicates where they are addressed in the RMP.

Appendix B also outlines the approval conditions within ML1573, ML1779, ML1795 and ML1846 as they relate to the RMP and rehabilitation requirements and where they are addressed in the RMP.

2.2 Final Land Use Options Assessment

The 'approved conceptual final landform' and land use is shown in Appendix 8 of Development Consent (SSD-6764). WCPL have an approved Rehabilitation Strategy (Version 3)[3] as required by Condition 61, Schedule 3 of Development Consent (SSD-6764). The Rehabilitation Strategy includes a 'revised conceptual final landform' plan, that builds on the rehabilitation objectives in Table 11 of the Development Consent, including:

- incorporation of micro-relief;
- landform stability; and
- hydrological and ecological function

WCPL are currently revising the Rehabilitation Strategy involving changes to the conceptual final landform, including the recently approved Central-West Orana Transmission Project[4]. This RMP has been prepared in consideration of the current 'approved conceptual final landform', subject to approval of the 'revised conceptual final landform' this RMP will be updated accordingly.

2.3 Final Land Use Statement

As part of the WEP EIS, WCPL identified an opportunity to prioritise woodland establishment within the existing mine rehabilitation areas where previous rehabilitation under PA 05-0021 focussed on the establishment of productive pasture for grazing since 2008. WCPL conducted a re-evaluation of the previous rehabilitation areas against contemporary biometric vegetation types (BVT) classifications to prioritise Regent Honeyeater[5] habitat establishment within existing mine rehabilitation areas. Therefore, the revised entire post mining land use is now woodland to prioritise Regent Honeyeater habitat establishment within existing mine and future rehabilitation areas and contribute to the biodiversity offset requirements for the project.

The approved conceptual final landform plan and final land use is provided in ***Plan 1: Final Landform Features*** and ***Plan 2: Final Landform Contours*** in **Section 5.1**.

2.4 Final Land Use and Mining Domains

The NSW RR has provided a list of Final Land Use and Mining domain names and codes that must be adhered to within this Rehabilitation Management Plan (RMP). **Table 3** details the specific domain titles and the relevant codes.

[3] DPHI conditionally approved Rehabilitation Strategy (Version 3) on the 6 December 2022.
[4] Modification 4 of Development Consent (SSD 6764) was subsequently approved by DPHI in September 2024 and necessitated further changes to the Wilpinjong Coal Mine Rehabilitation Strategy to accommodate the recently approved Central-West Orana Transmission Project.
[5] In accordance with Schedule 3, Condition 37 of the Development Consent SSD-6764

Table 3 NSW Resource Regulator Domain Codes (2021)

Final Land Use Domain	Code	Miming Domain	Code
Native Ecosystems	A	Infrastructure Area	1
Agricultural - Grazing	B	Tailings Storage Facility	2
Agricultural - Farming	C	Water Management Area	3
Rehabilitation Biodiversity Offset Area	D	Overburden Emplacement Area	4
Industrial	E	Active Mining Area (Open Cut)	5
Water Management Areas	F	Underground Mining Area (SMP)	6
Water Storage (Excluding Final Void)	G	Beneficiation Facility	7
Heritage Area	H	Other	8
Infrastructure	I		
Final Void	J		

Notes: Shaded cells are not applicable domains for WCPL

2.4.1 Final Land Use Domains

Final land use domains are land management units characterised by a similar post mining land use objective and BVT requirements. The final land use domains at WCPL are detailed in **Table 4**. The objectives of the final landform design and rehabilitated landform is to establish a safe, non-polluting and stable landform that is compatible with the surrounding landscape and that meets the requirements of the post mining land use. This will incorporate selected vegetation communities (i.e. BVTs) considered most beneficial for the Regent Honeyeaters, as determined by Biodiversity, Conservation and Science (BCS) and DPHI.

The development of the final landform will include incorporating micro-relief principles, landform stability and hydrological and ecological function. The conceptual final landform plan and final land use domains are in ***Plan 1: Final Landform Features*** and ***Plan 2: Final Landform Contours*** in **Section 5.1**, with specific vegetation communities detailed in **Section 6.2.5.**

Table 4 Final Land Use Domains

Code	Final Land Use Domain	Description
D	Native Ecosystem*	HU547 – Fuzzy Box Woodland
		HU697 – Mugga Ironbark-Black Cypress Pine Open Forest
		HU732 – Yellow Box Grassy Woodland
		HU824 – White Box-Black Cypress Pine Shrubby Woodland
		HU825 – Narrow-leaved Ironbark-Black Cypress Pine Grass Woodland
F	Water Management Areas	Re-establishing post-mining surface water drainage with the pre-mining drainage direction
I	Infrastructure	If applicable, infrastructure identified to be retained (e.g. water supply and distribution structures and access tracks) for future management
J	Final Voids	Final void remaining in Pit 2 and Pit 6 that form part of the final landform design

Notes: *The Biodiversity Offset Areas alone will not satisfy the credits required, however the residual credits will be generated through the establishment of woodland rehabilitation at the Mine site

The WEP requires clearance of approximately 354 ha of native vegetation in the open cut extension and infrastructure areas, including the clearance of 9.5 ha of Box-Gum Woodland EEC/CEEC. WCPL

has developed a Biodiversity Offset and Rehabilitation Strategy (the Strategy)[6] to compensate for the biodiversity impacts. The Biodiversity Offset Strategy developed by WCPL addresses unavoidable impacts on threatened species, populations and communities that are listed under the NSW *Threatened Species Conservation Act, 1995* (TSC Act) and the *Commonwealth Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act).

The Biodiversity Offset Strategy comprises a package of Biodiversity Offset Areas (BOAs) properties that has been set aside for conservation and is to be managed in perpetuity via inclusion in the National Parks and Wildlife Service estate. In addition, the Biodiversity Offset Strategy also includes on-site rehabilitation to establish the BVTs and fauna habitat as required in the Development Consent, a number of Enhancement and Conservation Areas (ECAs) and residual Regeneration Areas that will strengthen the linkages between the woodland rehabilitation areas, and the Goulburn River National Park and Munghorn Gap Nature Reserve. The Biodiversity Offset Strategy will also assist in the faunal recolonisation of Project rehabilitation areas and regeneration areas. For further details refer to the BMP.

2.4.2 Mining Domains

Mining domains have been identified on the basis of their operational and functional purpose within the mining disturbance boundary. Mining domains can be defined as land management units within the mine site, usually with unique operational and functional purpose and therefore similar geophysical characteristics. Mining domains outline current land use during the RMP period.

Table 5 Mining Domains

Code	Mining Domain	Description
1	Infrastructure Areas	Constrained Infrastructure Area: • Main Workshop Area, Heavy Vehicle Wash Down, Refuelling Facility, Hydrocarbon Storage, Demountable Buildings, Carpark, Powerlines, Substations and Water Management Infrastructure.
		Mine Infrastructure Area: • Rail Loop, Haul Roads, LV Roads, Meteorological Tower, Mine Entry Road, Reverse Osmosis (RO) Plant, Rail Load Out Bin, Powerlines and Substations and Water Pipelines.
2	Tailings Storage Areas	Tailings are directed to purpose-built tailings storage facilities TD6 and TD7 when constructed (if required).
3	Water Management Areas	Ed's Lake, Clean Water Dam, Recycled Water Dam, Pit 2 West, Pit 5 Fill Point Dam and Pit 8 CWD and clean water diversion structures in Pit 8 and Pit 6
4	Overburden Emplacement Areas	Overburden emplacement areas in Pit 1, Pit 2, Pit 3, Pit 4, Pit 5, Pit 6, Pit 7 and Pit 8
5	Active Mining Areas	Active mining areas in Pit 1, Pit 2, Pit 3, Pit 4, Pit 5, Pit 6, Pit 7 and Pit 8
7	Beneficiation Facility	Coal Handling Preparation Plant Area: ROM and Product Stockpiles, Coal Handling Preparation Plant, Conveyors and Gantries, Belt Filter Press Plant, ROM Crushers, Reclaim Tunnel, Water Management Infrastructure, Powerlines and Substations and Water Pipelines.

[6] The original Biodiversity Offset and Rehabilitation Strategy was developed as part of the EIS (WCPL, 2006) to compensate for the 290 ha of remnant woodland which would be cleared as a result of the Mine. This strategy included the establishment of three ECAs (480 ha) and nine Regeneration Areas (380 ha) as well as 1920 ha of Rehabilitation Areas.

3.0 Rehabilitation Risk Assessment

WCPL completed a rehabilitation risk assessment workshop on 5 March 2025 involving a team of operational, technical and environmental staff and specialist consultants with knowledge of, and experience in, WCPL rehabilitation planning and implementation.

The risk assessment workshop team session was facilitated by a specialist in risk assessment and risk management processes. Consistent with the *AS NZS ISO 31000:2018 Risk Management – Guidelines* the risk assessment workshop included:

- To identify hazards and assess risks associated with rehabilitation at Wilpinjong Coal Mine. In particular, to assess all risks identified through the NSW Resources Regulator Form and Way and Risk Assessment Guidelines related to Rehabilitation Management of Large Mines.
- The focus was on environmental, rehabilitation, financial and compliance risks, with operational activities managed elsewhere through the HSMS.

The Rehabilitation Risk Assessment has been provided as **Appendix D**.

WCPL have developed specific environmental management plans as required by SSD-6764 (**Section 3.2**) that have considered the potential environmental and community risks identified through such risk assessment processes and describe the necessary controls to manage those identified risks.

4.0 Rehabilitation Objectives and Rehabilitation Completion Criteria

4.1 Rehabilitation Objectives and Rehabilitation Completion Criteria

Rehabilitation objectives and rehabilitation completion criteria (**Section 4.1**) are required to be provided to the Secretary for approval under Clause 12, Schedule 8A of the *Mining Regulation 2016* (Mining Regulation). The rehabilitation objectives and completion criteria are provided in this RMP to satisfy the requirement of Clause 12(1)(a) and Clause 12 (1)(b) of the Mining Regulation.

The rehabilitation objectives (ROBJs) for WCPL were approved on the 20 February 2024 by the NSW RR. Refer to **Appendix E**. The completion criteria are still in draft and have not yet been submitted to the Resources Regulator for comment/approval (**Appendix F**).

4.1.2 Rehabilitation Objectives and Rehabilitation Completion Criteria – Stakeholder Consultation

Extensive consultation was conducted in establishing the environmental controls and management measures developed as part of the WEP EIS. In preparation of this RMP, WCPL completed consultation with key government departments and other relevant stakeholders including the CCC, as summarised in **Table 6**. **Appendix C** provides copies of the relevant correspondence undertaken during the preparation on the RMP.

Table 6 Summary of Consultation with Stakeholders

Government Departments	Summary of Consultation	Issues Raised
NSW-RR	Zoom meeting with Mark Greally, Christina Faucett and Matt Newton Friday 4th March 2022. Discussion regarding: Mine status update; Rehabilitation strategy development; Landform optimisation; Moolarben Coal Mine interaction status and Rehabilitation reforms update. Meeting with Matthew Newton Wednesday 11 May 2022. Discussed potential timing issues with the submission of the RMP given the status of the rehabilitation strategy and NSW DPIE. Consultation via Webinar with Matthew Newton 28 June 2022 to clarify reporting period for ARRFP.	No issues raised by NSW - RR
	Wilpinjong Coal Mine Landform Establishment Targeted Assessment Program 1 July 2025 TAP response letter provided 4 September 2025	WCPL are required to address a number of findings from the TAP by way of an Action Plan by the 30 October 2025. Several TAP findings as they relate to this RMP and WCPL responses are provided in Appendix C.
DPHI	30th March 2022, 3 May 2022 ongoing consultation with DPIE regarding the Rehabilitation Strategy with the revised conceptual final landform submitted for SSD-6764. The revised RMP has been updated to incorporate the recent conditional approval on the 6 December 2022 of the Rehabilitation Strategy. The revise RMP was submitted on the 3 January 2023.	In 2022, DPHI seeking further request for information and resubmission of the Rehabilitation Strategy. RMP (Version 1) approved on the 25 January 2023.
CCC	6th June 2022, CCC presented with update regarding MOP to be replaced with RMP (Development of Rehabilitation Management Plan in accordance with *Form and Way - Rehabilitation Management Plan for Large Mines)*.	No issues raised by the CCC
BCS	22nd June 2022 seeking feedback with regards to WCPL Development of Rehabilitation Management Plan in accordance with *Form and Way - Rehabilitation Management Plan for Large Mines)*.	No issues raised by BCS

Government Departments	Summary of Consultation	Issues Raised
MWRC	22nd June 2022 seeking feedback with regards to WCPL Development of Rehabilitation Management Plan in accordance with *Form and Way - Rehabilitation Management Plan for Large Mines).*	No issues raised by MWRC
DCCEEW-Water Group	22nd June 2022 seeking feedback with regards to WCPL Development of Rehabilitation Management Plan in accordance with *Form and Way - Rehabilitation Management Plan for Large Mines)* 27th June 2022 received reply from DPI-Water will await provision of the draft RMP to consider the need for comment.	No issues raised DCCEEW Water Group

Ongoing consultation is completed in accordance with the WCPL Environmental Management Strategy (EMS)[7], which includes, operation of the community consultative committee (CCC) and maintaining information on the Peabody website.

The website is maintained[8] in accordance with Development Consent (SSD-6764). The website provides the wider community with access to the sites monitoring results, details of current activities, proposed blast times, policies, environmental management plans and monitoring programs and any other information in relation to the site operation that may be considered of interest to the community. The Peabody Energy website address for WCPL is:

https://www.peabodyenergy.com/Operations/Australia-Mining/New-South-Wales-Mining/Wilpinjong-Mine

[7] Condition 1, Schedule 5 of Development Consent (SSD-6764)
[8] Condition 12, Schedule 5 of Development Consent (SSD-6764)

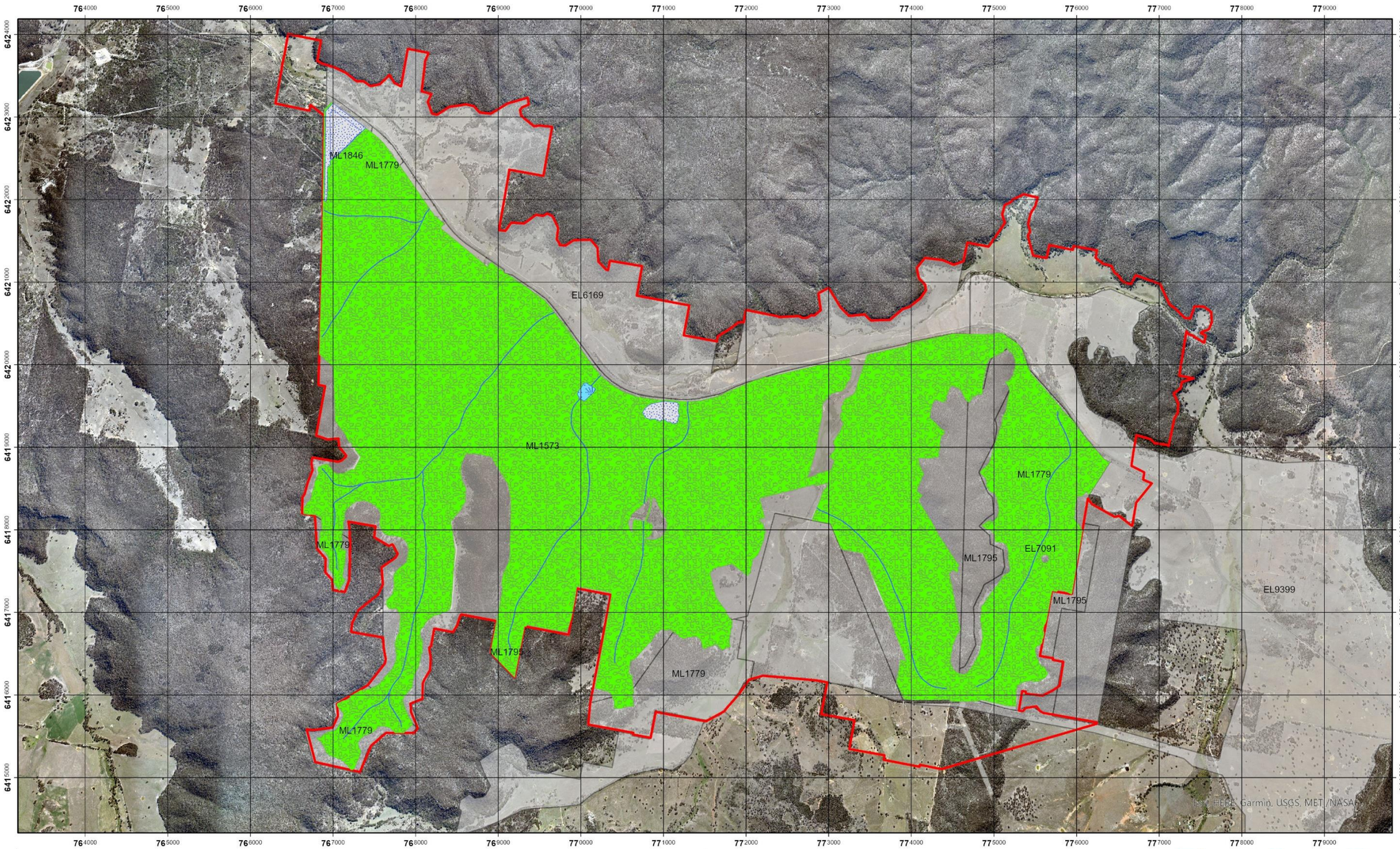
5.0 Final Landform and Rehabilitation Plan

This section outlines the Final Landform and Rehabilitation Plans for Ravensworth Operations which have been prepared as per the RMP *Form and Way Rehabilitation Management Plan for Large Mines.*

In accordance with the requirements of the RMP Form and Way, a Final Land Use and Rehabilitation Plan (**FLRP Plan 1** and **FLRP Plan 2**) has been prepared to show the proposed final land use and final landform at the end of mine life. Copies of the Plans are included in **Section 5.1**.

5.1 Final Landform and Rehabilitation Plan (Electronic Copy)

FLRP Plan 1 – Final Landform Features



Legend

- SSD-6764 Project Approval Boundary

Final Landuse Domain

- Rehabilitation Biodiversity Offset Area
- Final Void
- Water Management Areas
- Current Authorisations

N W E S

0 370 740 1,480 M

Wilpinjong Coal Mine
FLRP Plan 1: Final Landform Features

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Peabody

FLRP Plan 2 - Final Landform Contours

Legend

- Final Landform Contours
- SSD-6764 Project Approval Boundary
- Current Authorisations

N W E S

0 370 740 1,480 M

Wilpinjong Coal Mine
FLRP Plan 2: Final Landform Contours

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6.0 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.

Figure 6 to **Figure 9** display WCPL's LOM (mining and rehabilitation) until mining completion scheduled for the 31 December 2033.

Figure 6 LOM Year 2025

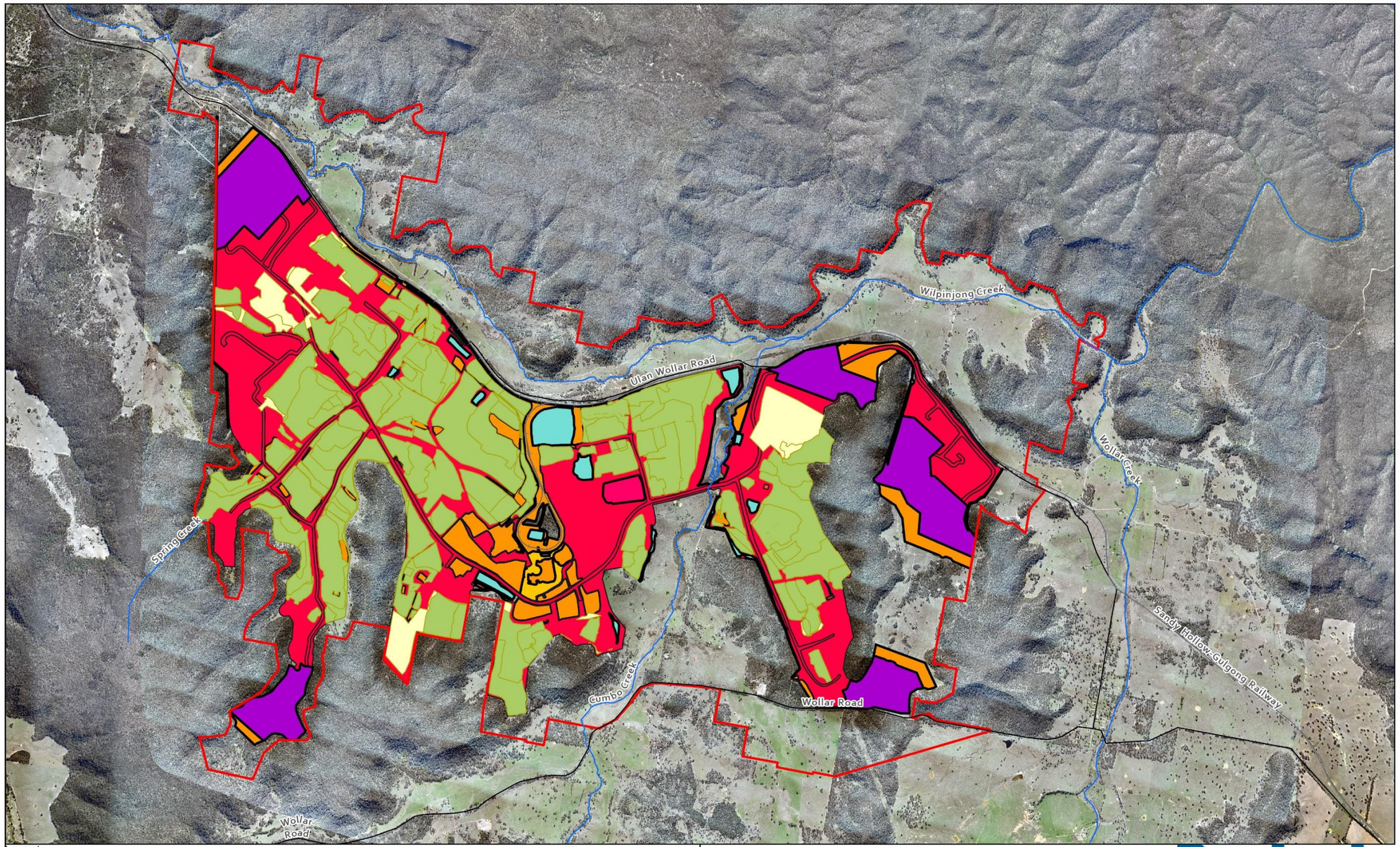


Figure 7 LOM Year 2030

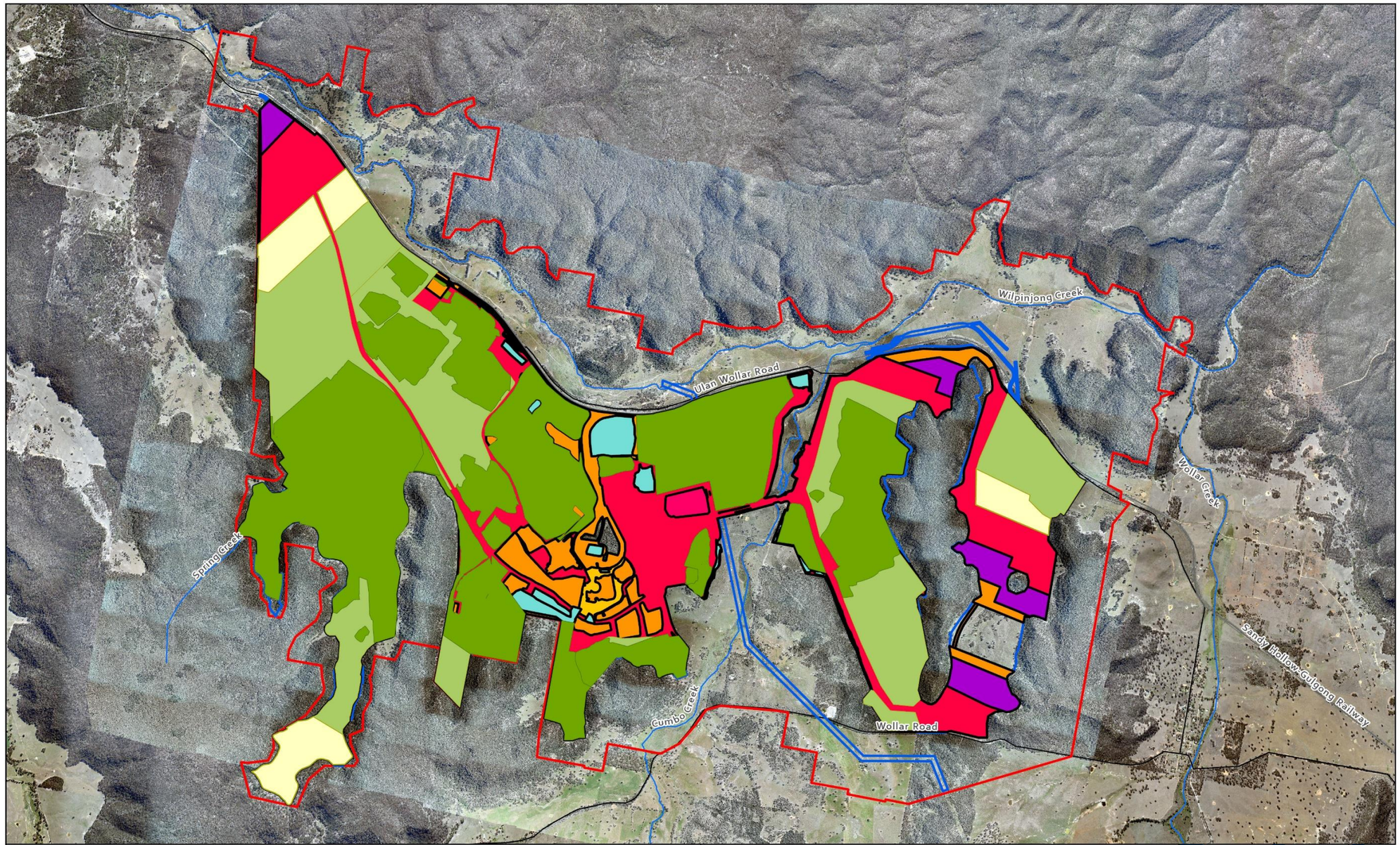
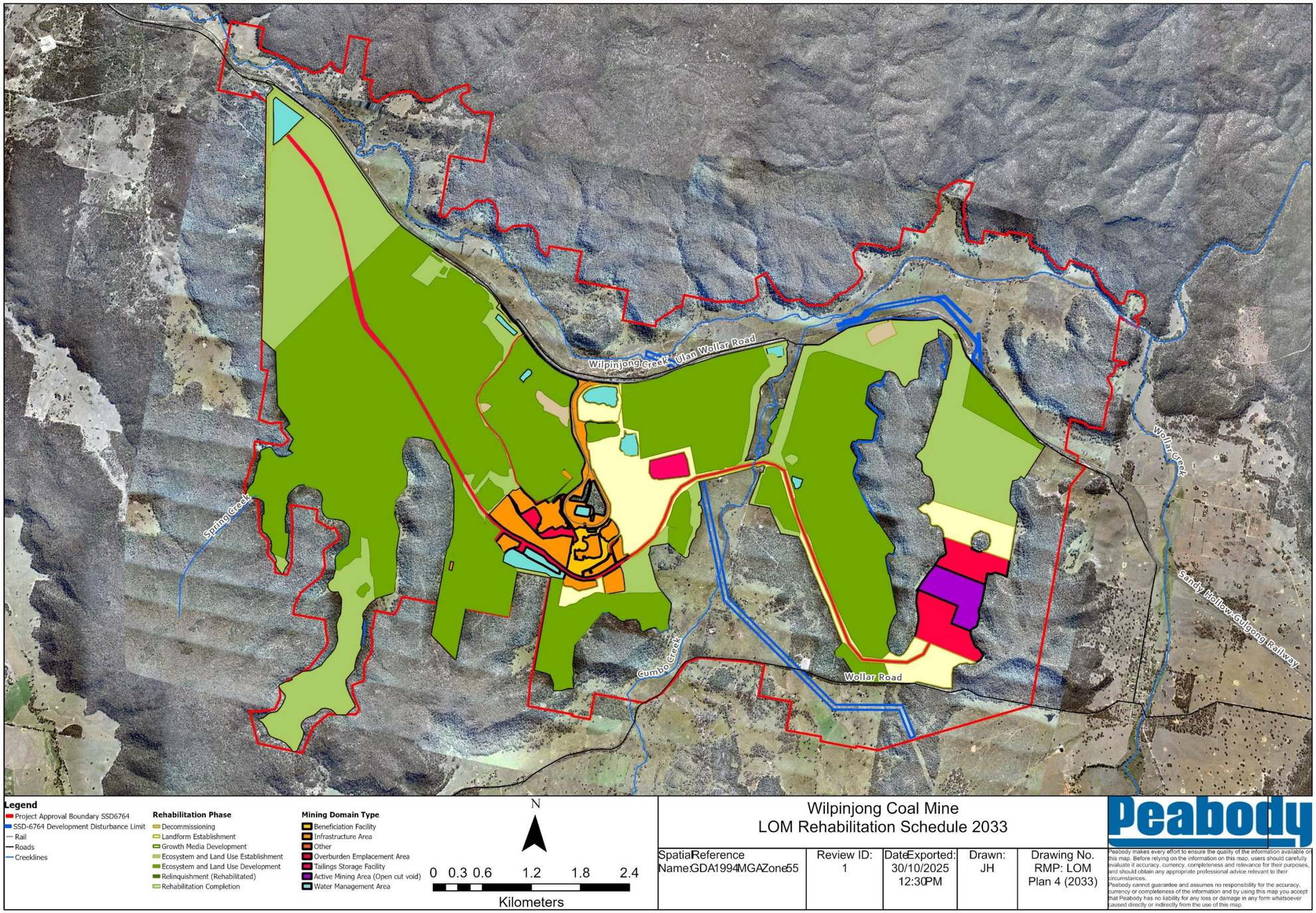


Figure 8 LOM Year 2033



6.2 Phases of Rehabilitation and General Methodologies

The processes to achieve the rehabilitation objectives (**Section 4**) and the final land use (**Section 2**) implemented by WCPL, are primarily associated with the advancing open cut and waste rock emplacement areas. Typically, the following rehabilitation stages of the Mine include:

- ***Active Mining***:
  - Areas where operational mining activities occur. Rehabilitation activities associated with this phase include topsoil management, flora and fauna management, overburden emplacement, waste management, geology and geochemistry, spontaneous combustion, reject/tailings, erosion and sediment control, biological resources, cultural heritage and exploration activities.
- ***Stage 1: Decommissioning***:
  - The consolidation of tailings dams prior to capping and rehabilitation, removal of hard stand areas and roads, mine infrastructure and buildings, wastes, contaminated and hazardous materials.
- ***Stages 2: Landform Establishment***:
  - Incorporates mine waste rock emplacements progressively re-shaped behind the active mining areas to achieve the post mining landform including; appropriate gradient, slope, aspect, drainage, substrate material characterisation and morphology to attain a safe and stable landform;
- ***Stage 3: Growth Medium Development***:
  - Incorporates physical, chemical and biological components of the growing media and ameliorants that are used to optimise the potential of the media in terms of the preferred vegetative cover;
- ***Stage 4: Ecosystem and Land Use Establishment***:
  - Incorporates revegetated lands and habitat augmentation; species selection, species presence and growth together with weed and pest animal control /management and establishment of flora;
- ***Stage 5: Ecosystem and Land Use Development***:
  - Incorporates monitoring and management of floristic structure, nutrient cycling, recruitment and recovery, community structure and function which are the key elements of a sustainable landscape; and
- ***Stage 6: Rehabilitation Completion***
  - Rehabilitated areas that have met the required completion criteria and the land is determined suitable to be relinquished for the mining tenement.

6.2.1 Active Mining Phase

Ground disturbances within the Mine are managed by WCPL using the Ground Disturbance Permit (GDP) (refer to the EMS). A GDP is required to be completed prior to the commencement of new projects or activities requiring ground disturbance. Where required, a site-specific erosion and sediment control plan is developed as part of this process. The GDP must be approved by the Environment and Community Manager (ECM) (or delegate) prior to works commencing. Ground disturbing activities are not authorised to proceed without an approved GDP. Pre-clearance surveys by an appropriately qualified ecologist will also be undertaken as required, in accordance with the Biodiversity Management Plan (BMP) and the GDP.

WCPL have an approved BMP as required by Development Consent (SSD-6764). The BMP outlines strategies, procedures, controls and monitoring programs required to manage flora and fauna within, but not limited to Rehabilitation Areas, in accordance with Development Consent (SSD-6764).

Regular inspections of clearance areas will be undertaken by respective project managers and WCPL's Environmental Representatives to ensure adequate controls are implemented and maintained during the disturbance activity. Inspection frequency will be determined based on the scale of the disturbance

and with consideration to the environmental risks. Controls may need to be amended to accommodate changes in construction activities, adverse weather conditions, disturbance areas, drainage paths and other conditions. Such changes are to be approved by the ECM (or delegate).

Direct and indirect impacts to the Munghorn Gap Nature Reserve will be avoided by detailed mine planning and delineation of areas to be cleared as part of the vegetation clearance protocol (including GDPs). In accordance with Schedule 3, Condition 40 of the Development Consent, all open cut pits will be set back at least 20 m from the boundary of the Munghorn Gap Nature Reserve, delineation of the boundary of the (MGNR), through cadastral, survey was completed prior to commencement of development under the WEP. It is noted that mine support infrastructure (required for site access and water management purposes) is allowable within the 20m set back area.

As required by Development Consent (SSD-6764), WCPL will commence the ecosystem and land use establishment phase of rehabilitation for areas within 50m of the Munghorn Gap Nature Reserve, within 2 years of ceasing mining operations in those areas.

a) Soils and Materials

Prior to topsoil stripping rehabilitation materials such as tree hollows, fallen logs, felled trees and other habitat features (e.g. rocks, stag trees) will be identified for salvage to improve habitat values in rehabilitation areas as required by the BMP and GDP. Where practicable, these materials will be salvaged during the clearing stage of development and set aside within the Mine for later use in rehabilitation areas. For further information refer to the BMP.

Soil landscapes were classified and mapped in accordance with descriptions in the Soil Landscapes of the Dubbo 1:250,000 Sheet (NSW Department of Land and Water Conservation [DLWC], 1998) and Mine field surveys. Three soil landscapes, viz. Ulan, Barigan Creek and Lees Pinch (DLWC, 1998) were identified in the original project area and WEP areas with limitations such as high erosion hazards under low surface coverage, salinity in localised areas, moderate to very low fertility and water holding capacity.

Major soil types identified include red podzolic soils which occur over the majority of mining leases on lower to mid slopes, yellow podzolic soils which occur on lower slopes and minor drainage lines, and earthy sands which occur along Bens Creek and at the bases of sandstone escarpments. Brown earths occur in small patches on the eastern bank of Cumbo Creek and yellow solodic soils occur as a thin band in the south-east of ML1573. Lithosols occur on the higher plateaus and escarpments adjoining the Munghorn Gap Nature Reserve and the steeper slopes in the east of ML1573. Alluvial soils occur along drainage lines (WEP, 2015).

Prior to soil stripping, soil resources will be quantified. Where a deficit of topsoil is identified, investigations will be undertaken to determine the viability of the use of subsoils and to identify the need for treatment measures (e.g. use of ameliorants) applied where there is a deficit of topsoil. Where direct spreading is not practicable, the stripped soil will be stockpiled and managed as summarised below:

- Completed GDP prior to land disturbance activities/clearing;
- Quantification of soil resources and identification of rehabilitation materials;
- Recommended topsoil stripping depths[1] as provided by the soil survey in the WEP EIS:
    - Red Podzolic (~150mm)
    - Yellow Podzolic (~200mm)
    - Brown Earth (~250mm)
    - Alluvial (~300mm)
- Topsoil will be placed directly onto reshaped areas where possible;
- Topsoils and subsoils within WEP will be stripped at the following depths, upon confirmation of soil assessments:

  - Topsoil stripping depths generally ~150mm.
  - Subsoils within areas of shallow soils, rocks or high salinity generally ~350mm.
  - Subsoils in Pit 8 generally ~850mm.
- Preferably, topsoil and subsoil will be stripped during periods of greater moisture content and will be carried out to avoid adverse weather conditions;
- Mulching (when required) of vegetation prior to topsoil stripping, where possible, to provide additional organic matter;
- Selective stockpiling of rehabilitation materials as close as possible to rehabilitation areas;
- Selective stockpiling of soils according to soil type and soil characteristics will be stockpiled separately to the greatest extent possible and stockpiled at <3m in height, outside of high traffic areas; and
- When necessary, implementation of management measures to ensure long-term viability of soil resources including erosion and sediment control, application of ameliorants, weed control, cover crops and signage.

WCPL topsoil inventories have identified that the site will have sufficient topsoil resources to complete rehabilitation across the life of mine.

b) Flora

Pre-clearance surveys prior to disturbance are undertaken as required, to identify if any protected or endangered species or ecological communities are in the proposed disturbance area boundary in accordance with the GDP and Pre-Clearance Protocol in the BMP.

WCPL has implemented a native seed collection and propagation program, to ensure that the genetic integrity, structure and composition of local vegetation types are maintained throughout the broader landscape. Where available, the collection and propagation of locally sourced native seed will be carried out opportunistically by a suitably qualified, licensed provider, who is trained in plant identification, seed collection, data recording, seed storage techniques and propagation. WCPL's seed collection provider will follow best practice principles, with the FloraBank guidelines (FloraBank, 2013) to be used to guide the seed collection process.

The seed collection program will take into account the seasonality of seed availability and the specific target seed lists required to establish the various BVTs across the mine rehabilitation areas as specified in Section 6 of the BMP.

Seeds of the threatened *Ozothamnus tesselatus* have been collected and propagated by WCPL for use in the rehabilitation and Regeneration Areas. Seeds from *Ozothamnus tesselatus* will be collected during November (or other relevant times that seed is available) from the known populations within the open cut extension and infrastructure areas and throughout the BOAs (where the species is also known to occur).

Annual and opportunistic monitoring of weeds across mine rehabilitated areas is undertaken to determine appropriate weed control programs. Treatment of weeds will be undertaken by suitably qualified and experienced personnel. For more information regarding weed control refer to the BMP.

When required, WCPL's use of cover crops is a way of providing stabilisation and soil improvement. Essentially a cover crop can be grown before being ploughed into the soil when the plant is still 'green' and then re-seeded with the applicable BVT species and/or included into the seed mix with the applicable BVT species during initial seeding. At WCPL, the cover crop has included various combination of legumes (cow peas, clover), sorghum, millet, sudan grass, and oats. Further information regarding revegetation refer to **Section 6.2.5**.

WCPL's Biodiversity Monitoring Program in the BMP, includes annual monitoring of flora. This monitoring program will be used to evaluate ecosystem function and performance and the success of specific management actions implemented across the Mines rehabilitation areas.

c) Fauna

Pre-clearance surveys prior to disturbance are undertaken as required, to identify if any protected or endangered species or ecological communities are in the proposed disturbance area boundary in accordance with the Vegetation Clearance Protocol and GDP Procedure in the BMP.

Additionally, during the clearance stage, rehabilitation materials such as sensitive wildlife habitats such as tree hollows, are identified within the proposed disturbance area. Other rehabilitation materials including fallen logs, felled trees and other habitat features (e.g. rocks, stag trees) will be identified for salvage to improve habitat values in rehabilitation areas. Where practicable, these materials will be salvaged and set aside within the Mine for later use in rehabilitation areas. For further information refer to the BMP.

Habitat augmentation involves the establishment of habitat structures within selected rehabilitation areas. This includes the relocation of surplus trees removed from the Mine footprint that are not required for mine site rehabilitation and re-establishment as log habitat or the establishment of nest boxes. Procedures, monitoring methodology, performance criteria and recording requirements will be developed for the re-establishment of logs and establishment of nest boxes and stags prior to their installation. The requirement for installation of such features will be determined by appropriately trained ecologists and will be provided as recommendations through the biodiversity monitoring program Section 9 of the BMP.

Fallen logs, felled trees and other habitat features (e.g., rocks, stag trees) will be used to improve habitat values in rehabilitation areas. Materials (e.g., stags) will be salvaged during the clearing stage of development and used in the appropriate management domains. Logs will be sourced from the revegetation / rehabilitation works, once they have been successfully established. The main harvesting period is anticipated to be in the period 10-15 years where tree thinning will be undertaken to yield fallen logs with a minimum diameter of 10 cm. Shrub species such as *Acacia linearifolia* may also be used for this purpose, especially given their capacity to generate significant amounts of stem biomass of greater than 10 cm diameter in short timeframes.

WCPL have set aside a log stockpile area within the Mine for the stockpiling of felled timber from WCPL land and externally sourced logs for later use in rehabilitation areas.

WCPL's Biodiversity Monitoring Program in the BMP, includes annual monitoring of fauna. This monitoring program will be used to evaluate ecosystem function and performance and the success of specific management actions implemented across the Mines rehabilitation areas.

d) Rock/Overburden Emplacement

Mined waste rock (including overburden and interburden) would continue to be progressively placed in mine voids behind the advancing open cut operations, once the coal has been removed. A combination of temporary and permanent out-of-pit waste rock emplacements are located adjacent to the open cut mining operations (**Figure 6**).

Mine waste rock emplacements behind the advancing open cut are constructed to approximate the pre mining topography. The waste rock emplacements would be progressively shaped (as soon as reasonably practicable following disturbance)[9] by dozers for rehabilitation activities (i.e. re-contouring, topsoiling and revegetation). Some of the overburden is also utilised to construct internal walls for the tailings emplacements and visual bunds along select pit boundaries.

[9] In accordance with Condition 62, Schedule 3 of SSD6764 progressively rehabilitated may be subject to further disturbance at some later stage of the development. It is also accepted that delays in rehabilitation due to extended wet or dry conditions may occur.

Final landform levels and topography of the backfilled mine landforms would generally approximate the pre mining topography, with some variations, and would be designed with an allowance for the long-term settlement of mine overburden.

Inert cover will be placed on top of the final landform surface to provide a benign barrier between any overburden that has not completely equilibrated with surface geochemical conditions.

Carbonaceous material will be placed at least 2 m below the surface of the backfilled mine void landform and at least 5 m below the surface of the Elevated Waste Rock Emplacement (Pit 2).

The elevated waste rock emplacement in Pit 2 would be temporarily rehabilitated at a height of up to approximately 450m AHD, before being reshaped and pushed down to a maximum elevation of approximately 440m AHD at the end of the mine life as a component of finalising site landforms and slopes.

WCPL materials balance calculation for waste rock emplacement has identified that the site will have sufficient material for LOM to complete rehabilitation across the life of mine[10].

e) Waste Management

WCPL has implemented a waste management strategy. The key waste streams at the Mine comprise of sewage and wastewater, recyclable and non-recyclable wastes and hazardous wastes. WCPL have engaged an appropriately licensed waste management contractor to perform the following activities in relation to waste management, including but not limited to;

- On-site waste management including waste segregation of scrap steel, general waste, recyclables, hydrocarbons and hazardous materials;
- Off-site disposal to licensed waste facilities;
- Off-site recycling to licensed waste centres; and
- Recording and reporting waste volumes.

In accordance with EPL 12425, WCPL can dispose up to 350 tonnes of waste tyres per annum on-site within mine void waste rock emplacement areas. In addition, WCPL would continue to dispose of both on and offsite inert waste from demolition of Peabody owned dwellings and structures in the waste rock emplacements in accordance with existing approvals.

The sewage treatment and disposal facilities at the Mine currently include a number of sewage treatment and pumping systems that discharge to within the rail loop and rehabilitation areas near remote crib huts and the CHPP. These facilities are currently serviced regularly by a licensed contractor as required. This is undertaken in accordance with Condition O4 of EPL 12425.

Various waste materials are collected and sorted for recycling including paper, cardboard, metals, glass, air filters, oil filters, waste oil, waste grease, oil rags and hydraulic hoses by WCPL licensed waste contractor.

In the event hydrocarbons have contaminated soil material as a result from spillages for example, the contaminated material will either removed from site by WCPL licensed waste contractor to an appropriate licensed facility for treatment or removed to WCPL's on site bioremediation area for remedial treatment. The bioremediation area is located within Pit 1 area. The material is disposed of within active waste emplacement areas only after the material has been successfully remediated.

Waste hydrocarbons will be collected, stored and removed by licensed waste transporters. The workshop infrastructure includes waste oil extraction equipment for efficient removal of waste oil during machinery servicing. Runoff from the workshop floor and apron, refuelling pads and truck washdown

[10] WCPL currently have a revised rehabilitation management strategy for approval with DPIE, subsequent to mine sequence changes to maintain operations and employment. The change in mine sequence, together with an identified material balance shortfall, required a revision to the approved final landform. Subject to approval of the revised rehabilitation management strategy, this RMP will be updated accordingly.

area pass through purpose-built oil/water separator systems which are inspected and maintained on a regular basis. Oily water from the oil/water separators are removed from site by WCPL licensed waste contractor.

f) Geology and Geochemistry

WCPL completed a review of the geochemical properties of the Mine area and the WEP area in February 2015. The Environmental Geochemistry Assessment of Overburden, Interburden and Coal Rejects (February 2015) was undertaken by Geo-Environmental Management Pty Ltd (GEM).

The test work by GEM included acidity, sodicity, electrical conductivity (EC), acid base accounting, and element enrichment and solubility. The results from the GEM investigations concluded waste rock materials would typically be neutral to slightly alkaline, generally non-saline and is expected to be in the range from non-sodic to moderately sodic and non-acid forming (NAF).

The acid base accounting test work indicates however that a small quantity of interburden associated with the lower plies of the Ulan Coal Seam would be potentially acid forming – low capacity (PAF-LC) and coal from the Goulburn and Turill Seams would be potentially acid forming (PAF) or PAF-LC.

The results from the GEM investigations were generally consistent with the results for the 2005 EIS, i.e. the overburden and interburden materials are expected to be non-saline and non-acid forming (NAF) and the coarse reject and tailings material produced from the CHPP is expected to contain some sulphur and is likely to have some capacity to be potential acid forming (low capacity) and be moderately saline (EIS, 2005).

Annual review of internal mine water monitoring data trends will be undertaken to understand if any evidence of potential acid forming (PAF) material or sources are present in the overburden/interburden or coal rejects. Due to the identified element enrichments and solubilities in the overburden and interburden, and coal rejects, and the presence of PAF and/or sodic materials (GEM, 2015). WCPL are currently developing a staged testing program, including the following tests and procedures:

Stage 1 (all samples)

- pH and electrical conductivity (EC) determination
- Total sulfur (S) assay (Leco High Temperature method)
- Acid Neutralising Capacity (ANC) determination
- Net Acid Producing Potential (NAPP) calculation

Stage 2 (selected samples)

- Sulfide S analysis (Chromium Reducible Sulfur [CRS] method)
- Single addition Net Acid Generation (NAG) test
- *Extended boil NAG test

*NOTE: the extended boil NAG test has been included in the analytical suite due to the carbonaceous nature of some of these materials.

The aim if the test results will be to evaluate the presence of any PAF material within the assessed intermediate and/or final emplacement surfaces, to assist WCPL manage future waste rock emplacement. Refer to **Table 10** for management actions if PAF material is encountered.

Detailed description of the physical and chemical characteristics of the overburden, interburden, coarse reject and tailings materials is provided in Section 2 of WEP EIS.

g) Material Prone to Spontaneous Combustion

Spontaneous combustion events at the Mine have historically been associated with both ROM coal stockpiles and carbonaceous material located in temporary waste rock emplacements. While these events have been managed in accordance with the Spontaneous Combustion Management Plan (SCMP), they have at times resulted in perceptible odour and/or associated environmental complaints from nearby private receivers and/or users of Ulan-Wollar Road and Mogo Road.

The coal stockpile spontaneous combustion events arose due to stockpiling of ROM coal for an extended period, and this is now avoided by close monitoring and priority washing of select ROM coal types after they have been stockpiled on-site for a designated period.

Current measures for preventing outbreaks include mine planning, spontaneous combustion propensity testing, risk identification and assessment, and identification of potential hot spots. Mine planning considerations include:

- Placement and capping of carbonaceous material to minimise the potential for spontaneous combustion outbreaks;
- Placing higher-risk materials as low as practicable in the backfilled mine voids and elevated waste rock emplacement profiles
- Sealing exposed seams of non-active highwall faces with inert material (where exposed for an extended period); and
- Stockpile management.

WCPL has developed an inspection program for spontaneous combustion at the Mine. An inspection program of spoil emplacements, stockpiles and tailings emplacement areas has been implemented, based on visual and odour assessment, targeting cool moist periods when signs will be most visible, in accordance with the SCMP.

WCPL conducts reviews of spontaneous combustion propensity characteristics throughout the target coal seams (including partings). Results from the testing program will guide improvements to carbonaceous material management and mitigation. This review would also be applied to the design, construction and monitoring of the elevated waste rock emplacement that would be developed in Pit 2

Risk identification and assessment involves identifying and closely monitoring coal stockpiles that have a higher propensity to spontaneously combust. Additionally, selected ROM coal types (that are showing signs of heating or have been stockpiled on-site for an extended period) are prioritised for washing in the CHPP.

Using thermal imaging technology and visual inspections, existing spontaneous combustion hot spots across the Mine have been identified. These hot spots are monitored and assessed on a regular basis to determine appropriate mitigation strategies as well as providing feedback into the understanding of spontaneous combustion at the mine (i.e. appropriate capping depths and timeframe for reactivity of carbonaceous material).

WCPL propose a R70 propensity testing program to assist material classification requirements for identifying material with a higher propensity for spontaneous combustion. The program would be conducted using representative grab samples from material generated during routine blast drilling. The results from the testing program will assist WCPL in the management of carbonaceous material placement within voids and final landforms.

h) Material Prone to Acid Mine Drainage

The bulk of the waste rock is expected to be NAF, non-saline and barren in terms of acid generation and neutralisation, apart from a small quantity of potential acid forming/low capacity (PAF/LC) material occurring in the floor rock of the G seam (2015 GEM).

Coarse reject material produced from the CHPP is expected to be non-saline and PAF/LC and the tailings were expected to be either potential acid forming (PAF) or PAF/LC (2015 GEM). There are no known acid mine drainage (AMD) issues associated with bulk waste rock emplacements at WCPL, notwithstanding the implementation of management strategies in regards to PAF/LC and PAF materials, includes:

- Operational sampling and geochemical testing of mine materials and water quality monitoring to identify any potential emerging risks of elevated PAF material presence i.e. a testing program

to confirm the waste rock scheduled to be placed within the final outer surface of the back-filled mine voids (i.e. outer 2 m) and the elevated waste rock emplacement (i.e. outer 5 m) is NAF. Further details are provided in **Section 6.1.1 (f)**.

- Waste rock materials encountered from the floor rock of the G seam are managed so that no zones of PAF or PAF/LC material are exposed near the surface and the material blended well with NAF producing an overall NAF material or encapsulated with NAF material;
- Inert cover will be placed on top of the rehabilitation final landform surface to provide a benign barrier between any overburden that has not completely equilibrated with the surface geochemical conditions;
- PAF or PAF-LC material is placed at least 2 m below the surface of the backfilled mine void landform and at least 5 m below the surface of the elevated waste rock emplacement;
- The PAF tailings would continue to be managed in such a way as to minimise potential oxidation during disposal, including lime dosing if required when disposal occurs irregularly to dedicated tailings storage facilities;
    - The tailings dams are progressively capped with inert overburden material to a minimum depth of cover of 2 m creating a stable landform ready for final profiling, topsoiling (0.15m to 0.3m layer) and revegetation;
- The topsoil management strategies including topsoil characterisation and mine waste rock characterisation to determine appropriate ameliorates e.g. the use of lime, gypsum and/or fertiliser to improve the chemical and/or nutrient properties of the soil; and
- The geochemical monitoring program of rehabilitated areas for pH, Electrical Conductivity (EC) and major cations to determine whether the vegetation substrate is approaching conditions similar to those found in the reference sites.
- Coarse reject material would be dispersed throughout the overburden within the mine waste rock emplacements with the aim of producing a mix with a sulphur content that has an acid producing potential less than the acid neutralising capacity of the overburden;
    - A blend ratio of at least 2:1 (overburden: coarse rejects) would be used. The total tonnage of coarse rejects produced over the life of the Mine would be approximately one-seventh of the total mine waste rock produced, therefore there would be scope to increase the blending ratio, if required;
        - Coarse rejects would not be placed within 2m of the final landform surface so there is sufficient coverage by non-acid forming overburden to provide a barrier to oxygen movement through the rehabilitated profile;
        - Coarse reject material is deposited below the natural surface in the mined-out voids and dispersed throughout to manage its geochemical characteristics (i.e. acid generation potential);
        - Coarse rejects are placed so there is sufficient coverage by non-acid forming overburden to reduce oxygen movement through the rehabilitated profile, which also assists to minimise spontaneous combustion potential within the rehabilitated waste rock emplacement landform.
        - Treatment with buffering agents and isolation of PAF material to minimise infiltration and subsequent leachate.

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

The CHPP rejects consist of fine rejects and slimes, as well as coarse rejects.

- The coarse coal reject material from the CHPP is hauled back to the mining operation and deposited below the natural surface in the mined-out voids as close to the pit floor as practically possible. Coarse reject material is dispersed throughout the overburden within the mine waste rock emplacements to manage its geochemical characteristics i.e. acid generation potential.
- Fine rejects and slimes from the thickener are dewatered in the tailings filter press to allow co-disposal of tailings with coarse rejects and to increase water efficiency. The tailings filter press has been operational since April 2015. Coarse and fine CHPP rejects are hauled back to the mining operation and deposited below the natural surface in the mine voids.
- When the tailings filter press is not operational (e.g. scheduled maintenance or breakdown) tailings are directed to purpose-built tailings storage facilities TD6 (TD7 when built, if required) constructed within mine voids, or may alternatively be transferred to temporary holding and dewatering cells to be constructed in the vicinity of the CHPP to allow subsequent co-disposal with the coarse rejects within the mine voids, as described above.

Implementation of management strategies in regard to both reject and tailings disposal is provided in **Section 6.2.1d and Section 6.2.1h**.

j) Erosion and Sediment Control

WCPL have developed a Surface Water Management Plan (SWMP) which provides sediment and erosion control strategies, principles and design criteria to control sediment laden water from areas disturbed by mining activities to maintain downstream water quality. The SWMP is a component plan of the Water Management Plan (WMP), as required by Development Consent (SSD-6764).

The Rehabilitation Strategy includes a revised final landform plan that builds on the rehabilitation objectives in Table 11 of the Development Consent (SSD-6764). One objective of the final landform is to develop drainage features in the post-mine landform that mitigate erosion potential and incorporate micro-relief (i.e. geomorphic landform design).

WCPL is also reviewing the final drainage system for the conceptual Wilpinjong Coal Mine landform, and with the assistance of GeoFluv landform design specialists has been incorporating natural drainage features (e.g. point bars, pinch points and boulders) to naturally attenuate flows and improve the long-term erosional stability of some key drainage lines within the backfilled open cuts. This work includes consideration of pre-mine drainage and the post-mining bed profiles, geomorphic parameters and hydraulic modelling of stream power and shear stress.

Sediment control dams may need to be constructed along major drainage lines in rehabilitated landforms to reduce suspended solids in water flowing from site. Rock waterways are most likely to be required when rehabilitating out of pit dumps as these landforms will have the steepest slopes and therefore the highest velocity water flows from the top to the bottom of the landforms.

WCPL are implementing auto water samplers at two locations within the final landform to monitor surface water flows to build a baseline of data for surface water quality across rehabilitated landforms. This data will be used to inform the runoff water quality parameters for rehabilitation relinquishment and will be provided in forthcoming revisions of the Surface Water Management Plan (SWMP).

Annual and opportunistic inspections are undertaken across mine rehabilitated areas to identify areas of erosion requiring management measures to remediate.

k) Ongoing Management of Biological Resources for Use In Rehabilitation

Details of the management measures of biological resources for the use in rehabilitation including topsoil, tree hollows, fallen timber and native seed collection are provided in **Section 6.2.1a**, **Section 6.2.1b** and **Section 6.2.1c**.

l) Mine Subsidence

WCPL is an open cut mining operation with no occurrence of underground mining since the Mine commenced and therefore mining related subsidence is not applicable.

m) Management of Potential Cultural and Heritage Issues

WCPL have developed an Aboriginal Cultural Heritage Management Plan (ACHMP). The ACHMP also includes an Archaeological Salvage Program. The ACHMP has been prepared to assist WCPL in the investigation, salvage and management of Aboriginal heritage issues at the Mine and has been developed in consultation with OEH and all Registered Aboriginal Parties (RAPs).

The ACHMP summarises the archaeological surveys and provides site specific management strategies for previously identified sites. The monitoring programme described in the ACHMP will continue to be implemented during the RMP.

WCPL will not undertake any ground disturbance activities except in accordance with the terms of this ACHMP and following the issuing of a GDP. Archaeological investigations will only be undertaken by archaeologists qualified and experienced in Aboriginal heritage, in consultation with and/or the involvement of the RAPs and will occur prior to any development impacts occurring to those specific areas or sites.

Aboriginal artefacts salvaged from areas to be disturbed will continue to be collected and relocated to a “keeping place” where the artefacts are stored after analysis, documented by the archaeologist in accordance with the ACHMP. Replacement of objects from the Keeping Place onto rehabilitated landforms and/or Conservation Areas, will be undertaken in accordance with the general guidelines as provided in the ACHMP.

As of June 2022, areas approved for mining related disturbance out to two years in advance of mining, have been cleared by RAPs in accordance with the ACHMP.

The WEP Historical Heritage assessment, identified 21 sites of local historical heritage significance and three items with no historical heritage significance. Of the identified 21 sites of local heritage significance, four have the potential to be impacted by the Project. One site, namely the Historical Shale Oil Mine Complex is located in Slate Gully, partially within the Project open cut boundaries. The Road Embankment is located within the construction area for the realignment of the TransGrid Wollar to Wellington 330 kV ETL. A further two sites (Pine Park and William Carr’s Hut are located in relatively close proximity to the Mine.

To manage any potential mining effects upon the know local heritage sites, WCPL has developed a Historic Heritage Management Plan as required by Development Consent (SSD-6764). Management measures such as the realignment of the electricity transmission lines were implemented (where reasonable) to minimise Mine related impacts upon heritage items, such as the “stone wall”.

n) Exploration Activities

Exploration activities were contemplated in the WEP and approved pursuant to a Development Consent SSD-6764, under the *Environmental Planning and Assessment Act 1979* (EP&A Act). The exploration drilling program will continue to update gas and coal quality data for WCPL. Exploration activities and annual reporting will continue to occur as required within exploration licences (EL) EL 6169, EL 7091 and EL 9399 and within ML1573, ML1779 and ML1795. Mitigation measures relevant to exploration and land clearing activities at WCPL include the following:

- Drilling sites and access will be located to avoid areas of remnant vegetation, other sensitive areas and minimise the requirement for vegetation clearance.
- A vegetation clearance protocol and a GDP procedure have been developed. The GDP requires the approval of WCPL Environmental Manager prior to any land clearing activities taking place.
- The vegetation clearance protocol and GDP aim to minimise environmental impacts, including minimising the area required for disturbance for drill sites and access tracks, identify

environmental issues such as Aboriginal and European heritage sites, identify sensitive flora and fauna communities, outline erosion and sediment control measures, provide topsoil management and limiting soil disturbance measures, avoiding threatened species, and the identification of any seed or timber resources that can be salvaged.

- Following the environmental review process as required by the GDP, the proposed disturbance footprint will be prepared using small earthmoving equipment to allow for the work to be undertaken safely and in a manner that minimise environmental impacts. These works will continue to comply with the latest version of the Resource Regulator's *ESG5: Assessment Requirements for Exploration Activities and/or other relevant guidelines.*
- In accordance with GDP process, follow up inspections are completed by WCPL's Environmental Department to ensure the GDP is carried out and each drill site is rehabilitated to the appropriate standard.
- At the completion of exploration and prospecting activities, bore holes will be decommissioned in accordance with NSW-RR's relevant guidelines. All disturbed areas including non-essential access tracks, sumps and drill pads will be rehabilitated if future disturbance is not proposed.
- WCPL may install additional groundwater monitoring piezometers utilising exploration boreholes within the Mine's MLs and ELs to extend groundwater monitoring network required by the Groundwater Management Program (GWMP).

6.2.2 Decommissioning

As outlined in Section 5 of the WEP EIS, a Mine Closure Plan (MCP) would be developed for the Mine in consultation with the MWRC, DPIE and the local community. The development of the MCP will have a Final Void Management Plan (FVMP), as a component of the MCP in advance of mine closure, in consultation with the DPIE, DPIE-RR and other relevant authorities.

When available, revegetation of Mine disturbance areas would be conducted progressively as mining proceeds, with coal removal and the formation of final landforms behind the advancing face of the open cut (i.e. completed mine waste rock emplacements). Rehabilitation and revegetation of infrastructure areas would also be undertaken progressively as infrastructure is decommissioned.

The strategies and planning set out in the RMP, with respect to mine closure and the MCP, reflect the current stages of mine development and will be reviewed in consultation with all relevant government and community stakeholders during the LOM as strategies and planning mature and develop further. Notwithstanding, the following management activities proposed by WCPL at the cessation of mining activities are provided below.

a) Site Security

Measures to be implemented by WCPL to minimise risks to public safety during decommissioning and other mine closure activities include:

- Maintain existing boundary fencing along mining leases, signage and locked gates;
- Review the requirements for additional security fencing in specific areas, for example in more remote areas of the Mine and/or around voids to prevent authorised access;
- Utilise security contractors where necessary; and
- Maintain site communication and induction protocols for visitors and contractors required to access the site.

Further details of site security measures at the decommissioning phase and during other mine closure activities will be provided in the MCP.

b) Infrastructure to be Removed or Demolished

Infrastructure with no ongoing beneficial use would be removed from the site at the completion of the project. Infrastructure removal and demolition activities at mine closure will include:

- All electrical, water and communication services including overhead, buried and remote services to be disconnected and removed from site. However, if further assessment of buried services (e.g. pipelines, cables, etc.) identifies a greater disturbance to remove, the infrastructure may be left in situ and surveyed to record the location, provided they do not pose constraints to the post mining land use.
- All demolition work is carried out in accordance with *Australia Standards AS2601-2001: The Demolition of Structures* (or its latest version).
- The removal of all buildings, fixed and mobile plant/equipment and associated mining infrastructure including:
    - Rail loop and loadout facility, conveyors, coal crushing, coal stacking and reclaiming system, reclaim tunnel, coal handling process plant (CHPP), belt press filter facility (BPF), demountable buildings; workshops, the proposed temporary accommodation camp, sheds, storage and hardstand areas, all concrete slabs and foundations and culverts, all tanks, bitumen carparks and roads and associated road furniture; power poles and pipelines, pumps and pontoons, all remote infrastructure and communications, meteorological towers and all mobile mining equipment.
- All waste to be classified against relevant guidelines for appropriate salvage, disposal and transportation.
- All exploration holes and redundant groundwater monitoring and production bores to be grouted and rehabilitated in accordance with relevant legislation, guidelines and conditions of water licences.
- Dewater all water in pipelines and mine water dams back into the Mine's water management system prior to removing pipelines and preparing mine dams for backfilling and integration into final landform.
- Water management structures and sediment control structures would either be retained as water sources for future land uses or decommissioned and rehabilitated. Selected water management structures and sediment control structures would either be retained as wetland habitat/water features or decommissioned and rehabilitated. The design, capacity and final location of these post mining water management structures will be refined and detailed in revised water management plans as the Mine progresses towards mine closure.
- Foundation concrete slabs would be excavated for disposal or buried in a void in an approved manner.

The tailings in a completed tailings dam would be allowed to consolidate prior to the commencement of rehabilitation. Rehabilitation of tailings dam to occur only when they are deemed to be suitably safe by an appropriately qualified engineer.

Haul roads and light vehicle roads that have no specific post-mining use would be ripped, topsoiled and revegetated after the removal of any surface carbonaceous material. Some light vehicle access roads may be retained post-mining to enable access and for use in bushfire and other land management activities.

In consultation with regulatory authorities during the preparation of the MCP, there may be the need to remove redundant and/or establish additional monitoring sites to complement existing programs at mine closure, for example establishing groundwater monitoring sites.

c) Buildings, Structures and Fixed Plant to be Retained

As required by Development Consent (SSD-6764), unless the Secretary agrees otherwise, all buildings, structures and fixed plant as described in **Section 6.2.2b** will be removed from the Mine at the cessation of mining.

During the preparation of the MCP, WCPL will undertake further assessments regarding buildings, structures and fixed plant likely to have a beneficial post mining use for the Secretary's consideration.

d) Management of Carbonaceous/Contaminated Material

All carbonaceous reject material and residual carbonaceous material (i.e., haul roads, CHPP, stockpile bases, under conveyors etc) to be removed and placed at least 2m below the surface of the backfilled mine void landform and placed at least 5m below the surface of the Elevated Waste Rock Emplacement (Pit 2), so not to pose a threat of environmental harm or restrict the intended final land use.

Assessment of contamination to be completed in accordance with *Contaminated Land Management Act 1997* (CLM Act) and reporting guidelines *National Environment Protection (Assessment of Site Contamination) Measure 2013* (ASC NEPM 2013), by an EPA certified contaminated land consultant (practitioner).

Contamination areas identified during investigations are to be remediated to a condition that does not pose a threat of environmental harm or restrict the intended final land use. Verification reports will be issued to confirm that contamination has been remediated provided by an EPA certified contaminated land consultant (practitioner).

e) Hazardous Materials Management

Process reagents, hydrocarbons and chemicals unused at the completion of mining would either:

- Be returned to the supplier (if applicable) or disposed of by an appropriate licenced waste provider, in accordance with the relevant safety and handling procedures;
- Assessed against the Mine's register of hazardous products for removal and disposal from site; and
- Stored at the Mine in accordance with manufactures and legislative requirements until removal.

All storage historical hazardous materials storage areas and facilities at the Mine will undergo the contamination assessments as described in **Section 6.2.2d**.

f) Underground Infrastructure

WCPL is an open cut mining operation with no occurrence of underground mining since the Mine commenced and therefore underground infrastructure as it relates to an underground mining operation is not applicable. However, there is a reclaim tunnel buried under the product stockpile which will be exposed and removed (**Section 6.2.2b**).

6.2.3 Landform Establishment

As identified in the WEP, mine waste rock emplacements including infrastructure areas would cover an area of approximately 2,790 ha. Consistent with the requirements of Condition 61, the Rehabilitation Strategy presents a revised final landform that builds on the rehabilitation objectives in Table 11 of Development Consent (SSD-6764). The rehabilitation requirements in the Rehabilitation Strategy include:

- Incorporation of micro-relief;
- Landform stability; and
- Hydrological and ecological function.

The following sections provide an overview of the key characteristics of the final landform as shown in the final landform and rehabilitation plan **FLRP Plan 1** and **FLRP Plan 2** in **Section 5.1**.

a) Water Management Infrastructure

To achieve WCPL's rehabilitation objectives for the Mine to construct a safe, stable and non-polluting landform that is designed to incorporate micro-relief and integrate with surrounding natural landforms and adjacent mine rehabilitation, maximising geotechnical performance, stability and hydrological function, the following general design principles are implemented;

- Selected water management structures and sediment control structures would either be retained as wetland habitat/water features or decommissioned and rehabilitated. The design, capacity and final location of these post mining water management structures will be refined and detailed in revised water management plans as the Mine progresses towards mine closure.
- A pattern of creek features (flow paths) would be formed over the final landforms comparable to the pre-mine regime. These reconstructed creek features would convey upslope runoff across the Mine area to Wilpinjong Creek.
- The natural pre-mining drainage direction at Wilpinjong Coal Mine is from south to north. Water drains from the base of the Munghorn Gap Nature Reserve area north to Wilpinjong Creek and onto the Goulburn River. This drainage pattern will be reinstated during construction of the final landform and completion of rehabilitation works.
- The domain would be profiled to a free-draining landform with runoff reporting to the natural environment (e.g. no settlement and surface subsidence leading to extended ponding).
- The application of micro-relief concepts to open cut mining activities is principally focussed on "complex landforms", such as the design of large elevated out of pit waste emplacement landforms, key principles that have been considered, and where relevant applied, include:
    - Establishing valleys in rehabilitated landscapes consistent with the types of valleys observed in natural landscapes.
    - Rehabilitated areas should blend into and complement the drainage pattern of the surrounding terrain.
    - Designing channels of progressively higher orders and of greater capacity and cross-sectional area (Hannan, 1984).
    - Establishing watercourses that become progressively steeper as one moves upstream (Environment Australia, 1998, p.20).
- WCPL has engaged Golder Associates to undertake a review of key areas of the revised final landform plan and implement geomorphic design refinement in future rehabilitation areas with potential erosion risk or to increase micro-relief variation in the final landform. GeoFluvTM design techniques have been applied in various areas as part of ongoing development of final landform designs.
- WCPL is also reviewing the final drainage system for the conceptual Wilpinjong Coal Mine landform, and with the assistance of GeoFluv landform design specialists, has been incorporating natural drainage features (e.g. point bars, pinch points and boulders) to naturally attenuate flows and improve the long-term erosional stability of some key drainage lines within the backfilled open cuts. This work includes consideration of pre-mine drainage and the post-mining bed profiles, geomorphic parameters and hydraulic modelling of stream power and shear stress.

At the completion of final landform plan and implement geomorphic design reviews, this RMP will be updated to reflect the revised drainage design for the mine rehabilitated areas.

b) Final Landform Construction: General Requirements

To achieve WCPL's rehabilitation objectives for the Mine to construct a safe, stable and non-polluting landform that is designed to incorporate micro-relief and integrate with surrounding natural landforms and adjacent mine rehabilitation, the following general design principles are implemented;

- The placement of carbonaceous material is controlled through material classification and dump design parameters. In constructing dumps, carbonaceous material (such as rejects and Top of Coal waste) is restricted to a limit of 5 m below the Final Surface Level (FSL), ensuring it is adequately encapsulated beneath competent, non-reactive material suitable for long-term rehabilitation.
- Final landform levels and topography of the backfilled mine landforms will generally approximate the pre-mining topography within the open cut areas, with some variations, and are designed with an allowance for the long-term settlement of mine overburden.
- The surface of mine waste rock emplacements would be constructed to approximate (where practicable) the existing topographic form of the shallow valleys which drain the Project area. Mine waste rock emplacement surfaces would be formed to enhance rainfall absorption. Regular slopes and sharp transition angles would be varied and rounded to provide a more natural appearance.
- Where long slopes are present, contour drains or deep staggered rips would be established to assist in initial surface stabilisation.
- Mine waste rock emplacements would be shaped by dozer prior to the commencement of rehabilitation activities (i.e. re-profiling, re application of topsoil/subsoil and revegetation).
- The elevated waste rock emplacement (Pit 2) would be temporarily rehabilitated at a height of up to approximately 450 m AHD, before being reshaped and pushed down to a maximum elevation of approximately 440 m AHD at the end of the mine life as a component of finalising site landforms and slopes.
- Inert cover will be placed on top of the final landform surface to provide a benign barrier between any overburden that has not completely equilibrated with surface geochemical conditions.
- Non-sodic waste rock material would preferentially be placed on the surface of the backfilled mine void landform (or sodic waste rock material would be treated with a material containing soluble calcium [e.g. gypsum, calcium chloride or limestone]).
- With the exception of highwall slopes associated with final voids and areas adjoining natural escarpments, rehabilitated mine landforms are to be constructed to no greater than 1:6 (10 degrees or 17%) across the entire ML area.
- If required, graded banks will be considered for construction across the slope of rehabilitated areas to collect and direct water flowing from newly rehabilitated areas into rock waterways. Graded banks would be constructed at 50 m intervals down the slope of the elevated waste rock emplacement and would be constructed at 1% longitudinal grade to the contour of the slope.
- An approximate 0.1 to 0.3 m layer of soil would be placed on the backfilled landform prior to revegetation. Revegetation of the mine waste rock emplacements is described in **Section 6.2.5**.
- No significant forms of erosion that would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures.
- There will be no spontaneous combustion in the final landform so as not to pose a threat of environmental harm or restrict the success of the intended final land use.
- The post closure monitoring and measurement program will be similar to that undertaken during the active mining operation to ensure rehabilitation works have been completed in accordance with the relevant rehabilitation criteria and objectives.

c) Final Landform Construction: Reject Emplacement Area and Tailings Dam

To achieve WCPL rehabilitation objectives for the Mine to construct a safe, stable and non-polluting landform, the following general design principles are implemented;

- Carbonaceous or any PAF or PAF-LC material would be placed at least 2 m below the surface of the backfilled mine void landform and at least 5 m below the surface of any elevated waste rock emplacement areas.
- An approximate 0.1 to 0.3 m layer of soil would be placed on the backfilled landform and tailings dam prior to revegetation. Revegetation of the mine waste rock emplacements is described in **Section 6.2.5**.
- Site investigation by suitably qualified tailings engineer to confirm if sufficient strength within the tailings dam has been achieved prior to capping activities
- The tailings dams would be progressively covered with overburden material to a minimum depth of cover of 2 m to create a stable landform. Non-sodic waste rock material would preferentially be used for the overburden cover (or sodic waste rock material would be treated with a material containing soluble calcium [e.g. gypsum, calcium chloride or limestone]).
- Tailings dams are capped appropriately in accordance with capping design as confirmed by survey against the final landform design.
- The final landform levels and topography of the rehabilitated tailings disposal areas will generally approximate the pre-mining topography, with some variations, and are designed with an allowance for the long-term settlement of tailings and an inert capping layer.
- Landform settlement monitors (high precision survey monitoring) with extensive surface tracking and alarm capabilities have recently been installed on WCPL's two most recently capped tailings dams (TD4 and TD5). The continued data collection will influence WCPL's capping strategy and determine appropriate allowance for settlement to meet landform design and RL requirements.
- No significant forms of erosion that would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures.
- There will be no spontaneous combustion in the final landform so as not to pose a threat of environmental harm or restrict the intended final land use.
- The post closure monitoring and measurement program will be similar to that undertaken during the active mining operation to ensure rehabilitation works have been completed in accordance with the relevant rehabilitation criteria and objectives.

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

At the completion of mining, the approved Mine's final landform would include final voids located in the north-west of Pit 6 and in Pit 2. Specific rehabilitation objectives for final void areas are to minimise to the greatest extent practicable, the size and depth of final voids, the drainage catchment, any high wall and low wall instability risk and risk of flood interaction for all flood events up to and including the PMF.

Once mining operations cease, groundwater inflows to the final voids would no longer be collected and pumped out, and as a result, the two final voids would gradually begin to fill with water. Water in other on-site operational storages may also be transferred to the final voids in Pits 2 and 6 to facilitate decommissioning and rehabilitation.

Inflows into the final voids would comprise incidental rainfall, runoff within the final void catchment area and groundwater. The catchment area of the final voids would be defined by permanent perimeter bunds, diversion channels and/or bunds/ embankment walls.

Updated final void modelling of the revised conceptual final landform for the Rehabilitation Strategy was complete in early in 2022. The key outcomes included:

- The revised Pit 6 final void would have a larger catchment area.
- The revised Pit 2 and Pit 6 final voids would continue to function as groundwater sinks.
- The maximum void water levels are expected to remain well below the crest of the void and hence would not spill to the environment.
- The total surface area of the final void waterbodies is similar to the approved concept, with some increase in the size of the ultimate Pit 6 void waterbody.

Final void design criteria will be detailed in the Final Void Management Plan (FVMP), as a component of the Mine Closure Plan to ensure minimal highwall instability risk, based on site-specific geotechnical information. To ensure the final voids achieve their specific rehabilitation objectives, the final void design will incorporate the following:

- The final surface catchment of the final voids would also be minimised by the use of contour landforms.
- Perimeter bunding would be formed around the final voids in order to restrict access to steeper slopes. Any further final void access restrictions (e.g. fencing) for safety and exclusion of livestock would be designed and implemented in consultation with relevant authorities.
- While the open cut depths at Wilpinjong Coal Mine are relatively modest, final void highwalls will be subject to detailed geotechnical design and factors of safety would be adjusted to reflect that these voids will be a final landform feature.
- The reduced slope of the Pit 6 void low-wall provides improved accessibility to the final void waterbody. This is considered a beneficial change for post-mining access to the waterbody (subject to appropriate water quality considerations).

e) Construction of Creek/River Diversions

As outlined in the Water Management Plan (WMP), it does not include the Cumbo Creek Relocation Plan. As provided for in Condition 31, Schedule 5, WCPL has requested a deferral of preparation of the Cumbo Creek Relocation Plan until closer to the time of the intended relocation.

As agreed with DPIE, consistent with the requirements of the note to Condition 31, Schedule 3 of Development Consent (SSD-67-64), WCPL will commence the Cumbo Creek Relocation Plan in the following alternative timeframe:

- 2019 to 2021 – development of mine planning, engineering and supporting technical advice for the creek relocation;
- 2022 – preparation of the draft Cumbo Creek Relocation Plan and conduct of associated regulatory consultation; and
- 2023 – submission of the Cumbo Creek Relocation Plan.

WCPL would update this WMP to incorporate the Cumbo Creek Relocation Plan (CCRP), subject to approval of the CCRP.

6.2.4 Growth Medium Development

Periodic sampling and analysis of topsoil/ subsoil and across the surface of the final landform, prior to topsoil application, will be carried out to characterise and determine applicable amelioration requirements. WCPL will apply the appropriate soil ameliorants at rates specified from material characterisation results to assist with correcting the physical, chemical and biological components of the substrate as required.

Topsoil is to be placed on top of the final landform to act as germination medium for vegetation and as a seed source from the natural seed bank present at the time of topsoil stripping. Topsoil placement shall only proceed once the final landform and major drainage works, as described in **Section 6.2.3a**,

have been completed. Topsoil is to be applied at a minimum of 100 mm thickness and maximum of 300 mm in all areas.

Topsoiling must be undertaken from the top of slopes or top of sub drainage catchment to minimise erosion damage created by storm runoff from bare upslope areas. Care should be taken to minimise the travel over previously spread topsoil by running on bare spoil and turning onto the spreading run. Topsoiling must be conducted along the general run of the contour. Topsoil is not to be placed in down slope bands as this increases the incidence of erosion. Generally, no topsoil is to be placed in the invert of drainage lines or drainage works.

Topsoil will not be required where vegetation trials have demonstrated that inert cover can be used as a suitable substitute. Lime and/or gypsum, cow manure or fertiliser will be applied on inert cover or topsoil materials used for rehabilitation activities if necessary to assist in improving the physical and chemical characteristics of the rehabilitation materials.

Deep ripping, seeding and fertilizing will be undertaken following the placement of topsoil and construction of drainage structures on the reshaped final landform. Ripping will be carried out generally to a depth of 300 mm to 500 mm on the contour with survey control. Full and continuous ripping is to be undertaken where practicable. Deep ripping will be utilised so that rip lines remain open for erosion control and to encourage infiltration of water where required. Seeding and fertilising should be undertaken contemporaneously with contour ripping.

WCPL own and maintain various specialist mobile equipment to undertake rehabilitation activities at the Mine, operated by trained and experienced WCPL personnel.

6.2.5 Ecosystem and Land Use Establishment

On completion of landform contouring, topsoiling and erosion and sediment control works, a vegetative cover would be applied as soon as practicable with the aim at sowing specified seed species reflecting seasonal conditions. This would involve sowing cover pasture species and seeding and planting of selected shrub and tree species.

Timing for initial vegetation establishment is an important factor for successful revegetation. Where possible, sowing and planting are planned to occur as soon as possible prior to the expected onset of reliable rains or after a break of the season (i.e. Autumn and Spring).

As required by Development Consent (SSD-6764), WCPL will commence the ecosystem and land use establishment phase of rehabilitation for areas within 50m of the Munghorn Gap Nature Reserve, within 2 years of ceasing mining operations in those areas[11].

Where rehabilitation areas are to be seeded, a suitable seedbed would be prepared using appropriate equipment to increase the chances for successful seedling establishment. Where necessary, seed would be sown with fertiliser. Areas seeded may be lightly scarified to assist shallow seed burial. Both seeding and direct planting techniques would be utilised for tree and shrub species.

As of December 2021, approximately 901ha of completed Mine landforms have been rehabilitated. The landforms[12] that are currently completed to pasture or considered not woodland, will be progressively upgraded with relevant woodland species to meet the BVT requirements.

The entire revegetation programme for the Mine rehabilitation areas is to provide BVT woodland areas. The selection of BVTs for the revegetation are displayed in Figure 11 of the BMP. The revegetation programme for the Mine rehabilitation areas would establish some 2906 ha of woodland vegetation, and in association with the establishment of woodland vegetation in the regeneration areas and ECAs, would contribute to an overall net increase in woodland vegetation of some 1,095 ha.

[11] Ancillary infrastructure would need to be retained for access and water management.
[12] Rehabilitated to the requirements of the now surrendered PA05-0021

The rehabilitation programme has been designed to link the revegetated woodland areas and the regeneration areas to the adjacent existing remnant vegetation surrounding the operation, namely the Goulburn River National Park and Munghorn Gap Nature Reserve.

The most common method of vegetation establishment at WCPL is broadcast and direct seeding of selected groundcover and/or tree seed mixes. Aerial seeding is also utilised. Seed sowing is usually supplemented by the concurrent application of granulated fertiliser. Sowing is undertaken shortly after topsoil spreading to avoid loss of topsoil due to wind and rain action.

Tubestock planting by appropriately experienced providers, will be utilised where it is considered natural regeneration of native species is unlikely to occur in a timely manner and to establish a staging in plant ages. Species composition and stems per hectare rates for tubestock planting will be reflective of the adjacent communities, pre-clearing vegetation community types and applicable Performance and Completion Criteria for the intended Rehabilitation BVTs. Seedlings are propagated from local provenance seed stock where possible. WCPL's preference will be to source regionally grown quality tubestock species as they have demonstrated to be more adaptable to local climatic conditions.

WCPL continue to maintain a native seed inventory partly collected from local, native seed sources carried out by suitably qualified personnel which will be used in rehabilitation activities. WCPL's native seed inventory is reviewed annually, with seed viability testing as required. WCPL's seed collection provider will follow best practice principles, with the FloraBank guidelines (FloraBank, 2013) to be used to guide the seed collection process. Typical BVT species and rates are shown in **Table 9**.

Table 7 Typical BVT Seed Mix Rates

BVT Species	Average Rates (kg/ha)
HU547 – Fuzzy Box Woodland	25kg
HU697 – Mugga Ironbark – Black Cypress Pine Shrub/Grass Open Forest	23kg
HU732 – Yellow Box Grassy Woodland	30kg
HU824 – White Box – Black Cypress Pine Shrubby Woodland	25kg
HU825 – Narrow Leaf Ironbark Black Cypress Pine Shrub/Grass Woodland	30kg

As required, WCPL's will continue to utilise cover crops on a case-by-case basis, as a temporary or transitional method of providing stabilisation and soil improvement and dust control. Essentially a cover crop can be grown before being ploughed into the soil when the plant is still 'green' and then re-seeded with the applicable BVT species and/or included into the seed mix with the applicable BVT species during initial seeding. Typical cover crops have included various combination of legumes (cow peas, clover), sorghum, millet, sudan grass, at rates generally shown in **Table 10**.

Table 8 General Cover Crop Combinations and Rates

Cover Crop Species	Rates (kg/ha)	Cover Crop Species	Rates (kg/ha)
Chicory **Cowpea** **Sorghum**	4kg 12kg 6kg	**Cowpea** **Sudan Grass**	12kg 10kg
Cowpea **Jap Millett**	12kg 6kg	**Oates** **Clover**	60kg 15kg
Cowpea **Sorghum**	12kg 6kg		

Fertiliser application is beneficial to vegetation establishment to replenish any nutrient deficiencies. The type of fertiliser and application rate varies according to the specific site, soil type and post mining use of the area. When applying any additional chemical or products to the soil, the effects of runoff and leaching will be considered on WCPL's mine water management system, as rapid leaching from organic wastes are known to provide ideal conditions for algal blooms and exacerbate weed growth and infestation.

Following the changes in topography, drainage and soil conditions that results from open cut mining, some local provenance species may not be suitable for revegetation and seed sourced from outside the immediate district may be required. The most appropriate species to use to rehabilitate the area are those most suited to the soil types, drainage status, aspect and climate of the site. The biodiversity values of the surrounding native vegetation communities are considered during rehabilitation planning. Distribution of vegetation type and species selection will be designed to enhance these values, whilst ensuring that weed and fire hazards are not increased for surrounding local agricultural areas

Where practicable, habitat features (e.g. large hollows) would be salvaged during vegetation clearance activities and utilised in the rehabilitation areas, regeneration areas and other management domains. In addition, artificial roosting/nesting boxes for fauna, particularly threatened fauna, may be used in the rehabilitation areas, regeneration areas and other management domains to provide additional habitat resources. For more information regarding habitat augmentation refer to the BMP

The Biodiversity Monitoring Program, as described in detail in the BMP includes monitoring of flora and fauna, and a range of landscape function indicators. This monitoring program will be used to evaluate ecosystem function and performance and the success of specific management actions implemented across the various management Domains. Reference sites have been established during the first round of biodiversity monitoring and will also be established in areas of equivalent habitat type adjacent to the management Domains.

Annual and routine weed management program in rehabilitated areas of the Mine are implemented to prevent further spread. Treatment of all weeds will be undertaken by suitably qualified and experienced personnel. For more information regarding weed control refer to the BMP.

6.2.6 Ecosystem and Land Use Development

This section presents a summary of rehabilitation monitoring program as described in the BMP. A detailed description of this program is set out in **Section 8**. Rehabilitation performance will be monitored to ensure vegetation is establishing and to determine the need for any maintenance and/or contingency measures. An overview of the content of the rehabilitation monitoring program is provided below:

- A series of monitoring locations have been set up in the rehabilitation areas on the mine site, to monitor establishment and regeneration of vegetation. These sites are visited annually to record changes in vegetation progress.
- Visual monitoring of revegetation will be conducted as part of other routine environmental activities to ensure 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 and animal pest control, fencing). Annual photographic recording of each established vegetation monitoring site will also be recorded.
- Conventional vegetation monitoring is carried out in rehabilitated spoil areas on the mine site as well as the regeneration areas. This involves using quadrats and transects to measure vegetation parameters which allows a progressive assessment of vegetation progress. Monitoring at these sites is undertaken annually. Analogue sites (i.e. reference sites) sites are compared to the other monitoring sites and act as a “calibration” to account for variations between seasons.
- Rehabilitated spoil areas will be monitored for spoil pH, electrical conductivity (EC), major cations and organic matter to determine whether the vegetation substrate is approaching conditions similar to those found in the reference sites. This data will be used to identify potential spoil deficiencies over time and assist with the development of maintenance programs if underperforming areas are identified during visual and other monitoring. This will also assist with determining/demonstrating whether the spoil is suitable as a long-term substrate for sustainable rehabilitation.

- Terrestrial fauna surveys will be conducted to sample fauna species diversity and abundance in the rehabilitation areas. Systematic survey sites have been established to monitor amphibians, reptiles, birds and mammals.
- Further details of flora and fauna monitoring are provided in the BMP

6.3 Rehabilitation Areas Affected by Subsidence

WCPL is an open cut mining operation with no occurrence of underground mining since the Mine commenced and therefore mining related subsidence in rehabilitated areas is not applicable.

7.0 Rehabilitation Quality Assurance Process

Table 11 outlines the key rehabilitation quality assurance actions and processes WCPL have implemented for each of the rehabilitation phases.

Table 9 Key Rehabilitation Quality Assurance Actions and Process

Rehabilitation Phase	Quality Assurance Process/Key Actions	Document & Recording Methodologies	Review and Refinement Process	Responsibilities
Active Mining	• Mine plan in accordance with approved Development Consent (SSD-6764) • Waste rock, rejects and tailings placed correctly in landform based on geochemical properties.	• Landform Design, Rehabilitation Implementation and Inspection Form* • Surveyed and identified on mine plans • Notes* within the above document	• Rehabilitation Verification Document*	• Technical Services Manager • Mine Manager
	• Ground disturbance and pre-clearance surveys in accordance with BMP and GDP process. • Soils and other rehabilitation materials salvaged and stockpiled in accordance with BMP and GDP. • Inspections during ground disturbance activities in accordance with GDP	• GDP Register • Surveyed and identified on mine plans. • Pre-clearance reports from ecological specialists • Annual reporting in Annual Review; • Biodiversity and rehabilitation monitoring reports; • Annual rehabilitation report (ARR) and Forward Plan; • Inspections confirm rehabilitation resources salvaged and stockpiled.	• As required by the Annual Review (at the end of each reporting year, following an incident or independent environmental audit or a modification to Development Consent (SSD-6764). • As required by ARRFP	• Environment and Community Manager
Decommissioning	• All services, equipment and infrastructure identified for removal in accordance with the MCP. • Consolidation of tailings in accordance with engineering requirements. • Contamination assessments and remediation completed as required by MCP. • Classification of wastes for disposal/recycling.	• Register of redundant infrastructure, equipment and services. • Waste disposal records from licenced waste provider. • Engineering reports confirm tailings ready for capping. • Remediation of contamination validation reports • Annual reporting in accordance with MCP.	• To be included in the MCP (at the end of each reporting year, following an incident or independent environmental audit or a modification to Development Consent (SSD-6764).	• Mine Closure Team (MCP) • Environment and Community Manager
Landform Establishment	• Mine plan in accordance with approved SSD-6764. • Waste rock, rejects and tailings placed correctly (at applicable depth) in the landform based on geochemical properties including PAF and propensity for spontaneous combustion. • Operational sampling and geochemical testing for potential PAF material.	• Landform Design, Rehabilitation Implementation and Inspection Form • Surveyed and identified on mine plans	• As required by the Annual Review (at the end of each reporting year, following an incident or independent environmental audit or a modification to Development Consent (SSD-6764). • As required by ARRFP	• Technical Services Manager • Mine Manager

Rehabilitation Phase	Quality Assurance Process/Key Actions	Document & Recording Methodologies	Review and Refinement Process	Responsibilities
	• Landforms constructed in accordance with the Rehabilitation Strategy (i.e. incorporating micro relief, stable and hydrological and ecological functional) and Development Consent (SSD-6764) • Tailings dams and waste rock emplacements areas capped to requirements	• Surveyed landforms confirmed against designs. • Annual monitoring and opportunistic inspections • Biodiversity and rehabilitation monitoring reports; • Annual rehabilitation report (ARR) and Forward Plan; • Reporting in the Annual Review; • Reports maintain by E&C Department • Records of capping tailings dams in accordance with engineering deigns maintained by Tech Services		• Technical Services Manager • Environment and Community Manager
Growth Medium Development	• Soil characterisation completed. • Geochemical analysis of overburden material. • Application of topsoil at nominated depths Ameliorants applied. • Surface preparation completed (e.g. ripping and keying).	• Landform Design, Rehabilitation Implementation and Inspection Form • Surveyed and identified on mine plans • Annual monitoring and opportunistic inspections • Biodiversity and rehabilitation monitoring reports; • Annual rehabilitation report (ARR) and Forward Plan; • Reporting in the Annual Review • Reports maintain by E&C Department	• As required by the Annual Review (at the end of each reporting year, following an incident or independent environmental audit or a modification to Development Consent (SSD-6764). • As required by ARRFP	• Technical Services Manager • Environment and Community Manager
Ecosystem and Land Use Establishment	• Application of appropriate BVT seed species within the final landform • Rehabilitation monitoring; • Surface water monitoring; and • Land management.	• Landform Design, Rehabilitation Implementation and Inspection Form • Surveyed and identified on mine plans. • Annual monitoring and opportunistic inspections • Biodiversity and rehabilitation monitoring reports; • Annual rehabilitation report (ARR) and Forward Plan; • Reports maintain by E&C Department	• As required by the Annual Review (at the end of each reporting year, following an incident or independent environmental audit or a modification to Development Consent (SSD-6764). • As required by ARRFP	• Environment and Community Manager
Ecosystem and Land Use Development	• Rehabilitation monitoring; • Surface water monitoring; and • Land management.	• Annual monitoring and opportunistic inspections • Biodiversity and rehabilitation monitoring reports; • Annual rehabilitation report (ARR) and Forward Plan; • Reports maintain by E&C Department	• As required by the Annual Review (at the end of each reporting year, following an incident or independent environmental audit or a modification to Development Consent (SSD-6764). • As required by ARRFP	• Environment and Community Manager

8.0 Rehabilitation Monitoring Program

WCPL's Biodiversity Monitoring Program within the BMP, includes annual monitoring of flora and fauna, and a range of landscape function indicators. This monitoring program will be used to evaluate ecosystem function and performance and the success of specific management actions implemented across the various Management Domains.

The strategic objective of the monitoring is to obtain assurance that WCPL's biodiversity management program is ensuring the Mine's rehabilitation is progressing towards its Completion Criteria.

WCPL's monitoring program includes recognised methods to assess native vegetation and habitat complexity (BioMetric), landscape stability (LFA), and faunal diversity. Using both Biometric and LFA assessment methods will enable assessment of overall rehabilitation success in terms of sustainable ecosystems in addition to self-sustaining stable landforms.

WCPL will also develop an annual works program based on the results of the annual monitoring which will be detailed in the Annual Review.

Vegetation Monitoring (Biometric)

The BioMetric assessment method has been adopted for the purposes of measuring and comparing native vegetation and habitat complexity against the quantitative, performance and completion established. The BioMetric methodology is a standardised, repeatable and recognised approach to biodiversity assessment in NSW.

The BioMetric monitoring will be implemented across Local BVT Reference Sites and on Rehabilitated areas to define vegetation community assemblages and development.

WCPL have implemented a BioMetric assessment process and have undertaken a rapid assessment process to determine the most likely and suitable monitoring locations which will incorporate Local Benchmark sites upon approval from BCD (refer to the BMP). Monitoring locations have been selected based on their representativeness as either reference or treatment sites. Treatment sites, being those selected from the various management domains across the Mine. A number of these treatment sites will be located in the riparian zones of Wilpinjong and Cumbo Creeks. As required, WCPL will refine the monitoring sites of BioMetric monitoring, which include:

- BioMetric plots, comprising a 20m x 20m flora plot nested within a larger 20m x 50m (1000m^2) habitat complexity plot will be established at each monitoring site. The long axis of the transect will be positioned perpendicular to the slope for compatibility with other monitoring methods (i.e. LFA). Each end of the 50m transect will be permanently identified for repeatability. A photograph will be taken at 1.5m intervals down the central 50m transect.
- Flora plots (20m x 20m) will be used to systematically collect floristic data. Only Native Plant Species Richness (NSR) data is collected in each flora plot. The flora plot is to coincide with the origin of the central 50m transect with measurements occurring along the 0-20 section and 10 metres either side of the central transect. NSR data will be collected along the transect, in accordance with the methodology described in Gibbons et al 2009.
- Habitat complexity plots (1000m^2), consistent with those used to assess vegetation condition and habitat under the NSW BioBanking Scheme, will be used to sample all vegetation structure and habitat features including Exotic Plant Cover (EC). Data will be collected for all site attributes in the habitat complexity plot, with the exception of NSR (which will be collected in the flora plots), in accordance with the methodology described in Gibbons et al 2009.

Landscape Stability

Landscape Function Analysis (LFA) will be adopted as the primary monitoring methodology to assess the landscape stability of regeneration and rehabilitation areas across the Mine. WCPL have undertaken a rapid assessment process to determine the most likely and suitable LFA monitoring locations.

Data relating to the eleven LFA SSCIs will be collected along the 50m transect established within the BioMetric plots to ensure consistency and repeatability of monitoring data. LFA monitoring will be undertaken in accordance with the methodology described in Tongway & Hindley 2004.

WCPL currently utilise LFA as the methodology to assess the landscape stability of regeneration and rehabilitation areas across the Mine. WCPL are considering an alternative method in conjunction with LFA monitoring, to assess germination and landform stability following site preparation.

This alternate method includes a combination of remote sensing and field-based assessments. Remote sensing to determine landform stability, slope, erosion and germination success using drone and/or LIDAR. This data will then be used to identify target areas for field assessment which will involve the following methods:

- 50 m x 20 m BioMetric Plot: abundance, distribution and species (where identifiable) of native overstorey and midstorey germinants. Percent covers of litter, bare soil, rock, cryptogam and vegetation; and
- 50 m erosion transect to record slope, erosion – type, width, depth, position (distance from start) and rate along the transect using the following categories:
    - 1 – no erosion
    - 2 – sheet erosion
    - 3 – rill erosion < 0.3 m deep
    - 4 – gully erosion > 0.3 m, < 1 m deep
    - 5 – gully

Photographs will be taken along the transect from the start location with the end location visible and from the end location with the start location visible. WCPL plan to trial this method with the monitoring outcomes provided in the Annual Review in conjunction with the annual results from the existing rehabilitation monitoring.

Fauna Monitoring

Fauna monitoring will be used to qualitatively validate BioMetric and LFA monitoring results (i.e. self-sustaining stable landforms and vegetation structure have been successfully recreated or reintroduced and are being inhabited or frequented by local fauna).

Terrestrial fauna surveys will be conducted to sample fauna species diversity and abundance in each Management Domain. Systematic surveys will monitor amphibians, reptiles, birds and mammals (including bats) at a selection of representative sites already established for Biometric monitoring.

Corresponding survey sites will also be established in areas of equivalent habitat type adjacent to the Management Domains to provide reference sites. Reference sites will provide comparative data so that the long-term progress of the Management Domains can be determined.

- Each fauna monitoring site will be surveyed on three occasions for the presence of bird species. Observers will spend 10 minutes recording all birds seen and heard within a 50 m radius (0.8 ha) of a central point, followed by a further 10 minutes searching the balance of a 2 ha plot. The total numbers of birds observed (heard and seen) will be recorded during a 20 minute sampling period. Birds observed outside of the formal survey time, or off the 2 ha sampling plot, will also be recorded as present however these observations will not be used in subsequent analyses.

- Bat monitoring will be undertaken at selected Biometric monitoring sites using Anabat Bat Detectors. Monitors will be established at each site for one night to record any bat calls. Bat calls will be analysed by a suitably qualified and experienced ecologist.

Ground fauna (amphibians, mammals and reptiles)

WCPL will undertake monitoring for amphibians, mammals and reptiles across Local BVT Reference Sites and Rehabilitation areas. Ground fauna monitoring will utilise a number of survey techniques in an attempt to capture various fauna species (such as amphibians, mammals and reptiles). Survey mechanisms will be selected to target potentially occurring species based on the presence of potential habitat and nearby records. WCPL proposes to only commence monitoring in the Rehabilitation Areas after 5 years from rehabilitation establishment.

Bats

Through previous monitoring programs, WCPL maintains a representative data set of bat assemblages of the local area. WCPL proposes to conduct Bat monitoring within the Rehabilitation areas as the rehabilitation matures, commencing 5-10 years after landform establishment. Monitoring for Bats prior to Rehabilitation maturity and function will only provide presence absence data of bats utilising the areas as foraging grounds and not indicative of habitation.

Bat monitoring will be undertaken at selected BioMetric monitoring sites (**Section 9.5**) using Anabat Detectors. Monitors will be established at each site for one night to record any bat calls. Bat calls will be analysed by a suitably qualified and experienced ecologist.

In addition to the BioMetric monitoring sites, video monitoring at the entrance of the adit to record if bats leave the adit as a result of blasting will be conducted in accordance with WCPL's Blast Management Plan. The use of video recording will continue for such time as there is no evidence to suggest that blasting causes a measurable disruption to the bats using the adit as a roosting site.

Management measures for the Eastern Bentwing-bat are detailed in **Section 7.5**.

Monitoring of Unexplained Vegetation Dieback

WCPL will undertake monitoring of any areas of unexplained vegetation dieback within the ECAs, Rehabilitation Areas and Regeneration Areas as part of the annual monitoring of these areas (**Section 9**) to identify whether *Phytophthora cinnamomi* caused the dieback to occur.

The monitoring of unexplained dieback will focus on identifying the known signs of *Phytophthora cinnamomi* infection, including (DotE, 2014):

- Plants become visibly diseased;
- Signs of water-stress (roots are a primary site of infection and therefore uptake of water is one of the first functions affected);
- Crown decline symptoms;
- Leaf yellowing and death of primary leaf-bearing branches;
- Epicormic branches with smaller leaves; and
- Areas of necrosis, bark at the base of trees just above or below the soil.

Should the above symptoms be identified in areas of unexplained dieback, WCPL will consult with local experts to confirm whether *Phytophthora cinnamomi* is present. If *Phytophthora cinnamomi* is confirmed the actions outlined in **Section 10.1** will be implemented

8.1 Analogue Site Baseline Monitoring

Local BVT Reference Sites specific to the BVTs are listed in Table 12 and Table 18 of the BMP, they were established in 2020 and endorsed by BCD in January 2021. Preference for Local BVT Reference Sites compared to the adoption and use of BCD's BVT Benchmark sites is preferred as local sites more accurately reflect local conditions and local specific targets.

These Local BVT Reference Sites will be used to compare the performance and progression of mining rehabilitation to local benchmark status.

The strategic objective of the monitoring is to obtain assurance that WCPL's biodiversity management program is ensuring the Mine's rehabilitation is progressing towards its Completion Criteria.

8.2 Rehabilitation Establishment Monitoring

Monitoring results will be collated after each monitoring round and compared against the Completion Criteria and Performance Targets. If monitoring results show that targets are not being met, the Trigger Action Response Plans (TARPs) in **Section 10** will be implemented. The results from the monitoring program will be reported as outlined in **Section 11.3**.

All monitoring results are managed by the ECM and/or Environmental Representative within the document control system and maintained at the Mine for at least four years after the monitoring or event to which they relate took place. All records are kept in a legible form, or in a form that can readily be reduced to a legible form.

8.3 Measuring Performance Against Rehabilitation Objectives and Rehabilitation Completion Criteria

A summary of WCPL's Biodiversity Monitoring Program is provided in the BMP. Annual monitoring of established biometric monitoring plots will be completed during Autumn and Spring. Annual monitoring of established LFA monitoring sites will be completed in Spring. WCPL will monitor the performance of rehabilitation by conducting the following monitoring as outlined:

- Year 1 to 10 Landform Function Analysis (LFA) and drone/aerial surveillance for any material areas of vegetation establishment failure;
- Years 3-4 Single FBA plot in each BVT (randomly selected); and
- Years 5-9 FBA plots required in accordance with vegetation zone size.

This approach is to provide for the early detection of any material areas of rehabilitation failure, track progress against the Performance and Completion Criteria and allow for the implementation of corrective measures (**Section 10**).

8.3.1 Rehabilitation BioMetric Performance Criteria

Performance Criteria applies to rehabilitation domains which have been established and rehabilitated 10 years post landform establishment. Performance Criteria is to show that progress is being made towards the Completion Criteria and has been developed on the basis of approximately 50% of a minimum Completion Criteria or up to two times a maximum Completion Criteria.

The BMP presents the approved Performance Criteria for mine rehabilitation at 10 years after landform establishment. With respect to the Regent Honeyeater habitat the relevant criteria is suitable progress against the Native Over-Storey Performance Criteria.

The site attribute values for each FBA plot will be averaged in order to determine the site value if a vegetation zone and the average Overall Site Value Score should be equal to or greater than **7** based on *Generating biodiversity credits for ecological rehabilitation of previously mined land* (OEH, 2015)

8.3.2 Rehabilitation Biometric Completion Criteria

Achieving Benchmark and Local Benchmark conditions for the specific rehabilitation BVTs across the mine represents the ultimate management target. However, such completion criteria is considered unrealistic for the management period as the timeframe is insufficient for the development of habitat features such as tree hollows (which require 120 years or more) in the absence of nesting boxes.

A lesser target that demonstrates capacity for passive improvement towards benchmark condition is considered a more suitable and feasible context for establishing performance targets and completion criteria in degraded landscapes. The approved Completion Criteria has been set in accordance with Section 12.2 of the FBA (OEH, 2014a) and in consultation with OEH, DAWE and DPIE.

The BMP presents the approved Completion Criteria for mine rehabilitation at 10 years after the completion of mining. With respect to the establishment of Regent Honeyeater habitat BVTs, the relevant criteria for 10 years after completion of mining is suitable progress against the Native Over-Storey and Regeneration Criteria.

Site attribute values for each FBA plot will be averaged in order to determine the site value of a vegetation zone and the Overall Site Value Score should be equal to or greater than **17** based on *Generating biodiversity credits for ecological rehabilitation of previously mined land* (OEH, 2015).

9.0 Rehabilitation Research, Modelling and Trials

9.1 Current Rehabilitation Research, Modelling and Trials

a) Ozothamnus tesselatus

Three populations of *Ozothamnus tesselatus* (equating to a direct count of 1,090 plants) were found within the Project open cut extension and infrastructure areas during the Hunter Eco (2015) surveys of the WEP.

Seeds of the threatened *Ozothamnus tesselatus* will be collected and propagated for use in the rehabilitation and Regeneration Areas. Seeds from *Ozothamnus tesselatus* will be collected during November (or other relevant times that seed is available) from the known populations within the open cut extension and infrastructure areas and throughout the BOAs (where the species is also known to occur).

Propagation will be undertaken by WCPL in germination trays with various soils and treatments. As this species produces thistle-type seeds, tube stock is anticipated to be the most appropriate method for propagation. WCPL may contact suitable third-party nursery providers to assist with the propagation trials. The three-year management targets for the propagation of *Ozothamnus tesselatus* is detailed in the BMP.

b) Drone Seeding Trial

WCPL is undertaking a trial to establish its required native vegetation community through aerial application of native seed using unmanned aerial vehicles (UAV) (drones). The trial will investigate the benefits of using up to date technology in drones to direct seed a site set aside and prepared for revegetation and the benefits that surround this.

The aim of this trial is to prove the ability of this emerging technology to provide a quality product in the way of native seeding while limiting waste in seed use and costs. At the same time the trial will assess if improvements in revegetation through the ability to overfly and apply targeted ameliorants and supplementary seeding where required without the need for large equipment.

This will also provide safety improvements through limiting manual or mechanical site traversals on areas where the terrain is too steep, or sculpted through micro-relief practices, for machinery or people to safely access the site.

The trial outcomes will also speak to the ability to scale up or down the size of rehabilitation areas where necessary. This gives the flexibility to take advantage of windows of opportunity through climate and mine planning, rather than have to wait for the cost benefits to be justified of using larger scale broadacre methods. This can therefore provide a more rapid solution around the issues of weed intrusion, erosion and dust production that comes with land prepared and waiting for works to be undertaken.

9.2 Future Rehabilitation Research, Modelling and Trials

a) Regent Honey Eater Habitat Trial

In accordance with Schedule 3, Condition 36 of the Development Consent, WCPL will create Regent Honeyeater habitat within existing mine rehabilitation areas where rehabilitation previously had focussed on the establishment of a mix of open woodland and pasture areas for grazing, as required by the former PA05-0021.

In these areas, WCPL will commence control of non-native species and re-seeding to a combination of suitable native plant species as a rehabilitation priority. Local benchmark sites (as opposed to regional benchmark data) will be used to satisfy Schedule 3, Condition 37 of the Development Consent.

These pasture areas are already at final landform levels, are typically gently sloping, have been topsoiled and are still accessible to mobile equipment or farm machinery without new clearing. Subject to climatic conditions, this may offer an opportunity to prioritise the staged trial establishment of Regent

Honeyeater habitat associated with the Mine. In parallel, WCPL will conduct re-evaluation of the previous woodland revegetation areas against contemporary BVT classifications. The results of the re-evaluation will assist WCPL in identifying any remedial actions that would need to be implemented in order to establish Regent Honeyeater habitat within these areas.

b) Ozothamnus tesselatus

Three populations of *Ozothamnus tesselatus* (equating to a direct count of 1,090 plants) were found within the Project open cut extension and infrastructure areas during the Hunter Eco (2015) surveys of the WEP.

Seeds of the threatened *Ozothamnus tesselatus* will be collected and propagated for use in the rehabilitation and Regeneration Areas. Seeds from *Ozothamnus tesselatus* will be collected during November (or other relevant times that seed is available) from the known populations within the open cut extension and infrastructure areas and throughout the biodiversity offset areas (BOAs) (where the species is also known to occur).

Propagation will be undertaken by WCPL in germination trays with various soils and treatments. As this species produces thistle-type seeds, tube stock is anticipated to be the most appropriate method for propagation. WCPL may contact suitable third-party nursery providers to assist with the propagation trials. The three-year management targets for the propagation of *Ozothamnus tesselatus* is detailed in the BMP.

c) Drone Seeding Trial

WCPL is undertaking a trial to establish its required native vegetation community through aerial application of native seed using unmanned aerial vehicles (UAV) (drones). The trial will investigate the benefits of using up to date technology in drones to direct seed a site set aside and prepared for revegetation and the benefits that surround this.

The aim of this trial is to prove the ability of this emerging technology to provide a quality product in the way of native seeding while limiting waste in seed use and costs. At the same time the trial will assess if improvements in revegetation through the ability to overfly and apply targeted ameliorants and supplementary seeding where required without the need for large equipment.

This will also provide safety improvements through limiting manual or mechanical site traversals on areas where the terrain is too steep, or sculpted through micro-relief practices, for machinery or people to safely access the site.

The trial outcomes will also speak to the ability to scale up or down the size of rehabilitation areas where necessary. This gives the flexibility to take advantage of windows of opportunity through climate and mine planning, rather than have to wait for the cost benefits to be justified of using larger scale broadacre methods. This can therefore provide a more rapid solution around the issues of weed intrusion, erosion and dust production that comes with land prepared and waiting for works to be undertaken.

d) Topsoil Amelioration Trial

The use of organic soil ameliorants such as vermicast, organic liquid fertilisers and composts are being trialled at WCPL to promote microbial activity within the site's placed topsoil and topsoil stockpiles. Various application methods and rates are to be trialled to determine efficiencies and also enhance soil stability and aggregation via microbial and plant exudates. With the addition of various organic soil ameliorants, this allows the inclusion of major and minor nutrients and compounds to the soil organism rather than typical synthetic fertilisers which typically provide large ratios of Nitrogen, Phosphate and Potassium (NPK).

10.0 Intervention and Adaptive Management

The rehabilitation monitoring program provided in **Section 8** will be used to evaluate ecosystem function and performance and the success of specific management actions implemented across the various Management Domains. The strategic objective of the monitoring is to obtain assurance that WCPL's biodiversity management program is ensuring the Mine's rehabilitation is progressing towards its Completion Criteria.

WCPL have prepared a Trigger Action Response Plan (TARP) (**Table 12**) for rehabilitation to identify appropriate response measures in the event the following key rehabilitation outcomes are not achieved.

Table 10 Rehabilitation Trigger Action Reponse Plan

Rehabilitation Category	Key Element	Trigger/ Response	1st Level Trigger	2nd Level Trigger
Landform stability	Landform design	Trigger	Inspections and survey of backfilled rehabilitation landforms under construction indicate landforms at risk of not integrating with surrounding natural landforms.	Inspections and survey of backfilled rehabilitation landforms under construction are not integrating with surrounding natural landforms.
		Response	Seek advice from landform design consultant and implement recommendations to ensure backfilled rehabilitation landforms under construction integrate with surrounding natural landforms.	Undertake a complete review of the landform design with landform design consultant and undertake all necessary remediation activities to ensure backfilled rehabilitation landforms integrate with surrounding natural landforms.
	Slope gradient	Trigger	Backfilled rehabilitation landform gradients approaching 10^0 or 17%.	Backfilled rehabilitation landform gradients exceeding 10^0 or 17%.
		Response	Continue to monitor and ensure backfilled rehabilitation landforms under construction have gradients <10^0 or 17%*. Implement recommendations from landform design consultant as required. Notes:* Landforms that is designed to be greater than 17% in consultation with the relevant government department.	Undertake a complete review of the landform design with landform design consultant and undertake all necessary remediation activities to ensure backfilled rehabilitation landforms have gradients <10^0 or 17%. If backfilled rehabilitation landforms cannot achieve gradients <10^0 or 17%, commence consultation with the Secretary in accordance with SSD-6764.

Rehabilitation Category	Key Element	Trigger/ Response	1st Level Trigger	2nd Level Trigger
Landform stability	Drainage	Trigger	Not all drainage lines within the final landform have been generally constructed in accordance with the approved final landform design and restored in accordance with the principles, concepts and techniques described in this RMP for rehabilitating streams.	Drainage lines within the final landform have not been constructed generally in accordance with the approved final landform design and restored in accordance with the principles, concepts and techniques described.
		Response	Seek advice from hydrological and ecological specialists and implement recommendations to rectify those drainage lines not satisfying the principles, concepts and techniques described in this RMP for rehabilitating streams.	Undertake a complete review of the drainage design with hydrological and ecological specialists and undertake all necessary remediation activities to ensure the principles, concepts and techniques described in this RMP for rehabilitating streams are achieved.
	Erosion	Trigger	Ground vegetation is approaching 70%. Erosion riling is approaching <0.3m (w). Minor gully erosion identified.	Ground vegetation significantly <70%. Erosion riling is >0.3m (w). Gully erosion identified.
		Response	Continue to monitor and if necessary, implement remediation activities to increase ground cover and reduce erosion impacts.	Undertake a complete review of the drainage design and undertake all necessary remediation activities to repair erosion and establish appropriate groundcover as soon as practicable.
	LFA	Trigger	Approaching 5% annual improvement in LFA score from previous monitoring round.	<5% annual improvement or significant decline in LFA score from previous monitoring round.
		Response	Check and validate the data to ensure correct/accurate. Review individual SSCI and LFA Index results to determine which SSCI or index result is contributing to the lower than expected score. Review management actions undertaken during previous 12 months to determine if actions have contributed to the lower than expected score. Review previous monitoring scores and climatic conditions to establish whether external factors could be contributing to the lower than expected score.	Develop remedial actions to address stagnant or declining landscape stability, if stagnant or declining score not caused by external factors. Maintain monitoring of affected site until first LFA score ≥ 50 (i.e. stable landform). Review monitoring program and consider expanding to include additional treatment and reference sites.

Rehabilitation Category	Key Element	Trigger/ Response	1st Level Trigger	2nd Level Trigger
Water quality	Water quality monitoring	Trigger	Runoff water quality from drainage lines constructed through final landform rehabilitated areas are approaching performance criteria limits for either pH, EC, turbidity, sulphate and selected metals (Pb, Se, As and Mo) as provided in the SWMP.	Runoff water quality from drainage lines constructed through final landform rehabilitated areas have exceeded one or more of the performance criteria limits for either pH, EC, turbidity, sulphate and selected metals (Pb, Se, As and Mo) as provided in the SWMP.
		Response	Continue to monitor runoff water quality and undertake preliminary investigations in consultation with surface water specialist. Implement any necessary remedial measures where required.	Report exceedances of the water quality performance criteria in accordance with statutory reporting requirements, including PIRMP and SSD-6764. Continue to monitor runoff water quality and undertake detailed investigations in consultation with surface water specialist to determine causation. Implement any necessary remedial measures where required as soon as practicable
	Potential acid forming material (PAF)	Trigger	Water quality testing for the presence of PAF and/or sodic materials (**Section 6.1.1**) identifies a potential source of PAF material from either overburden and/or interburden, and/or coal rejects emplacement, for example.	Further investigations have confirmed the source and location of the PAF material from either overburden and interburden, and coal rejects, for example.
		Response	WCPL to commence further investigations to confirm and identify the source of the potential PAF material.	WCPL to implement appropriate course of action which may include one or more of the following: Review and increase as required the volume of NAF waste rock within the back-filled mine voids during co-disposal with the coarse rejects. Waste emplacement areas may need to have layers of alkali material (i.e. crushed limestone, agricultural lime) added to the surface for buffering. Increase testing to confirm the appropriate course of actions implemented has been successful.

Rehabilitation Category	Key Element	Trigger/ Response	1st Level Trigger	2nd Level Trigger
Spontaneous combustion	Spontaneous combustion outbreaks	Trigger	Signs of minor spontaneous combustion outbreaks identified within rehabilitated landform areas.	Signs of significant spontaneous combustion outbreaks identified within rehabilitated areas considered final landform.
		Response	Implement corrective actions to either cap or remove affected material from the final landform. Inert material will be placed over the affected area, compacted and shaped consistent with the surrounding landforms and drainage requirements. Maintain monitoring until no signs of spontaneous combustion are detected.	Report in accordance with statutory reporting requirements, including PIRMP and SSD-6764 if significant spontaneous combustion outbreaks have the potential to cause or pose a threat to the environment. Implement corrective actions to either cap or remove affected material from the final landform. Inert material will be placed over the affected area, compacted and shaped consistent with the surrounding landforms and drainage requirements. Review procedure for material handling. Increase inspections and use of thermal imagery to ensure outbreak has been containment and removed

Rehabilitation Category	Key Element	Trigger/ Response	1st Level Trigger	2nd Level Trigger
Rehabilitation resources	Topsoil volume	Trigger	Topsoil balance indicates a potential deficiency in topsoil available for rehabilitation over the LOM.	Topsoil balance confirms a deficiency in topsoil available for rehabilitation over the LOM.
		Response	Check and validate the volumes of topsoil stockpiled to ensure correct and accurate. Check and validate forecast strip volumes to determine if current topsoils deficiencies will be corrected. Review the procedures for topsoil removal and salvage. Review the requirements within the GDP regarding nominated correct spoil stripping depths.	Increase topsoil stripping depths to nominated depths upon further soil assessments Review potential to remove subsoils upon confirmation of soil assessments to increase soil balance volumes If LOM topsoil volumes cannot be achieved, commence investigations to introduce topsoil substitutes from off site sources and include additional costs in budget forecasting.
	Topsoil quality	Trigger	Results from representative sampling of topsoil for material characterisation are potentially outside one or more of the following parameters: • ECe <4dS/m, • pH 5.0 to 8.9, • CEC 3 to 5meq/100g; and • ESP <6%	Results from representative sampling of topsoil for material characterisation are outside one or more of the following parameters: • ECe <4dS/m, • pH 5.0 to 8.9, • CEC 3 to 5meq/100g; and • ESP <6%
		Response	• Seek advice from WCPL rehabilitation specialist • If required, application of appropriate soil ameliorants at rates per hectare as specified by laboratory results and WCPL rehabilitation specialist • Undertake further investigations and testing to determine potential contributing factors.	• Undertake Level 1 Responses; • If the application of ameliorants and further testing reveals results from representative sampling of topsoil for material characterisation remain outside of the optimal parameters, remove unsuitable topsoil material and replace with suitable topsoil material within optimal chemical range.

Rehabilitation Category	Key Element	Trigger/ Response	1st Level Trigger	2nd Level Trigger
Native vegetation	Vegetation monitoring	Trigger	Interim Performance Criteria Target site value scores <7 for vegetation <10 years of age	Completion Criteria Target site value scores <17 for vegetation >10 years of age
		Response	Check and validate the data to ensure correct/accurate. Review site attribute scores to determine which attributes are contributing to the lower than expected score. Review management actions undertaken during previous 12 months (applicable to 'Establishment and Interim Period) to determine if actions have contributed to the lower than expected score. Review previous monitoring scores and climatic conditions to establish whether external factors could be contributing to the lower than expected score Treat surface as if in the 'establishment period' and 'interim period'. Use management actions to improve condition. Refer to LFA results to determine if there are other causal factors. Increase management effort to address identified lagging site attribute score. Expand monitoring program to include additional treatment and reference sites. Site value score declines from expected performance target range to a preceding range: Analyse data for potential reasons for decline.	Check and validate the data to ensure correct/accurate. Review site attribute scores to determine which attributes are contributing to the lower than expected score. Review management actions undertaken during previous 12 months (applicable to 'Establishment and Interim Period) to determine if actions have contributed to the lower than expected score. Review previous monitoring scores and climatic conditions to establish whether external factors could be contributing to the lower than expected score Review monitoring data against management actions applicable to the 'Performance Period'. Increase management effort to address identified lagging site attribute score and to ensure Site Value Score is tracking towards Performance and/or Completion Criteria Target Maintain monitoring until first site value score >16.
			Develop remedial actions to address declining biodiversity values. Review LFA monitoring to examine for potential casual factors or start LFA monitoring if landform instability is detected. Expand monitoring program to include additional treatment and reference sites	

11.0 Review, Revision and Implementation

Reviews of the RMP will be undertaken by Environment and Community Manager, Mine Manager and Technical Services Manager as required, to assess the effectiveness of the procedures against the objectives of RMP.

The RMP may also be reviewed, and if necessary amended, for example, to incorporate future modifications of Development Consent (SSD-6764) and any proposed activities that are not in accordance with the RMP.

In addition, this RMP will be reviewed within three months of the submission of:

a) the Annual Review;

b) a related incident report;

c) an Independent Environmental Audit; and

d) any modification to the Development Consent relating to this RMP;

e) or at the direction of the Secretary.

Where amendments to this RMP are made as a result of the review process as described above, WCPL will submit the revised RMP to the DPIE for approval within four weeks, unless otherwise agreed with the Secretary.

The RMP may also be reviewed and revised due to changes in environmental requirements, risk assessments, monitoring results, completion criteria, technologies, legislation and short and long term rehabilitation schedules.

As required by the amendment to *Mining Amendment Regulation 2021* Clause 11, Schedule 8A, 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.

Any proposed amendment to the RMP would be completed in accordance with the RMP Guidelines and in consultation with the DPIE-RR and other relevant stakeholders.

The General Manager and the Mine Manager will ensure appropriate resources are provided to implement the RMP. The implementation of this RMP will be the responsibility of the Environment and Community Manager and Technical Services Manager.

11.1 Implementation

Table 13 identifies the applicable WCPL personnel who are responsible for the monitoring, review and implementation of this RMP.

Table 11 Management Plan Roles and Responsibilities

Responsibility	Task
General Manager (GM)	Authorise this RMP
	Ensure that adequate financial resources are available to effectively implement requirements of this RMP
Mine Manager (MM)	As required, undertake reviews of the RMP to assess the effectiveness of the procedures against the objectives of RMP.
Technical Services Manager (TSM)	As required, undertake reviews of the RMP to assess the effectiveness of the procedures against the objectives of RMP. Provide appropriate skilled and trained personnel, resources and support to implement the RMP. Implement the procedures referenced in this RMP. Develop mine plans to allow for progressive rehabilitation of mined land in accordance with the Rehabilitation Strategy.
Environment and Community Manager (ECM) or delegate	Ensure that all regulatory reporting is undertaken in relation to this RMP.
	Coordinate relevant reviews of this RMP in accordance with Part 11 of this RMP.
	Implement intervention and adaption management as required with Part 10 of this RMP.
	Ensure monitoring is undertaken in accordance Part 8 of this RMP.
	Review the performance of the monitoring program and effectiveness of this RMP.
	Ensure all relevant employees and contractors receive adequate training and awareness in the implementation of this RMP.
	Receive and respond to community complaints
	Prepare all statutory reports relating to this RMP as outlined in Part 11.
	Conduct regular inspections of the site to monitor compliance with this RMP.
	Implement the rehabilitation activities as outlined by this RMP.
	Support and assist Environmental Department in the implementation of this Management Plan
	Provide feedback on the adequacy and effectiveness of this plan
Senior Leadership Team and Supervisors	Report any incidents or complaints immediately to the Environmental Department
	Ensure the implementation of this RMP with respect to their specific work practices and skills.
	Act in accordance with the management procedures or protocols outlined in this EMP
Employees and contractors	Ensure any potential or actual issues, including environmental incidents, are reported to their immediate supervisor

11.2 Reporting

At the end of March each year, WCPL will review the environmental performance of the Mine and submit an Annual Review[13] report to the DPIE and other relevant government agencies. This report will:

a) describe the development (including any rehabilitation) that was carried out in the past year, and the development that is proposed to be carried out over the next year;

b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the:

- Relevant statutory requirements, limits or performance measures/criteria;

[13] The Rehabilitation Report will be contained in the Annual Review formally known as the Annual Environmental Management Report. The Rehabilitation Report will be prepared in accordance with www.resourcesandenergy.nsw.gov.au/miners-andexplorers/rules-and-forms/pgf/environmental-guidelines

- Monitoring results of previous years; and
- Relevant predictions in the EA;

c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;

d) identify any trends in the monitoring data over the life of the project;

e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and

f) describe what measures will be implemented over the next year to improve the environmental performance of the project.

Specifically, the Annual Review will include a summary report on the Biodiversity Offset requirements and progress against the 3-year Management Schedule.

The Annual Review containing a summary of the performance of the MOP will be made publicly available on the WCPL website (https://www.peabodyenergy.com/Operations/Australia-Mining/New-South-Wales-Mining/Wilpinjong-Mine) as required by Condition 9, Schedule 5 of Development Consent SSD-6764.

Table 14 provides a summary of the reporting mechanisms applicable to the WCPL, including which stakeholders will receive copies of each report and distribution.

Table 12 Reporting Framework

Report	Frequency	Distribution	Responsibility for Report Preparation
Incident Report	Provide detailed report within 7 days of notification	• DPIE (Manager, Mining Projects) • NSW RR (Resource Regulator) • EPA (General Contact)	Environment and Community Manager
Annual Review (AR)	Annually (end of March each year)	• DPIE (Manager, Mining Projects) • NSW RR (Resource Regulator) • EPA (General Contact) • BCS (General Contact) • Water Group (General Contact) • Mid-Western Regional Council (General Manager) • CCC Members	Environment and Community Manager

11.3 References

Development Consent (SSD-6764)

Mining Operations Plan (MOP) 2021-2022

Wilpinjong Extension Project (WEP) – Environment Impact Assessment (2016)

Wilpinjong Coal Pty Limited (Version 7.1) Biodiversity Management Plan (BMP)

Wilpinjong Coal Pty Limited (Version 6.1) Noise Management Plan (NMP)

Wilpinjong Coal Pty Limited (Version 8.1) Blast Management Plan (BMgtP)

Wilpinjong Coal Pty Limited (Version 7.1) Air Quality Management Plan (AQMP)

Wilpinjong Coal Pty Limited (Version 6) Water Management Plan (WMP)

Wilpinjong Coal Pty Limited (Version 4) Surface Water Management Plan (SWMP)

Wilpinjong Coal Pty Limited (Version 4) Site Water Balance (SWB)

Wilpinjong Coal Pty Limited (Version 4) Groundwater Management Plan (GWMP)

Wilpinjong Coal Pty Limited (Version 8.1) Aboriginal Cultural Heritage Management Plan (ACHMP)

Mining Act 1992 NSW Mining Regulation 2021 Amendment (Standard Conditions of Mining Leases – Rehabilitation)

NSW Resources Regulator *Rehabilitation Management Plan for Large Mines (2021) Form and Way, and associated Guidelines and Factsheets*

Review of Soil Parameters for Post Mining Rehabilitation Criteria (June 2022), Minesoils Land & Rehabilitation Specialist

APPENDIX A

Land Ownership and Land Use

Table A-1 Schedule of Land Ownership

Tenure Type	Lot Number	Deposited Plan Number
Freehold	49	DP755454
Freehold	9	DP755454
Freehold	5	DP755454
Freehold	109	DP755454
Freehold	72	DP755454
Freehold	48	DP755454
Freehold	184	DP755425
Freehold	68	DP755454
Freehold	5	DP703225
Freehold	6	DP755454
Freehold	2	DP720305
Freehold	17	DP755454
Freehold	1	DP863585
Freehold	114	DP42127
Freehold	11	DP703223
Freehold	31	DP755454
Freehold	26	DP755454
Freehold	123	DP755425
Freehold	10	DP755454
Freehold	6	DP703225
Freehold	47	DP755454
Freehold	19	DP755454
Freehold	37	DP755454
Freehold	1	DP703224
Freehold	183	DP755425
Freehold	12	DP703223
Freehold	182	DP755425
Freehold	23	DP755454
Freehold	18	DP755454
Freehold	45	DP755454
Freehold	87	DP755425
Freehold	27	DP755454
Freehold	13	DP703223
Freehold	15	DP755454
Freehold	196	DP755425
Freehold	13	DP755454
Freehold	95	DP755425
Freehold	46	DP755454
Freehold	12	DP755454
Freehold	88	DP755425
Crown	91	DP755425
Freehold	1	DP112124
Freehold	90	DP755425
Freehold	122	DP755425
Freehold	24	DP755454
Freehold	124	DP755425
Freehold	3	DP755454

Tenure Type	Lot Number	Deposited Plan Number
Freehold	14	DP755454
Freehold	156	DP755425
Freehold	22	DP755454
Freehold	104	DP755454
Freehold	1	DP727117
Freehold	10	DP703223
Freehold	94	DP755425
Freehold	1	DP728756
Freehold	195	DP755425
Freehold	1	DP724617
Freehold	93	DP755425
Freehold	11	DP755454
Freehold	69	DP755454
Freehold	43	DP583255
Freehold	35	DP755454
Freehold	122	DP724655
Freehold	44	DP583255
Freehold	42	DP583255
Freehold	59	DP755454
Freehold	100	DP755454
Freehold	50	DP755454
Freehold	30	DP755454
Freehold	41	DP583255
Crown	123	DP724655
Freehold	92	DP755425
Crown	7302	DP1138926
Crown	115	DP42127
Freehold	3	DP583254
Freehold	71	DP755425
Freehold	55	DP755425
Freehold	56	DP755425
Freehold	4	DP122991
Freehold	6	DP250053
Freehold	58	DP755425
Freehold	125	DP755425
Freehold	139	DP755425
Freehold	34	DP755425
Freehold	187	DP755425
Freehold	57	DP755425
Freehold	146	DP755455
Freehold	141	DP755425
Freehold	7	DP122991
Freehold	116	DP755425
Freehold	54	DP755425
Freehold	11	DP122991
Freehold	5	DP122991
Freehold	149	DP755425

Tenure Type	Lot Number	Deposited Plan Number
Freehold	83	DP755425
Freehold	188	DP755425
Freehold	161	DP755425
Freehold	78	DP755425
Freehold	107	DP755425
Freehold	105	DP755425
Freehold	18	DP755425
Freehold	5	DP250053
Freehold	2	DP122991
Freehold	85	DP755455
Freehold	26	DP755425
Freehold	6	DP122991
Freehold	152	DP755425
Freehold	9	DP122991
Freehold	132	DP755425
Crown	233	DP723412
Freehold	79	DP755425
Freehold	138	DP755455
Freehold	160	DP723767
Freehold	14	DP755425
Freehold	3	DP122991
Freehold	53	DP755425
Freehold	7	DP250053
Freehold	40	DP755425
Freehold	151	DP755425
Freehold	8	DP122991
Freehold	153	DP755425
Freehold	4	DP250053
Freehold	1	DP431744
Freehold	150	DP755425
Freehold	106	DP755425
Freehold	13	DP755425
Freehold	3	DP250053
Freehold	49	DP755425
Freehold	157	DP755425
Freehold	80	DP755425
Freehold	148	DP755425
Freehold	25	DP755425
Freehold	52	DP755425
Freehold	76	DP755425
Freehold	27	DP755425
Freehold	10	DP122991
Freehold	2	DP250053
Freehold	46	DP755425
Freehold	50	DP755425
Freehold	75	DP755425
Freehold	9	DP755425

Tenure Type	Lot Number	Deposited Plan Number
Freehold	59	DP755425
Freehold	144	DP755425
Freehold	73	DP755455
Freehold	35	DP755425
Freehold	1	DP250053
Freehold	136	DP755425
Freehold	134	DP755425
Freehold	135	DP755425
Freehold	142	DP755425
Freehold	145	DP755425
Freehold	140	DP755425
Freehold	137	DP755425
Freehold	86	DP755455
Freehold	51	DP755455
Freehold	160	DP755425
Freehold	186	DP755425
Freehold	44	DP755425
Freehold	110	DP755454
Freehold	1	DP583254
Freehold	37	DP755425
Freehold	3	DP755425
Freehold	128	DP755425
Freehold	45	DP755425
Freehold	1	DP1078866
Crown	161	DP723767
Crown	147	DP755425
Crown	77	DP755425
Freehold	12	DP755425
Crown	234	DP723412
Crown	97	DP755425
Freehold	66	DP654143
Freehold	1	DP122991
Crown	235	DP723412
Freehold	70	DP755425
Crown	1	DP1139913
Freehold	140	DP755455
Crown	7318	DP1141391
Freehold	146	DP755425
Crown	7008	DP1095457
Freehold	143	DP755425
Freehold	69	DP755455
Freehold	89	DP755455
Freehold	138	DP755425
Freehold	52	DP755455
Crown	159	DP721237
Freehold	96	DP755455
Freehold	11	DP250053

Tenure Type	Lot Number	Deposited Plan Number
Freehold	94	DP755455
Freehold	12	DP250053
Crown	151	DP755455
Freehold	97	DP755455
Freehold	12	DP122991
Freehold	95	DP755455
Freehold	3	DP430668
Freehold	13	DP122991
Freehold	78	DP755455
Freehold	1	DP430668
Freehold	50	DP755455
Freehold	2	DP1071177
Freehold	4	DP755455
Freehold	116	DP755455
Freehold	10	DP250053
Freehold	57	DP755455
Freehold	2	DP430668
Freehold	59	DP755455
Freehold	133	DP755425
Freehold	194	DP755425
Freehold	237	DP724588
Freehold	130	DP755425
Freehold	158	DP755425
Freehold	8	DP755455
Crown	236	DP724588

Tenure Type	Lot Number	Deposited Plan Number
Crown	63	DP755455
Freehold	99	DP755455
Freehold	9	DP250053
Freehold	131	DP755425
Freehold	8	DP250053
Freehold	1	DP755455
Freehold	155	DP755425
Crown	158	DP721237
Crown	7304	DP1141384
Freehold	108	DP755425
Freehold	42	DP755425
Freehold	109	DP755425
Freehold	60	DP755425
Freehold	67	DP755454
Crown	52	DP755454
State Rail Authority (Crown)	Railway lands located between or adjacent to the above parcels of land	
Mid-Western Regional Council or Department of Lands (Crown)	Other roads located between or adjacent to the above parcels of land	
Crown	Creeks or streams located between or adjacent to the above parcels of land	

APPENDIX B

Regulatory Requirements for Rehabilitation

Table B-1 outlines the RMP conditions and other associated rehabilitation objectives and strategies as required by Development Consent (SSD-6764) and indicates where they addressed in the RMP.

Table B-1 Development Consent (SSD-6764) Requirements

Development Consent (SSD-6764) Rehabilitation Requirements	RMP Section	
Rehabilitation Objectives		
60. The Applicant must rehabilitate the site to the satisfaction of the Secretary. This rehabilitation must be consistent with the proposed rehabilitation strategy described in the EIS (and shown conceptually in Appendix 8) and comply with the objectives in Table 11.	This RMP Section 1.0	
Table 11: Rehabilitation Objectives		
Feature / ***Objective***		
Mine site (as a whole) • Safe, stable and non-polluting • Final landforms designed to incorporate micro-relief and integrate with surrounding natural landforms and adjacent mine rehabilitation • Final landforms maximise geotechnical performance, stability and hydrological function • Constructed landforms maximise surface water drainage to the natural environment (excluding final void catchments) • Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development • Minimise visual impact of final landforms as far as is reasonable and feasible	Section 2.2 Section 2.4.1 Section 4.1.1 Section 4.1.2 Section 6.2.3	
Final Voids • Minimise to the greatest extent practicable: ○ the size and depth of final voids ○ the drainage catchment of final voids ○ any high wall and low wall instability risk ○ risk of flood interaction for all flood events up to and including	Section 2.4.1 Section 4.1.1 Section 4.1.2 Section 6.1 Section 6.2.3 Section 4.1.1 Section 4.1.2	Section 4 and Appendix F
Surface infrastructure • To be decommissioned and removed, unless the Secretary agrees otherwise	Section 6.2.2	
Rehabilitation • Rehabilitate at least 2,856 hectares of self-sustaining woodland ecosystem to the BVTs specified in Tables 8 and 9; • Establish self-sustaining ecosystem function in areas of: ○ aquatic habitat, within diverted and/or re-established drainage lines and retained water features, with consideration of hydro- geomorphological constraints; ○ habitat for threatened flora and fauna species; and ○ habitat for flora and fauna species known to occur in the region.	Section 4.1.1 Section 4.1.2 Section 2.2 Section 2.4.1 Section 2.5 Section 6.1	
Cumbo Creek relocation Restored in accordance with conditions 26 to 28 of this Schedule.	Section 4.1.1 Section 6.1.3	
Other reinstated drainage lines Drainage lines are restored in accordance with the principles, concepts and techniques described in *"A rehabilitation manual for Australian streams (Rutherford, I; Jerie, K; Marsh, N 2000)*	Section 4.1.1 Section 4.1.2	
Community • Ensure public safety • Minimise the adverse socio-economic effects associated with mine closure	Section 4.1.1 Section 4.1.2	
Note: To avoid any doubt, the final landform in Pit 8 must not include a final void and must be consistent with the landform proposed in the Applicant's Response to the Planning Assessment Commission Review, dated February 2017, and shown conceptually in Appendix 8.		

Development Consent (SSD-6764) Rehabilitation Requirements	RMP Section
61. The Applicant must prepare a Rehabilitation Strategy for all land disturbed by the development to the satisfaction of the Planning Secretary. This strategy must: (a) be submitted for approval by 31 December 2024, or other timeframe agreed by the Secretary; (b) be prepared by a suitably qualified and experienced person/s whose appointment has been endorsed by the Planning Secretary; (c) be prepared in consultation with Water Group, BCS, Council, Resources Regulator and the CCC (d) be prepared in consultation with the proponent of the Moolarben Coal Mine, investigate options to integrate the final landform with the Moolarben Coal Mine, including options to integrate final voids and minimise the sterilisation of land post-mining; (e) build upon the Rehabilitation Objectives in Table 11, describe the overall rehabilitation outcomes for the site and address all aspects of rehabilitation including mine closure, final landform (including final void), post-mining land use/s and water management: (f) align with strategic rehabilitation and mine closure objectives and address the principles of the Strategic Framework for Mine Closure (ANZMEC and MCA, 2000); (g) describe how the rehabilitation measures would be integrated with the measures in the Biodiversity Management Plan referred to in condition 42 of this schedule; (h) describe how rehabilitation will be integrated with the mine planning process including a plan to address premature mine closure; (i) include an assessment of partially backfilling voids 2 and 6 above the groundwater equilibrium level having regard to the final void rehabilitation objectives in Table 11, including consideration of downstream water quality and the objectives in Table 6; (j) include a revised final landform plan which builds on the rehabilitation objectives in Table 11, including incorporation of micro-relief, landform stability, hydrological and ecological function; (k) include detailed justification for proposed changes to the final landform, having regard to the approved post-mining land use; (l) investigate opportunities to refine and improve the final landform and final void outcomes over time; (m) clearly identify the rehabilitation offset areas required under condition 36 of this Schedule including: areas required for the ecosystem and Regent Honeyeater species credits; areas generating different credits per hectare for Regent Honeyeater species credits; and BVT's proposed to generate the offset credits; (n) include a post-mining land use strategy to investigate and facilitate post-mining beneficial land uses for the site (including the final void), that: • align with regional and local strategic land use planning objectives and outcomes; • support a sustainable future for the local community; • utilise existing mining infrastructure, where practicable; and • avoid disturbing self-sustaining native ecosystems, where practicable; (o) investigate ways to minimise adverse socio-economic effects associated with rehabilitation and mine closure; and (p) include a program to periodically review and update this strategy at least every three years. Note: The strategy should build on the proposed rehabilitation strategy shown in Appendix 8.	Section 2.2 Section 2.4.1 Section 2.5 Section 2.5 Section 4.1.2 Section 6.1 Section 2.2 Section 2.5 Section 2.5
Progressive Rehabilitation 62. The Applicant must rehabilitate the site progressively as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies must be employed when areas prone to dust generation cannot 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. It is also accepted that delays in rehabilitation due to extended wet or dry conditions may occur.* 63. The Applicant must commence the ecosystem and land use establishment phase of rehabilitation for areas within 50 metres of the Munghorn Gap Nature Reserve, within 2 years of ceasing mining operations in those areas. *Note: It is accepted that some ancillary infrastructure would need to be retained for access and water management.*	Section 2.5 Section 6.1 Section 2.5 Section 6.1.1 Section 6.1.1 Section 6.1.5

Table B-1 Development Consent (SSD-6764) Requirements cont.

Development Consent (SSD-6764) Rehabilitation Requirements	RMP Section
Rehabilitation Management Plan 64. The Applicant must prepare a Rehabilitation Management Plan for the development, in accordance with the provisions under the Mining Act 1992.:	This RMP

APPENDIX C

Stakeholder Consultation

WILPINJONG COAL PTY LTD
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Peabody

30 October 2025

Chris Rudens
Principal Inspector Rehabilitation Tech
Resources Regulator

Via email: nswresourcesregulator@service-now.com

RE: Action Plan to Address Wilpinjong Coal Mine Landform Establishment TAP Findings (LETT0010275)

Dear Chris,

As you are aware, on 1 July 2025 a Landform Establishment Targeted Assessment Program (TAP) was conducted at the Wilpinjong Coal Mine. Following this assessment, the Resources Regulator requested that Wilpinjong Coal Pty Limited (WCPL) develop an Action Plan to address eleven (11) recommendations and submit it via nswresourcesregulator@service-now.com, citing reference LETT0010275, within eight weeks of the date of this letter (i.e. by 4 September 2025).

WCPL has prepared detailed responses to each of the eleven TAP recommendations, which are provided in **Attachment 1**. In particular, the Rehabilitation Risk Assessment has been updated and is now included as Appendix D of the updated Rehabilitation Management Plan (RMP).

The updated RMP is currently being finalised, with a scheduled completion date of 30 November 2025. Once complete, the document will be uploaded to WCPL's website: Wilpinjong Mine Approvals, Plans & Reports.

Please note that several TAP recommendations—specifically items #3, #4, #7, #8, and #11—require additional time to finalise and implement. These timelines are outlined in the Action Plan (Attachment 1). WCPL will update the RMP, as required, to reflect any applicable outcomes from these actions.
Should you have any further questions, please do not hesitate to contact me directly.

Regards,

Kieren Bennetts
Manager, Environment and Community
Peabody Australia

Mobile: +61 (0)488 103 807
kbennetts@peabodyenergy.com

ATTACHMENT 1:

NSW-RR Ref: ASMT0040440 / LETT0010275 – WCPL Action Plan

Wilpinjong Coal Mine Landform Establishment Targeted Assessment Program

NSW-RR Ref: ASMT0040440 / LETT0010275 Action (**Action Plan Due Date: 30 October 2025**)

TAP Ref ID#	TAP Recommendations	WCPL Responses	Completion Status/Comments
1	Update the Rehabilitation Risk Assessment so that any additional controls and actions are assigned to an appropriate person and dates to complete the action are also nominated.	WCPL have updated the Rehabilitation Risk Assessment accordingly in Section 3.0 and in Appendix E of the RMP.	Updates to the Risk Assessment completed on the 22 October 2025
2	Update the RMP to include the latest rehabilitation risk assessment undertaken in March 2025. Ensure the most recent RMP is uploaded to the mines website to meet Section 16(2) of Schedule 8a of the Mining Regulation.	As above. Updated RMP (now Version 3) uploaded to the Wilpinjong Coal Mine Website.	Updates to the RMP to include the revised risk assessment and reposted on the WCPL's website completed on the 30 November 2025
3	Implement a program of ongoing geochemical characterisation testing of materials incorporated into the rehabilitated landform. As recommended in the GEM assessment in 2015, this testing is required to verify the outer surface of emplacement areas (i.e. 5m depth) does not contain PAF material.	WCPL have updated the RMP to include operational sampling and geochemical testing for potential acid forming (PAF) material in Section 6.1.1(f), Section 7 and Section 10, in line with the recommendations from the 2015 WEP geochemistry assessment. WCPL have engaged Geo-Environmental Management Pty Ltd (GEM) to assist in developing a PAF testing program for overburden emplacement areas.	Updates to the RMP regarding operational sampling for PAF material and trigger/action responses, completed on the 22 October 2025 Procedure to be developed and implemented by 30 June 2026, in consultation with GEM, this will include updating the RMP accordingly.
4	Progress further characterisation and assessment of tailings materials as recommended in the "Preliminary Geochemical Characterisation of Tailings for Tailings Storage Facility TD6" undertaken by Golder and dated September 2020.	WCPL will engage a water specialist to assess the characterisation of tailings detailed in the Golder report and identify any shortfalls/further assessment required. Measures will be implemented based on the recommendations from the specialist.	Progress to investigations and final report from specialists by 30 June 2026. RMP to be updated regarding recommendations accordingly and summary of outcomes provided to NSW RR.
5	Provide a clear commitment for the sampling and testing requirements in the RMP to verify how the risk controls "soil chemistry testing is conducted" and "spontaneous combustion propensity testing (R70)" will be implemented.	RMP updated to included operational sampling and geochemical testing for PAF material (refer to item 3) RMP updated to include proposed R70 propensity testing for material characterisation (i.e. spontaneous combustion propensity) in Section 6.2.1(g) and Section 7.0 RMP updated to include periodic sampling and analysis of topsoil/ subsoil and across the surface of the final landform, prior to topsoil application in Section 6.2.4. .	Updates to the RMP regarding "soil chemistry testing is conducted" and "spontaneous combustion propensity testing (R70)" completed on the 22 October 2025. .

Wilpinjong Coal Mine Landform Establishment Targeted Assessment Program

NSW-RR Ref: ASMT0040440 / LETT0010275 Action (**Action Plan Due Date: 30 October 2025**)

TAP Ref ID#	TAP Recommendations	WCPL Responses	Completion Status/Comments
6	The placement (layering and compaction) of coarse reject to mitigate spontaneous combustion should be specifically called out as a risk control in the rehabilitation risk assessment and the process nominated in the RMP	The RMP updates included Risk Assessment (item 9) and Section 6.2.3. The placement of carbonaceous material is managed in dump design using material classification and dump design parameters. FSL dumps and minus 5 dumps to ensure carbonaceous material (rejects, Top of Coal waste) is adequately covered with competent material for rehabilitation.	Updates in the RMP to the placement and management of coarse reject completed on the 22 October 2025
7	Prepare the Final Void Management Plan to specifically address the definition and implementation of the risk controls nominated in the rehabilitation risk assessment of "factor of safety applied to designs" and "geotechnical analysis and design". This management plan should utilise slope stability analysis that allows comparisons of existing landforms against a criterion nominated for a long-term stable landform. The assessment should then nominate what remediation is required to achieve a long-term stable landform.	Stage 1: WCPL to engage SLR to develop and finalise a scope for the Final Void Management Plan for Pit 2 and Pit 6 by the end of 2025. Stage 2: Develop a Final Void Management Plan as required (refer to TAP Ref ID#7) by end of June 2026.	Stage 1: WCPL to engage SLR to develop and finalise a scope for the Final Void Management Plan for Pit 2 and Pit 6 by the end of 2025. Stage 2: Develop a Final Void Management Plan as required (refer to TAP Ref ID#7) by end of June 2026.
8	Develop a program to ensure quality control assurance measures are applied to the final landform design to address the "lack of clarity" and chain of custody issues identified in the WSP technical memorandum dated 22nd July 2025. This updated quality control assurance needs to be clearly articulated in updates to both the rehabilitation risk assessment as well as the RMP	WCPL will establish a Rehabilitation Verification Document to ensure all final landform designs are clearly confirmed and traceable. The process will include measures to differentiate between current and superseded designs, maintain chain of custody, and document quality control measures to be incorporated into both the rehabilitation risk assessment and RMP. Commenced in 2025 and then annually: Landform design revisions are currently being conducted by WSP, initially targeting all proposed rehabilitation areas within the Forward Way Program. Each design will be traced and marked as 'finalised' under the program, with an 'as-built' survey completed over each area once construction is finished. The program provides an ongoing framework to ensure all future designs are managed, reviewed, and auditable.	Verification will be done by Q2 2026

Wilpinjong Coal Mine Landform Establishment Targeted Assessment Program

NSW-RR Ref: ASMT0040440 / LETT0010275 Action (**Action Plan Due Date: 30 October 2025**)

TAP Ref ID#	TAP Recommendations	WCPL Responses	Completion Status/Comments
9	Update the RMP to provide further information on the monitoring and predicted long term settlement of TSF and how this has been allowed for in the final landform capping layer, as nominated in 6.1.3 (c) in the RMP	The RMP updates included Section 6.1.3 regarding landform settlement monitoring. Landform settlement monitors (high precision survey monitoring) with extensive surface tracking and alarm capabilities have recently been installed on WCPL's two most recently capped tailings dams (TD4 and TD5). The continued data collection will influence WCPL's capping strategy and determine appropriate allowance for settlement to meet landform design and RL requirements.	Updates to the RMP for settlement monitoring completed on the 22 October 2025
10	Review and update the number and naming of headings in the RMP so that these align with the Form and Way requirements for RMPs.	To be updated as part of the current RMP revision.	Updates to the RMP for naming and headings completed on the 22 October 2025
11	Review of rehabilitation and update rehabilitation phase to "ecosystem and land-use development" for areas which are deemed to meet this criteria.	WCPL worked with NSW RR in September 2025 to understand the detail regarding this requirement.	Spatial data to be updated accordingly into the NSW RR Mine Rehabilitation Portal by the 30 November 2025

Planning, Industry & Environment

Mr Kieren Bennetts
Manager, Environment and Community
Wilpinjong Coal Pty Ltd
1434 Ulan-Wollar Road
Wilpinjong, NSW, 2850

07/04/2021

Dear Mr Bennetts,

Wilpinjong Extension Project (SSD-6764)
Rehabilitation Management Plan

I refer to the Mining Operations Plan (Version 1.1, dated February 2021) which incorporates the Rehabilitation Management Plan required under Condition 64 of Schedule 3 of the consent for the Wilpinjong Extension Project (SSD-6764).

The Department has carefully reviewed the document and considers that the comments provided on the plan in January 2021 have been adequately addressed and the Mining Operations Plan (Version 1.1, dated February 2021) meets the requirements of the consent.

If you wish to discuss the matter further, please contact Callum Firth at callum.firth@dpie.nsw.gov.au.

Yours sincerely

Stephen O'Donoghue
Director
Resource Assessments

APPENDIX D

Risk Assessment

Ref ID	Risk / threat	Current Controls (must already be in place) Act, Object or System (CC) Signifies Critical Control if Fatal Risk	Risk evaluation * (with current control measures)			Proposed Additional Controls (if required) Current Controls and where addressed in the RMP as Applicable
			Maximum reasonable consequence	Likelihood	Risk	
General Rehabilitation						
1	Insufficient skills and experience of rehabilitation personnel leads to failure to achieve rehabilitation or closure criteria	RBI-04P.01 - Timing for access to rehabilitated lands achieves final land use goals RBI-05D.02 - Contractor Management, Plans and Processes includes check of skills and qualifications through onboarding process relevant to specific role or task RBI-05D.05 - Mine planning for progressive rehabilitation to minimise area for final rehabilitation Operational Support Team (OST) conduct rehabilitation and landform works Redundancy for key roles on site Guidelines and training material related to rehabilitation	1 Low	2 Unlikely		Additional Controls Not Required Section 6.0
2	Lack of clearly defined responsibilities leads to failure to achieve rehabilitation or closure criteria	RBI-05D.03 - Government rehabilitation bonds and guarantees in place ROS R04 - Rehabilitation process meets community expectations RBI-04P.01 - Timing for access to rehabilitated lands achieves final land use goals Environmental and Community team responsibilities related to rehabilitation Compliance team responsibilities related to rehabilitation - ensure rehabilitation is aligned with current plans and monitoring is conducted OST Team responsibilities for conducting rehabilitation and landform works Technical Services and Mining responsibilities related to final landform requirements, including design and mine layout Redundancy in roles for personnel on site	1 Low	2 Unlikely		Additional Controls Not Required Section 11.0
3	Insufficient funding for or prioritisation of rehabilitation activities leads to inability to complete planned rehabilitation activities	RBI-05D.03 - Government rehabilitation bonds and guarantees in place RBI-05D.05 - Mine planning for progressive rehabilitation to minimise area for final rehabilitation RBI-05D.09 - Maintain a watching brief on business inputs potentially required RBI-05S.06 - Annual reporting to Regulator includes reporting of rehabilitation area and active rehabilitation monitoring ROS R01 - Rehabilitation works create stable landforms Mine budget and planning includes rehabilitation requirements Prioritisation of equipment, people and area available to meet ongoing rehabilitation requirements Monthly tracking of disturbance area and progressive rehabilitation and discussion with production - Recorded in Activities Spreadsheet Daily plan and monthly mining plan includes rehabilitation activities	1 Low	2 Unlikely		Additional Controls Not Required Not Applicable to the RMP
4	Planning does not factor in rehabilitation requirements and approval conditions	RBI-05D.03 - Government rehabilitation bonds and guarantees in place RBI-05D.05 - Mine planning for progressive rehabilitation to minimise area for final rehabilitation RBI-05D.09 - Maintain a watching brief on business inputs potentially required RBI-05S.06 - Annual reporting to Regulator includes reporting of rehabilitation area and active rehabilitation monitoring ROS R01 - Rehabilitation works create stable landforms Mine budget and planning includes rehabilitation requirements Prioritisation of equipment, people and area available to meet ongoing rehabilitation requirements Monthly tracking of disturbance area and progressive rehabilitation and discussion with production - Recorded in Activities Spreadsheet Fortnightly rehabilitation meeting Daily plan and monthly mining plan includes rehabilitation activities	1 Low	2 Unlikely		Additional Controls Not Required Section 2.1 Appendix B This RMP
Active Rehabilitation Phase						
5	Poor rehabilitation planning leads to lack of biological resource salvage and maintenance (e.g. subsoil, topsoil, vegetative material, seedbank, rocks, habitat resources) to complete rehabilitation	RBI-02D.03 - Mine plans include provision of materials for sensitive structures and encapsulation RBI-03D.04 - Topsoil Management Plan includes requirements for stockpiling and managing topsoil RBI-03P.11 - Stripping and stockpiling procedures includes requirements for stockpiling RBI-03P.14 - Mine design considers reactive material in dumps ROS R02 - Water movement at the site does not cause harm RBI-02P.01 - Emplaced tailings/wastes are treated as required to achieve design strengths RBI-02P.02 - Capping materials are placed on TSF to achieve a long term stable landform RBI-02P.03 - Stockpiling and use of rock armouring for hydraulic breaks over tailings storage facility walls/edges Prioritisation of direct placement of topsoil Topsoil volume balance - spreadsheet to check volume on site Topsoil sampling process	1 Low	2 Unlikely		Conduct a review of ground disturbance permit to include timber salvage for re-use (Section 6.2.1) Update rehabilitation management plan to include further detail on application of ameliorants to topsoil (Section 6.2.4)

Ref ID	Risk / threat	Current Controls (must already be in place) Act, Object or System (CC) Signifies Critical Control if Fatal Risk	Risk evaluation * (with current control measures)			Proposed Additional Controls (if required) Current Controls and where addressed in the RMP as Applicable
			Maximum reasonable consequence	Likelihood	Risk	
6	Limited pre-existing biological resources for salvage (e.g. topsoil, weeds)	RBI-05D.03 - Government rehabilitation bonds and guarantees in place RBI-05D.05 - Mine planning for progressive rehabilitation to minimise area for final rehabilitation RBI-05D.09 - Maintain a watching brief on business inputs potentially required RBI-05S.06 - Annual reporting to Regulator includes reporting of rehabilitation area and active rehabilitation monitoring ROS R01 - Rehabilitation works create stable landforms RBI-02D.03 - Mine plans include provision of materials for sensitive structures and encapsulation RBI-02P.01 - Emplaced tailings/wastes are treated as required to achieve design strengths RBI-02P.02 - Capping materials are placed on TSF to achieve a long term stable landform RBI-03P.14 - Mine design considers reactive material in dumps ROS R02 - Water movement at the site does not cause harm Topsoil volume balance - spreadsheet to check volume on site	1 Low	2 Unlikely		Additional Controls Not Required Section 6.2.1
7	Clearing in adverse seasonal and weather conditions when salvaging biological resources.	RBI-03D.04 - Topsoil Management Plan includes requirements for stockpiling and managing topsoil RBI-03P.11 - Stripping and stockpiling procedures includes requirements for stockpiling Staged plan for clearing including initial removal of trees with vegetation maintained, stripping of topsoil during good weather conditions (i.e. not dry/high wind or overly wet)	1 Low	2 Unlikely		Conduct a review of rehabilitation management plan to include additional detail on optimal times to conduct stripping works (Section 6.2.1)
8	Adverse geochemical/chemical composition of materials (such as overburden, interburden, processing wastes, subsoils and topsoils and imported cover materials) leads to failure to establish vegetation, erosion and rehandling, additional amelioration requirements	RBI-03P.11 - Stripping and stockpiling procedures RBI-02D.03 - Mine plans include provision of materials for sensitive structures and encapsulation RBI-02P.01 - Emplaced tailings/wastes are treated as required to achieve design strengths RBI-02P.02 - Capping materials are placed on TSF to achieve a long term stable landform RBI-03P.14 - Mine design considers reactive material in dumps ROS R02 - Water movement at the site does not cause harm RBI-03S.06 - Water quality monitoring Tracking of material dumping sequence Soil chemistry testing is conducted Thermal imaging flights to identify areas requiring additional capping materials during landform establishment Annual thermal imaging flights (survey) to identify reactive ground and hot areas Spontaneous combustion propensity testing (R70)	2 Minor	4 Likely		WCPL have updated the RMP to include operational sampling and geochemical testing for potential acid forming (PAF) material in Section 6.2.1(f), Section 7 and Section 10.
9	Handling and containment of geochemical and geotechnically unsuitable tailings and course reject materials	RBI-05D.01 - Planning for Decommissioning and Rehabilitation Works ROS R02 - Water movement at the site does not cause harm RBI-03P.14 - Mine design considers reactive material in dumps RBI-03S.06 - Water quality monitoring RBI-02P.01 - Emplaced tailings/wastes are treated as required to achieve design strengths RBI-02P.02 - Capping materials are placed on TSF to achieve a long term stable landform The placement of carbonaceous material is managed in our dump design using material classification and dump design parameters. FSL dumps and minus 5 dumps to ensure carbonaceous material (rejects, Top of Coal waste) is adequately covered with competent material for rehabilitation. Monthly survey monitoring of tailings dams to identify changes to volume and movement of earth structures, walls Weekly visual inspection of tailings dams to identify potential cracks/leaks, seepage	1 Low	2 Unlikely		RMP updated to included operational sampling and geochemical testing for PAF material (refer to item 8) (Section 6.2.1) The RMP updates included updates for the management of carbonaceous material in the dump design based on material characterisation and Section 6.2.3.

Ref ID	Risk / threat	Current Controls (must already be in place) Act, Object or System (CC) Signifies Critical Control if Fatal Risk	Risk evaluation * (with current control measures)			Proposed Additional Controls (if required) Current Controls and where addressed in the RMP as Applicable
			Maximum reasonable consequence	Likelihood	Risk	
10	Adverse surface and groundwater quality and quantity	RBI-03D.02 - Water Management design and implementation includes site schematic identifying water storage areas RBI-03P.05 - Site drainage lines minimise impact to surrounding environment ROS R02 - Water movement at the site does not cause harm RBI-03P.06 - Water management plans take advantage of mine voids RBI-03T.03 - Over-topping buffer in site voids RBI-02D.01 - Designs and Guidance in place for Hazardous Materials RBI-03S.06 - Water quality monitoring RBI-05S.01 - Monitoring and Adaptive Management protocols RBI-02P.03 - Stockpiling and use of rock armouring for hydraulic breaks over tailings storage facility walls/edges and use in drainage lines RBI-03P.11 - Stripping and stockpiling procedures RBI-05T.02 - Internal reporting of, and reaction to, non-compliances Clean water diversion drains constructed on site where possible Site water balance Maintained site ground water model Site TARPs for surface and ground water management Ground disturbance permit includes requirements for erosion and sediment control	1 Low	2 Unlikely		Additional Controls Not Required Section 6.2.1
Decommissioning and Demolition Phase						
11	Impacts on heritage items	RBI-03P.07 - Disturbed areas are well characterised and understood RBI-03P.15 - Ground Disturbance Permit process RBI-03S.08 - Database (GIS) of Heritage Items and other features RBI-05D.01 - Planning for Decommissioning and Rehabilitation Works ROS R04 - Rehabilitation process meets community expectations PR disturbance salvage for heritage items including Aboriginal heritage items	1 Low	2 Unlikely		Additional Controls Not Required Section 6.2.1
12	Contamination from decommissioning activities (e.g. storage and use of hydrocarbons / chemicals, drilling fluids, spillage of dirty or produced saline water, brine, sewage) impacts environment and leads to failure to achieve final closure or sign-off	RBI-05D.01 - Planning for Decommissioning and Rehabilitation Works RBI-05D.02 - Contractor Management, Plans and Processes includes awareness of site requirements for management of pollution incidents ROS R02 - Water movement at the site does not cause harm RBI-02D.01 - Designs and Guidance in place for Hazardous Materials RBI-03P.12 - Soil treatment to meet final landform requirements RBI-05S.01 - Monitoring and Adaptive Management protocols Hydrocarbon management plan includes requirements for storage and disposal, managing spills Pollution Incident Response Management Plan (PIRMP) includes response and management of spills and pollution incidents Sediment and erosion controls including bunding and sediment fencing	1 Low	2 Unlikely		Additional Controls Not Required Section 6.2.2
13	Generation of material and waste products from the demolition process.	RBI-05D.01 - Planning for Decommissioning and Rehabilitation Works RBI-05D.02 - Contractor Management, Plans and Processes ROS R02 - Water movement at the site does not cause harm EPL licence conditions for disposal of waste products on site where possible Removal by licenced contractor where on site disposal is not permitted If identified - supervised asbestos removal by licenced contractor where required	1 Low	2 Unlikely		Additional Controls Not Required Section 6.1.1 Section 6.1.2
14	Groundwater accumulation in former underground workings (e.g. potential for fill and spill or impacts on regional ground water users).	RBI-03P.05 - Site drainage lines minimise impact to surrounding environment RBI-03P.06 - Water management plans take advantage of mine voids ROS R02 - Water movement at the site does not cause harm ROS R04 - Rehabilitation process meets community expectations Borehole rehabilitation includes capping	1 Low	2 Unlikely		Additional Controls Not Required Section 6.1.1 Section 6.1.2 Section 6.1.3

Ref ID	Risk / threat	Current Controls (must already be in place) Act, Object or System (CC) Signifies Critical Control if Fatal Risk	Risk evaluation * (with current control measures)			Proposed Additional Controls (if required) Current Controls and where addressed in the RMP as Applicable
			Maximum reasonable consequence	Likelihood	Risk	
15	Exposure or access to underground workings.	RBI-05D.09 - Maintain a watching brief on business inputs potentially required ROS R04 - Rehabilitation process meets community expectations Borehole rehabilitation includes capping	1 Low	2 Unlikely		Additional Controls Not Required Not Applicable to this RMP
16	Habitation of structures and/or underground workings by native fauna (e.g. bats)	N/A - no retained buildings or underground workings (subject to approval from NSW DPHI)				Not Required
Landform Establishment Phase						
17	Unable to achieve rehabilitation or closure criteria due to unstable landform from erosion and/or mass movement issues associated with inappropriate design and/or quality assurance during landform construction, unidentified structures	RBI-03D.06 - Erosion and Sediment controls included in in Rehabilitation final landform designs RBI-03D.07 - Geomorphic design protocols are incorporated in planning processes RBI-03S.07 - Longitudinal studies of rehabilitation effectiveness RBI-05D.07 - Factor of safety applied to designs RBI-05D.08 - Geotechnical analysis and design RBI-05P.04 - Formal response to third party audits RBI-05S.03 - Two yearly/regular company environmental audits ROS R01 - Rehabilitation works create stable landforms RBI-04P.02 - Site security fencing, signage and management RBI-03D.04 - Topsoil Management Plan RBI-03S.06 - Water quality monitoring RBI-05D.01 - Planning for Decommissioning and Rehabilitation Works RBI-02D.02 - Tailings and Dam Design Management System RBI-02P.01 - Emplaced tailings/wastes are treated as required to achieve design strengths RBI-02S.01 - Registered Engineering review of tailings dam design Leica system includes Final Surface Level (FSL) for final landform design	1 Low	2 Unlikely		Additional Controls Not Required Section 6.1.2
18	Exposure or release of geochemical and/or geotechnically adverse material (typically tailings or waste rock) associated with containment design and construction, including capping/cover system, drainage and liner (if required).	RBI-02D.03 - Mine plans include provision of materials for sensitive structures and encapsulation RBI-03D.04 - Topsoil Management Plan RBI-03P.11 - Stripping and stockpiling procedures RBI-03P.14 - Mine design considers reactive material in dumps ROS R02 - Water movement at the site does not cause harm RBI-02P.02 - Capping materials are placed on Tailing Storage Facility (TSF) to achieve a long term stable landform RBI-03S.06 - Water quality monitoring	1 Low	2 Unlikely		Rehabilitation Verification Document (RVD) to be finalised Section 6.2.2 Confirm requirements of rejects disposal on site (ground or strata failure in the Principal Hazard Management Plan (PHMP)
19	Lack of availability of suitable materials for encapsulation or capping of adverse materials.	RBI-02D.03 - Mine plans include provision of materials for sensitive structures and encapsulation RBI-03D.04 - Topsoil Management Plan RBI-03P.11 - Stripping and stockpiling procedures RBI-03P.14 - Mine design considers reactive material in dumps ROS R02 - Water movement at the site does not cause harm RBI-02P.01 - Emplaced tailings/wastes are treated as required to achieve design strengths RBI-02P.02 - Capping materials are placed on TSF to achieve a long term stable landform RBI-02P.03 - Stockpiling and use of rock armouring for hydraulic breaks over tailings storage facility walls/edges	1 Low	2 Unlikely		Additional Controls Not Required Section 6.2.1

Ref ID	Risk / threat	Current Controls (must already be in place) Act, Object or System (CC) Signifies Critical Control if Fatal Risk	Risk evaluation * (with current control measures)			Proposed Additional Controls (if required) Current Controls and where addressed in the RMP as Applicable
			Maximum reasonable consequence	Likelihood	Risk	
20	Failure to achieve rehabilitation or closure criteria due to inability to sustain safe, stable and non-polluting slope on final landform	RBI-03D.06 - Erosion and Sediment controls included in in Rehabilitation final landform designs RBI-03D.07 - Geomorphic design protocols are incorporated in planning processes RBI-03S.07 - Longitudinal studies of rehabilitation effectiveness RBI-05D.07 - Factor of safety applied to designs RBI-05D.08 - Geotechnical analysis and design RBI-05P.04 - Formal response to third party audits RBI-05S.03 - Two yearly/regular company environmental audits ROS R01 - Rehabilitation works including timber spreading to create stable landforms RBI-03D.04 - Topsoil Management Plan RBI-03S.06 - Water quality monitoring RBI-05D.01 - Planning for Decommissioning and Rehabilitation Works RBI-02D.02 - Tailings and Dam Design Management System RBI-02P.01 - Emplaced tailings/wastes are treated as required to achieve design strengths RBI-02S.01 - Registered Engineering review of tailings dam design Leica system includes Final Surface Level (FSL) for final landform design Target areas have undergone geofluv modelling for erosion and water management	1 Low	2 Unlikely		Additional Controls Not Required Section 6.2 Section 7.0 Section 8.0 Section 10.0
21	Uncertain capping design and performance presents a risk that the materials used for capping may not be a suitable growth medium or placed at a suitable thickness to support the final land use.	Current existing FSL design for final landform	1 Low	2 Unlikely		WCPL Environmental Advisor will conduct a review of current approved and used FSL design by Q2 2026. Subject to the outcome of this review, this RMP will be updated accordingly.
22	Borehole failure	RBI-03P.01 - Response to boreholes identified during decommissioning RBI-03P.08 - Guidance provided on borehole identification and decommissioning RBI-05D.02 - Contractor Management, Plans and Processes ROS R01 - Rehabilitation works create stable landforms Boreholes on site grouted and capped for decommissioning Site exploration and rehabilitation procedures includes management of boreholes	1 Low	2 Unlikely		Additional Controls Not Required Section 6.2.1
23	Final landform unsuitable for final land use (e.g. large rocks present affecting cultivation, settlement and surface subsidence leading to extended ponding).	RBI-03P.09 - Cleared vegetation is processed to improve growth media RBI-03P.13 - Revegetation planning and associated activities RBI-03S.08 - Database (GIS) of Heritage Items and other features RBI-05D.04 - Mine life considerations included in mine and rehabilitation planning RBI-05S.01 - Monitoring and Adaptive Management protocols RBI-05S.02 - Rehabilitation completion milestones are identified and tracked RBI-05S.06 - Annual reporting to Regulator RBI-05T.02 - Internal reporting of, and reaction to, non-compliances ROS R03 - Rehabilitated lands are suited to a beneficial final land use RBI-03D.06 - Erosion and Sediment controls included in in Rehabilitation final landform designs RBI-03D.07 - Geomorphic design protocols are incorporated in planning processes RBI-03S.07 - Longitudinal studies of rehabilitation effectiveness Settlement monitoring conducted	1 Low	2 Unlikely		Additional Controls Not Required Section 6.0 Section 7.0 Section 8.0 Section 10.0
24	Landform aspect not suitable for intended target plant species	RBI-03P.09 - Cleared vegetation is processed to improve growth media RBI-03P.13 - Revegetation planning and associated activities RBI-05D.04 - Mine life considerations included in mine and rehabilitation planning RBI-05S.01 - Monitoring and Adaptive Management protocols RBI-05S.02 - Rehabilitation completion milestones are identified and tracked RBI-05S.06 - Annual reporting to Regulator RBI-05T.02 - Internal reporting of, and reaction to, non-compliances ROS R03 - Rehabilitated lands are suited to a beneficial final land use ROS R02 - Water movement at the site does not cause harm	1 Low	2 Unlikely		WCPL Environmental Advisor will conduct a review (WCPL's Environmental Department) of target plant species / seed mix to consider the current design landform aspect by Q2 2026. Subject to the outcome of this review, this RMP will be updated accordingly
Growth Medium Establishment Phase						

Ref ID	Risk / threat	Current Controls (must already be in place) Act, Object or System (CC) Signifies Critical Control if Fatal Risk	Risk evaluation * (with current control measures)			Proposed Additional Controls (if required) Current Controls and where addressed in the RMP as Applicable
			Maximum reasonable consequence	Likelihood	Risk	
25	Failure to achieve rehabilitation or closure criteria due to poor physical and structural properties of substrate caused by poor topsoil stockpiling and management	RBI-03D.04 - Topsoil Management Plan ROS R03 - Rehabilitated lands are suited to a beneficial final land use Prioritisation of direct placement of topsoil Topsoil volume balance - spreadsheet to check volume on site Topsoil sampling process Rehabilitation monitoring to assess against interim performance criteria (biodiversity management plan) Site wide benchmarking for topsoil composition analysis	1 Low	2 Unlikely		Determine reasoning behind underperformance of vegetation in specific rehabilitation areas. Subject to the outcome of this review, this RMP will be updated accordingly
26	Failure to achieve rehabilitation or closure criteria due to subsoil and topsoil deficit for rehabilitation activities.	RBI-02D.03 - Mine plans include provision of materials for sensitive structures and encapsulation RBI-03D.04 - Topsoil Management Plan RBI-03P.11 - Stripping and stockpiling procedures RBI-03P.14 - Mine design considers reactive material in dumps ROS R02 - Water movement at the site does not cause harm RBI-02P.01 - Emplaced tailings/wastes are treated as required to achieve design strengths RBI-02P.02 - Capping materials are placed on TSF to achieve a long term stable landform RBI-02P.03 - Stockpiling and use of rock armouring for hydraulic breaks over tailings storage facility walls/edges	1 Low	2 Unlikely		Additional Controls Not Required Section 6.2.3 & Section 6.2.4
27	Failure to achieve rehabilitation or closure criteria due to substrate inadequate to support final land use (e.g. lack of organic matter, nutrient deficiency, lack of soil biota, adverse soil chemical properties, exposed hostile geochemical materials, and any other factors impeding the effective rooting depth) caused by poor soil quality	RBI-05P.04 - Formal response to third party audits RBI-05S.03 - Two yearly/regular company environmental audits ROS R03 - Rehabilitated lands are suited to a beneficial final land use RBI-03D.04 - Topsoil Management Plan ROS R03 - Rehabilitated lands are suited to a beneficial final land use Prioritisation of direct placement of topsoil Topsoil volume balance - spreadsheet to check volume on site Topsoil sampling process Rehabilitation monitoring to assess against interim performance criteria (biodiversity management plan) Site wide benchmarking for topsoil composition analysis Suitable amelioration requirements and response to soil sampling results Prioritisation of organic fertilising options	1 Low	2 Unlikely		RMP updated to included operational sampling and geochemical testing for PAF material (Section 6.1.1) RMP updated to include proposed R70 propensity testing for material characterisation (i.e. spontaneous combustion propensity) in Section 6.1.1(g) and Section 7.0 RMP updated to include periodic sampling and analysis of topsoil/ subsoil and across the surface of the final landform, prior to topsoil application in Section 6.1.4.
28	Poor planning results in placement during wrong time of year leads to significant erosion, LTA establishment	Rehabilitation planning meetings 3 yearly rehabilitation management plan forward way program Weekly mine planning meeting includes consideration of rehabilitation requirements	3 Moderate	3 Possible		WCPL's Environmental Advisor to finalise rehabilitation verification document and processes by Q2 2026. Subject to the outcome of this review, this RMP will be updated accordingly
Ecosystem Establishment Phase						
29	Failure to achieve rehabilitation or closure criteria due to lack of availability and quality of target seed resources, including genetic integrity	RBI-03P.09 - Cleared vegetation is processed to improve growth media RBI-03P.13 - Revegetation planning and associated activities RBI-03S.10 - Rehabilitation Management Plans of the flora species mix in final landforms are monitored to conform designs are met and maintained RBI-05D.05 - Mine planning for progressive rehabilitation to minimise area for final rehabilitation ROS R03 - Rehabilitated lands are suited to a beneficial final land use Seed supplier provides list and data related to seed delivered, including viability, germination testing results and collection location Sourcing of seeds to meet licencing requirements for prescribed vegetation types	4 Significant	2 Unlikely		WCPL's Environmental Advisor to undertake a review of seed suppliers (and confirm their ability) to be able to support future rehabilitation needs by Q2 2026. Subject to the outcome of this review, this RMP will be updated accordingly

Ref ID	Risk / threat	Current Controls (must already be in place) Act, Object or System (CC) Signifies Critical Control if Fatal Risk	Risk evaluation * (with current control measures)			Proposed Additional Controls (if required) Current Controls and where addressed in the RMP as Applicable
			Maximum reasonable consequence	Likelihood	Risk	
30	Failure to achieve rehabilitation or closure criteria due to poor seed viability, seed dormancy caused by poor seed quality or storage	RBI-03P.09 - Cleared vegetation is processed to improve growth media RBI-03P.13 - Revegetation planning and associated activities RBI-03S.10 - Rehabilitation Management Plans of the flora species mix in final landforms are monitored to conform designs are met and maintained RBI-05D.05 - Mine planning for progressive rehabilitation to minimise area for final rehabilitation ROS R03 - Rehabilitated lands are suited to a beneficial final land use Seed supplier provides list and data related to seed delivered, including viability, germination testing results and collection location Sourcing of seeds to meet licencing requirements for prescribed vegetation types Sealed, insulated containers for seed storage Airconditioned (climate controlled) seed storage areas	4 Significant	2 Unlikely		WCPL's Environmental Advisor to undertake a review of seed suppliers (and confirm their ability) to be able to support future rehabilitation needs by Q2 2026. Subject to the outcome of this review, this RMP will be updated accordingly
31	Predation of seeds by ants, insects, mice etc. during storage	RBI-03P.13 - Revegetation planning and associated activities RBI-05D.05 - Mine planning for progressive rehabilitation to minimise area for final rehabilitation ROS R03 - Rehabilitated lands are suited to a beneficial final land use Sealed, insulated containers for seed storage	3 Moderate	2 Unlikely		Additional Controls Not Required Section 8.0
32	Failure to achieve rehabilitation or closure criteria due to damage to seed during revegetation process.	RBI-03P.09 - Cleared vegetation is processed to improve growth media RBI-03P.13 - Revegetation planning and associated activities RBI-03S.10 - Rehabilitation Management Plans of the flora species mix in final landforms are monitored to conform designs are met and maintained Seed and fertiliser plan for OST team includes rehabilitation areas for the year, seed requirements, order of works for areas	2 Minor	2 Unlikely		Additional Controls Not Required Section 6.1.5
33	Failure to achieve rehabilitation or closure criteria due to tube stock death caused by poor quality tube stock, damage to tube stock	RBI-03D.05 - Weed and Pest control management plan RBI-03P.13 - Revegetation planning and associated activities ROS R03 - Rehabilitated lands are suited to a beneficial final land use Tube stock supplier provides list and data related to seed delivered, including viability, germination testing results and collection location Tube stock supplier QA process Tube stock planters are familiar with planting methodology	2 Minor	2 Unlikely		Additional Controls Not Required Section 6.1.5
34	Failure to achieve rehabilitation or closure criteria due to weed infestation inhibiting native vegetation growth	RBI-03D.05 - Weed and Pest control management plan RBI-03P.09 - Cleared vegetation is processed to improve growth media ROS R03 - Rehabilitated lands are suited to a beneficial final land use Seed and fertiliser plan for OST team includes rehabilitation areas for the year, seed requirements, order of works for areas	1 Low	2 Unlikely		Update seed and fertiliser plan to include weed management requirements (Section 6.1.5)
35	Failure to achieve rehabilitation or closure criteria due to poor machinery selection during the rehabilitation process	Machinery planning and scheduling for OST team Introduction to site and maintenance program for machinery Seed and fertiliser plan for OST team includes consideration of machinery available and required for identified works Seeding and spraying drone at disposal for areas not suitable for on ground rehabilitation machinery	1 Low	2 Unlikely		Additional Controls Not Required Not Applicable to this RMP
36	Failure to achieve rehabilitation or closure criteria due to inappropriate revegetation species mix for targeted final land use.	RBI-03P.09 - Cleared vegetation is processed to improve growth media RBI-03P.13 - Revegetation planning and associated activities RBI-03S.10 - Rehabilitation Management Plans of the flora species mix in final landforms are monitored to conform designs are met and maintained RBI-05S.01 - Monitoring and Adaptive Management protocols RBI-05S.02 - Rehabilitation completion milestones are identified and tracked RBI-05T.02 - Internal reporting of, and reaction to, non-compliances	2 Minor	2 Unlikely		Additional Controls Not Required Section 6.1.5
37	Failure to achieve rehabilitation or closure criteria due to insufficient establishment of vegetation caused by weather and climatic influences (e.g. drought; intense rainfall events; bushfire and climate change).	RBI-03S.10 - Rehabilitation Management Plans of the flora species mix in final landforms are monitored to conform designs are met and maintained RBI-03T.02 - Dump designs allow for a wide range of rainfall events ROS R01 - Rehabilitation works create stable landforms Seed and fertilisation plan for OST team considers rehabilitation timing throughout year, extended dry periods or high rainfall periods Seeding and spraying drone at disposal for areas not suitable for on ground rehabilitation machinery, including during high rainfall events	3 Moderate	2 Unlikely		Additional Controls Not Required Section 6.1.5 Section 8.0

Ref ID	Risk / threat	Current Controls (must already be in place) Act, Object or System (CC) Signifies Critical Control if Fatal Risk	Risk evaluation * (with current control measures)			Proposed Additional Controls (if required) Current Controls and where addressed in the RMP as Applicable
			Maximum reasonable consequence	Likelihood	Risk	
38	Failure to achieve rehabilitation or closure criteria due to poor availability of areas for revegetation in optimal seasonal conditions.	RBI-05D.01 - Planning for Decommissioning and Rehabilitation Works RBI-05P.01 - Change management processes are in place ROS R01 - Rehabilitation works create stable landforms Fortnightly rehabilitation meetings include availability of areas for rehabilitation Three yearly forecast includes consideration of disturbed area, areas for rehabilitation	1 Low	2 Unlikely	2	Additional Controls Not Required Section 6.0
39	Failure to achieve rehabilitation or closure criteria due to inadequate habitat structures for colonisation or use caused by weather and climactic issues, insufficient plants	RBI-03D.04 - Topsoil Management Plan RBI-03D.05 - Weed and Pest control management plan ROS R03 - Rehabilitated lands are suited to a beneficial final land use Rehabilitation monitoring against performance criteria	1 Low	2 Unlikely	2	Additional Controls Not Required Section 6.1.1
Ecosystem Development Phase						
40	Loss of immature rehabilitation due to weather and climatic influences (e.g. bushfire).	RBI-03S.10 - Rehabilitation Management Plans of the flora species mix in final landforms are monitored to conform designs are met and maintained RBI-03T.02 - Dump designs allow for a wide range of rainfall events ROS R01 - Rehabilitation works create stable landforms Seed and fertilisation plan for OST team considers rehabilitation timing throughout year, extended dry periods or high rainfall periods Seeding and spraying drone at disposal for areas not suitable for on ground rehabilitation machinery, including during high rainfall events	3 Moderate	2 Unlikely		Additional Controls Not Required Section 6.1.5 Section 8.0
41	Poor long term water quality and quantity (e.g. acid-drainage, high salinity)	RBI-02D.02 - Tailings and Dam Design Management System RBI-03P.12 - Soil treatment to meet final landform requirements RBI-03S.06 - Water quality monitoring ROS R01 - Rehabilitation works create stable landforms RBI-03P.05 - Site drainage lines minimise impact to surrounding environment RBI-03P.06 - Water management plans take advantage of mine voids RBI-03T.03 - Over-topping buffer in site voids ROS R02 - Water movement at the site does not cause harm RBI-02P.03 - Stockpiling and use of rock armouring for hydraulic breaks over tailings storage facility walls/edges RBI-03D.02 - Water Management design and implementation RBI-05T.02 - Internal reporting of, and reaction to, non-compliances Development of void to meet final landform plan No interaction with water in void - closed system	1 Low	2 Unlikely		RMP updated to included operational sampling and geochemical testing for PAF material (Section 6.1.1)
42	Failure to achieve rehabilitation or closure criteria due to damage to rehabilitation (e.g. fauna, domestic stock, vandalism, vehicular interactions, bushfire, insects and plant disease).	RBI-03P.10 - Bunding and barricading of voids and steep slopes ROS R02 - Water movement at the site does not cause harm RBI-04P.02 - Site security fencing, signage and management RBI-03D.06 - Erosion and Sediment controls included in in Rehabilitation final landform designs RBI-05D.08 - Geotechnical analysis and design RBI-05P.02 - Road networks are restored or rehabilitated ROS R01 - Rehabilitation works create stable landforms RBI-04P.01 - Timing for access to rehabilitated lands achieves final land use goals RBI-05P.03 - Third party agreements in place for trials and transition after completion criteria met Weed and Pest Management including baiting, trapping, shooting of fauna Inspection and monitoring of progressive rehabilitation areas	3 Moderate	2 Unlikely		Additional Controls Not Required Section 6.1.6 Section 8.0
43	Failure to achieve rehabilitation or closure criteria due to disturbance of established rehabilitation areas.	RBI-03P.15 - Ground Disturbance Permit process ROS R03 - Rehabilitated lands are suited to a beneficial final land use RBI-05D.01 - Planning for Decommissioning and Rehabilitation Works RBI-05P.01 - Change management processes are in place ROS R01 - Rehabilitation works create stable landforms Tracking of re-disturbed areas in GIS Database Mine planning and final landform planning	4 Significant	3 Possible		WCPL's Environmental Advisor to finalise rehabilitation verification document and processes by Q2 2026. Subject to the outcome of this review, this RMP will be updated accordingly

Ref ID	Risk / threat	Current Controls (must already be in place) Act, Object or System (CC) Signifies Critical Control if Fatal Risk	Risk evaluation * (with current control measures)			Proposed Additional Controls (if required) Current Controls and where addressed in the RMP as Applicable
			Maximum reasonable consequence	Likelihood	Risk	
44	Failure to achieve rehabilitation or closure criteria due to insufficient establishment of target species and limited species diversity to allow transition into Ecosystem Development caused by unfavourable climatic conditions or insufficient quantity of desired vegetation species planted	RBI-03P.09 - Cleared vegetation is processed to improve growth media RBI-03P.13 - Revegetation planning and associated activities RBI-05D.04 - Mine life considerations included in mine and rehabilitation planning RBI-05S.01 - Monitoring and Adaptive Management protocols including of establishment and diversity of species RBI-05S.02 - Rehabilitation completion milestones are identified and tracked RBI-05S.06 - Annual reporting to Regulator RBI-05T.02 - Internal reporting of, and reaction to, non-compliances ROS R03 - Rehabilitated lands are suited to a beneficial final land use Trigger Action Response Plan (TARP) for biodiversity management plan	2 Minor	2 Unlikely		Additional Controls Not Required Section 6.1.5 Section 8.0
45	Failure to achieve rehabilitation or closure criteria due to limited vegetation structural development and habitat for targeted fauna species caused by unfavourable climatic conditions or insufficient quantity of desired vegetation species planted	RBI-03P.09 - Cleared vegetation is processed to improve growth media RBI-03P.13 - Revegetation planning and associated activities RBI-05D.04 - Mine life considerations included in mine and rehabilitation planning RBI-05S.01 - Monitoring and Adaptive Management protocols including of establishment and diversity of species RBI-05S.02 - Rehabilitation completion milestones are identified and tracked RBI-05S.06 - Annual reporting to Regulator RBI-05T.02 - Internal reporting of, and reaction to, non-compliances ROS R03 - Rehabilitated lands are suited to a beneficial final land use Trigger Action Response Plan (TARP) for biodiversity management plan	2 Minor	2 Unlikely		Additional Controls Not Required Section 6.1.5 Section 8.0
46	Failure to achieve rehabilitation or closure criteria due to erosion and failure of landform, drainage and water management / storage structures caused by significant weather events	RBI-03D.06 - Erosion and Sediment controls included in in Rehabilitation final landform designs RBI-03D.07 - Geomorphic design protocols are incorporated in planning processes RBI-05D.08 - Geotechnical analysis and design RBI-05P.04 - Formal response to third party audits RBI-05S.03 - Company environmental audits ROS R01 - Rehabilitation works create stable landforms RBI-03T.02 - Dump designs allow for a wide range of rainfall events ROS R02 - Water movement at the site does not cause harm Rehabilitation monitoring and inspections Erosion gully identification Final landform design accommodates for areas prone to erosion	2 Minor	2 Unlikely		Additional Controls Not Required Section 6.1.1 Section 6.1.3 Section 8.0
47	Failure to achieve rehabilitation or closure criteria due to lack of infrastructure to support intended final land use (e.g. dams, fences, watering facilities).	RBI-05D.01 - Planning for Decommissioning and Rehabilitation Works RBI-05P.02 - Road networks are restored or rehabilitated ROS R03 - Rehabilitated lands are suited to a beneficial final land use Mine closure plan includes final land use and method to achieve Final landform rehabilitation plan includes final land use requirements	1 Low	2 Unlikely		Additional Controls Not Required Section 6.1.6
Mine Subsidence Impacted Areas						
48	Final landform settlement leads to final landform drainage not meeting surrounding landscape, including water ponding	Monitoring program including landform settlement Rehabilitation inspections	3 Moderate	3 Possible		WCPL's Environmental Advisor to finalise rehabilitation verification document Incorporate final landform settlement into FSL design by Q2 2026. Subject to the outcome of this review, this RMP will be updated accordingly
Other Failure Modes						
49	Bond values increased and/or license to operate challenged	Rehabilitation planning and execution in line with commitments made to regulator. Regular reports to senior leadership team on rehabilitation works. Allocated resources for rehabilitation works. Rehabilitation TARP Monitoring of rehabilitation Annual RCE review Management of seed, ecosystem establishment etc. (As above)	3 Moderate	2 Unlikely		Additional Controls Not Required Section 6.0 Section 7.0 Section 8.0 Section 10.0 Section 11.2

Ref ID	Risk / threat	Current Controls (must already be in place) Act, Object or System (CC) Signifies Critical Control if Fatal Risk	Risk evaluation * (with current control measures)			Proposed Additional Controls (if required) Current Controls and where addressed in the RMP as Applicable
			Maximum reasonable consequence	Likelihood	Risk	
	HAZOP - Managing the ROM pad rehabilitation and mining of final material in the central zone Lack of material or less than adequate material location for final rehabilitation and closure	Topsoil balance spreadsheet Ground disturbance permit includes depths for topsoil stripping and extraction, taking into consideration previous destruction of topsoil	3 Moderate	3 Possible		WCPL's Environmental Advisor to conduct a review of topsoil balance, including counterbalance for main MIA area for final rehabilitation and closure, including consideration of stockpile location Q2 2026. Subject to the outcome of this review, this RMP will be updated accordingly

APPENDIX E

Rehabilitation Objectives (Approved)

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042197	Bushfire	Appropriate bushfire hazard controls (where required) will implemented following advice from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	D1
ROB0042196	Bushfire	The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation	D1
ROB0042178	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU697 - Mugga Ironbark Open Forest established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D1
ROB0042179	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D1
ROB0042180	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable.Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D1
ROB0042187	Ecological rehabilitation	Rehabilitate a total of 1.32 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU697 - Mugga Ironbark Open Forest	D1
ROB0042188	Ecological rehabilitation	Rehabilitate a total of 42.52 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	D1
ROB0042189	Ecological rehabilitation	Rehabilitate a total of 79.34 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	D1
ROB0042190	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	D1
ROB0042199	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	D1

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042200	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	D1
ROB0042201	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU697 - Mugga Ironbark Open Forest consistent within the BioNet Vegetation Classification	D1
ROB0042202	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU732 - Yellowbox Grassy Woodland consistent within the BioNet Vegetation Classification	D1
ROB0042203	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	D1
ROB0042204	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU697) within the BioNet Vegetation Classification.	D1
ROB0042205	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	D1
ROB0042206	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	D1
ROB0042184	Groundwater	Groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm.	D1
ROB0042186	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	D1
ROB0042198	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	D1
ROB0042181	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	D1
ROB0042194	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a	D1

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
		safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	
ROB0042195	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	D1
ROB0042191	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	D1
ROB0042192	Management of waste and process materials	Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	D1
ROB0042175	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	D1
ROB0042177	Retention of infrastructure	Any retained infrastructure is safe and does not pose any hazard to the community.	D1
ROB0042185	Surface water	Mine water & sediment dams (excluding approved final voids) to be backfilled and integrated into the final landform. Sediment dams surrounding the infrastructure areas are desludged with carbonaceous material removed and placed in overburden areas 2m below surface	D1
ROB0042193	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	D1
ROB0042183	Water approvals	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.	D1
ROB0042223	Bushfire	Appropriate bushfire hazard controls (where required) will implemented following advice from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	D2
ROB0042222	Bushfire	The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation	D2

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042210	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable.Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D2
ROB0042216	Ecological rehabilitation	Rehabilitate a total of 54.32 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	D2
ROB0042217	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	D2
ROB0042225	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	D2
ROB0042226	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	D2
ROB0042227	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	D2
ROB0042228	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	D2
ROB0042214	Groundwater	Groundwater quality meets the requirements of relevant development consent/EPL and does not present a risk of environmental harm.	D2
ROB0042215	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	D2
ROB0042224	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	D2
ROB0042211	Landform stability	Final landform of tailings dams maximise geotechnical performance, stability and hydrological function prior to capping activities	D2

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042212	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	D2
ROB0042220	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	D2
ROB0042221	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	D2
ROB0042213	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. Tailings dams to be capped with compacted inert overburden material to a minimum of 2m	D2
ROB0042218	Management of waste and process materials	Residual waste materials stored on site (e.g. tailings) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	D2
ROB0042207	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	D2
ROB0042208	Retention of infrastructure	All infrastructure that is to remain as part of the final land use benefits from the relevant approvals (e.g. development consent and / or licence/lease/binding agreement, etc)	D2
ROB0042209	Retention of infrastructure	Any retained infrastructure is safe and does not pose any hazard to the community.	D2
ROB0042219	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	D2
ROB0042161	Bushfire	Appropriate bushfire hazard controls (where required) to be implemented following advice from the NSW Rural Fire Service.	D4
ROB0042160	Bushfire	The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation	D4

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042134	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU547 - Fuzzy Box Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Biometric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D4
ROB0042135	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU697 - Mugga Ironbark Open Forest established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Biometric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D4
ROB0042136	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Biometric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D4
ROB0042137	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU825 - Narrow-leaved Ironbark Grass Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D4
ROB0042138	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Final Void embankments have the Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D4
ROB0042139	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable.Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D4
ROB0042140	Ecological rehabilitation	Rehabilitate a total of 1,488.28 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	D4
ROB0042141	Ecological rehabilitation	Rehabilitate a total of 10.99 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU547 - Fuzzybox Woodland	D4
ROB0042142	Ecological rehabilitation	Rehabilitate a total of 309.4 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU697 - Mugga Ironbark Open Forest	D4

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042143	Ecological rehabilitation	Rehabilitate a total of 8.30 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU825 - Narrow-leaved Ironbark Grass Woodland	D4
ROB0042144	Ecological rehabilitation	Rehabilitate a total of 846.88 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	D4
ROB0042155	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	D4
ROB0042163	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	D4
ROB0042165	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU547 - FuzzyBox Woodland consistent within the BioNet Vegetation Classification	D4
ROB0042166	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU697 - Mugga Ironbark Open Forest consistent within the BioNet Vegetation Classification	D4
ROB0042167	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU732 - Yellowbox Grassy Woodlamd consistent within the BioNet Vegetation Classification	D4
ROB0042168	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	D4
ROB0042169	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU825 - Narrow-leaved Ironbark Grass Woodland consistent within the BioNet Vegetation Classification	D4
ROB0042170	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU547) within the BioNet Vegetation Classification.	D4
ROB0042171	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU697) within the BioNet Vegetation Classification.	D4
ROB0042172	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	D4

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042173	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	D4
ROB0042174	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU825) within the BioNet Vegetation Classification.	D4
ROB0042152	Groundwater	Groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm.	D4
ROB0042154	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	D4
ROB0042162	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	D4
ROB0042146	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	D4
ROB0042148	Landform stability	Final void highwalls and batters are designed and constructed incorporating geotechnical design and factors of safety for long term stability as a final landform feature generally in accordance with the approved conceptual final landform design	D4
ROB0042149	Landform stability	Final voids and batters incorporate micro-relief and integrate with surrounding nautral landforms and adjacent mine rehabiliation. Final Void batters are designed and constructed to minimise to the greatest extent practicable size and depth	D4
ROB0042158	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	D4
ROB0042159	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	D4
ROB0042164	Landform stability	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	D4

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042145	Management of waste and process materials	Final landform which includes the Elevated Waste Rock Emplacement Area maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 5m below the surface of the Elevated Waste Rock Emplacement area, so not to pose a threat of environmental harm or restrict the intended final land use.	D4
ROB0042156	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	D4
ROB0042131	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	D4
ROB0042176	Retention of infrastructure	All infrastructure that is to remain as part of the final land use benefits from the relevant approvals (e.g. development consent and / or licence/lease/binding agreement, etc)	D4
ROB0042132	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	D4
ROB0042133	Retention of infrastructure	Any retained infrastructure is safe and does not pose any hazard to the community.	D4
ROB0042151	Surface water	Final voids catchments and associated batters are designed and constructed to minimise to the greatest extent practicable the drainage catchment of final voids.	D4
ROB0042153	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	D4
ROB0042157	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	D4
ROB0042150	Water approvals	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.	D4
ROB0042239	Bushfire	Appropriate bushfire hazard controls (where required) to be implemented following advice from the NSW Rural Fire Service.	D5

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042238	Bushfire	The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation	D5
ROB0042230	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Final Void embankments have the Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D5
ROB0042231	Ecological rehabilitation	Rehabilitate a total of 12.86 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	D5
ROB0042241	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	D5
ROB0042242	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	D5
ROB0042234	Groundwater	Groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm.	D5
ROB0042233	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	D5
ROB0042240	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	D5
ROB0042236	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	D5
ROB0042237	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	D5
ROB0042147	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	D5

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042229	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	D5
ROB0042235+A111:C111	Surface water	Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	D5
ROB0042232	Water approvals	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.	D5
ROB0042262	Bushfire	Appropriate bushfire hazard controls (where required) will implemented following advice from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	D7
ROB0042261	Bushfire	The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation	D7
ROB0042247	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D7
ROB0042248	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable.Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	D7
ROB0042253	Ecological rehabilitation	Rehabilitate a total of 20.79 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	D7
ROB0042254	Ecological rehabilitation	Rehabilitate a total of 7.05 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	D7
ROB0042255	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	D7
ROB0042264	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	D7

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042265	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	D7
ROB0042266	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU732 - Yellowbox Grassy Woodlamd consistent within the BioNet Vegetation Classification	D7
ROB0042267	Ecological rehabilitation	Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	D7
ROB0042268	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	D7
ROB0042269	Ecological rehabilitation	Vegetation Structure - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	D7
ROB0042250	Groundwater	Groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm.	D7
ROB0042252	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	D7
ROB0042263	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	D7
ROB0042246	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	D7
ROB0042249	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	D7
ROB0042259	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	D7

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042260	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	D7
ROB0042256	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	D7
ROB0042257	Management of waste and process materials	Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	D7
ROB0042243	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	D7
ROB0042245	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	D7
ROB0042272	Retention of infrastructure	Any retained infrastructure is safe and does not pose any hazard to the community.	D7
ROB0042251	Surface water	Mine water & sediment dams (excluding approved final voids) to be backfilled and integrated into the final landform. Sediment dams surrounding the beneficiation area are desludged with carbonaceous material removed and placed in overburden areas 2m below surface	D7
ROB0042258	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and Environmental Protection Licence.	D7
ROB0042244	Water approvals	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.	D7
ROB0042289	Bushfire	Appropriate bushfire hazard controls (where required) will implemented following advice from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	F1
ROB0042288	Bushfire	The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation	F1

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042274	Ecological rehabilitation	Drainage line / re-instated creeklines are borded by a self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	F1
ROB0042276	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	F1
ROB0042283	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	F1
ROB0042291	Ecological rehabilitation	Vegetation Composition - Bordering vegetation composition of the rehabilitation is recognisable as (BVT) HU732 - Yellowbox Grassy Woodland consistent within the BioNet Vegetation Classification	F1
ROB0042292	Ecological rehabilitation	Vegetation Structure - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	F1
ROB0042280	Groundwater	Groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm.	F1
ROB0042282	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	F1
ROB0042290	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	F1
ROB0042275	Landform stability	Drainage lines are restored in accordance with the principles, concepts and techniques described in 'A rehabilitation manual for Australian streams (Rutherford,I; Jerie, K; Marsh, N, 2000) and in alignment to the approved conceptual final landform	F1
ROB0042277	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	F1

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042286	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	F1
ROB0042287	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	F1
ROB0042278	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	F1
ROB0042284	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	F1
ROB0042270	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	F1
ROB0042294	Retention of infrastructure	All infrastructure that is to remain as part of the final land use benefits from the relevant approvals (e.g. development consent and / or licence/lease/binding agreement, etc)	F1
ROB0042271	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	F1
ROB0042273	Retention of infrastructure	Any retained infrastructure is safe and does not pose any hazard to the community.	F1
ROB0042281	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	F1
ROB0042285	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through the constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and Environmental Protection Licence.	F1
ROB0042279	Water approvals	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.	F1

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042310	Bushfire	Appropriate bushfire hazard controls (where required) will implemented following advice from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	F2
ROB0042309	Bushfire	The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation	F2
ROB0042297	Ecological rehabilitation	Drainage line / re-instated creeklines are borded by a self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	F2
ROB0042299	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	F2
ROB0042304	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	F2
ROB0042312	Ecological rehabilitation	Vegetation Composition - Bordering vegetation composition of the rehabilitation is recognisable as (BVT) HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	F2
ROB0042313	Ecological rehabilitation	Vegetation Structure - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	F2
ROB0042301	Groundwater	Groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm.	F2
ROB0042303	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	F2
ROB0042311	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	F2

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042298	Landform stability	Drainage lines are restored in accordance with the principles, concepts and techniques described in 'A rehabilitation manual for Australian streams (Rutherford,I; Jerie, K; Marsh, N, 2000) and in alignment to the approved conceptual final landform	F2
ROB0042300	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	F2
ROB0042307	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	F2
ROB0042308	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	F2
ROB0042305	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	F2
ROB0042293	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	F2
ROB0042315	Retention of infrastructure	All infrastructure that is to remain as part of the final land use benefits from the relevant approvals (e.g. development consent and / or licence/lease/binding agreement, etc)	F2
ROB0042295	Retention of infrastructure	All surface infrastructure is to be decommissioned and removed unless approved and authorised by The Secretary. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	F2
ROB0042296	Retention of infrastructure	Any retained infrastructure is safe and does not pose any hazard to the community.	F2
ROB0042302	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	F2
ROB0042306	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through the constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and Environmental Protection Licence.	F2

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042336	Bushfire	Appropriate bushfire hazard controls (where required) will implemented following advice from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	F4
ROB0042335	Bushfire	The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation	F4
ROB0042318	Ecological rehabilitation	Drainage line / re-instated creekline is boarded with a of self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU697 - Mugga Ironbark Open Forest	F4
ROB0042319	Ecological rehabilitation	Drainage line / re-instated creeklines are borded by a self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	F4
ROB0042320	Ecological rehabilitation	Drainage line / re-instated creeklines are borded by a self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	F4
ROB0042322	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU697 - Mugga Ironbark Open Forest established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	F4
ROB0042323	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	F4
ROB0042324	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	F4

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042330	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	F4
ROB0042338	Ecological rehabilitation	Vegetation Composition - Bordering vegetation composition of the rehabilitation is recognisable as (BVT) HU732 - Yellowbox Grassy Woodland consistent within the BioNet Vegetation Classification	F4
ROB0042339	Ecological rehabilitation	Vegetation Composition - Bordering vegetation composition of the rehabilitation is recognisable as (BVT) HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	F4
ROB0042340	Ecological rehabilitation	Vegetation Composition - Bordering vegetation composition of the rehabilitation is recognisable as HU697 - Mugga Ironbark Open Forest consistent within the BioNet Vegetation Classification	F4
ROB0042341	Ecological rehabilitation	Vegetation Structure - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU697) within the BioNet Vegetation Classification.	F4
ROB0042342	Ecological rehabilitation	Vegetation Structure - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	F4
ROB0042343	Ecological rehabilitation	Vegetation Structure - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	F4
ROB0042326	Groundwater	Groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm.	F4
ROB0042329	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	F4
ROB0042337	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	F4
ROB0042321	Landform stability	Drainage lines are restored in accordance with the principles, concepts and techniques described in 'A rehabilitation manual for Australian streams (Rutherford,I; Jerie, K; Marsh, N, 2000) and in alignment to the approved conceptual final landform	F4
ROB0042325	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	F4

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042333	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	F4
ROB0042334	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	F4
ROB0042331	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	F4
ROB0042314	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	F4
ROB0042345	Retention of infrastructure	All infrastructure that is to remain as part of the final land use benefits from the relevant approvals (e.g. development consent and / or licence/lease/binding agreement, etc)	F4
ROB0042316	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	F4
ROB0042317	Retention of infrastructure	Any retained infrastructure is safe and does not pose any hazard to the community.	F4
ROB0042327	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	F4
ROB0042328	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform. Eds Lake is designed to be a free draining depression within the final landform	F4
ROB0042332	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through the constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and Environmental Protection Licence.	F4
ROB0042361	Bushfire	Appropriate bushfire hazard controls (where required) will implemented following advice from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	F7

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042360	Bushfire	The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation	F7
ROB0042348	Ecological rehabilitation	Drainage line / re-instated creeklines are borded by a self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	F7
ROB0042350	Ecological rehabilitation	Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	F7
ROB0042355	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	F7
ROB0042363	Ecological rehabilitation	Vegetation Composition - Bordering vegetation composition of the rehabilitation is recognisable as (BVT) HU732 - Yellowbox Grassy Woodland consistent within the BioNet Vegetation Classification	F7
ROB0042364	Ecological rehabilitation	Vegetation Structure - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	F7
ROB0042352	Groundwater	Groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm.	F7
ROB0042354	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	F7
ROB0042362	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	F7
ROB0042349	Landform stability	Drainage lines are restored in accordance with the principles, concepts and techniques described in 'A rehabilitation manual for Australian streams (Rutherford,I; Jerie, K; Marsh, N, 2000) and in alignment to the approved conceptual final landform	F7

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042351	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	F7
ROB0042358	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	F7
ROB0042359	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	F7
ROB0042356	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	F7
ROB0042344	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	F7
ROB0042366	Retention of infrastructure	All infrastructure that is to remain as part of the final land use benefits from the relevant approvals (e.g. development consent and / or licence/lease/binding agreement, etc)	F7
ROB0042346	Retention of infrastructure	All surface infrastructure is to be decommissioned and removed unless approved and authorised by The Secretary. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	F7
ROB0042347	Retention of infrastructure	Any retained infrastructure is safe and does not pose any hazard to the community.	F7
ROB0042353	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	F7
ROB0042357	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through the constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and Environmental Protection Licence.	F7
ROB0042375	Bushfire	The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation	I1

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042371	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	I1
ROB0042376	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	I1
ROB0042369	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	I1
ROB0042374	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	I1
ROB0042370	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	I1
ROB0042372	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	I1
ROB0042365	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	I1
ROB0042377	Retention of infrastructure	All infrastructure that is to remain as part of the final land use benefits from the relevant approvals (e.g. development consent and / or licence/lease/binding agreement, etc)	I1
ROB0042367	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	I1
ROB0042368	Retention of infrastructure	Any retained infrastructure is safe and does not pose any hazard to the community.	I1
ROB0042373	Surface water	Security Fences installed on boundary do not inhibit surface water flows and incorporate flood gates as required over creek and drainage lines of which are installed to Australian Standards	I1

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042130	Bushfire	Appropriate bushfire hazard controls (where required) to be implemented following advice from the NSW Rural Fire Service.	J5
ROB0042129	Bushfire	The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation	J5
ROB0042123	Groundwater	Final voids perform as groundwater sinks, limiting the flow of water from the waste rock emplacement areas to the Wilpinjong Creek and surrounding environment	J5
ROB0042124	Groundwater	Groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm.	J5
ROB0042125	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	J5
ROB0042378	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	J5
ROB0042126	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	J5
ROB0042121	Landform stability	Final void highwalls are designed and constructed incorporating geotechnical design and factors of safety for long term stability as a final landform feature generally in accordance with the approved conceptual final landform design	J5
ROB0042119	Landform stability	Final voids incorporate micro-relief and integrate with surrounding natural landforms and adjacent mine rehabilitation. Final Voids are designed and constructed to minimise to the greatest extent practicable size and depth	J5
ROB0042127	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	J5
ROB0042182	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous and residual carbonaceous material removed from surface and placed at least 2m below the surface of the backfilled mine void landform so as to not pose a threat of environmental harm or restrict the intended final land use.	J5

Rehabilitation Objective Number	Rehabilitation Objective Category	Rehabilitation Objectives	Spatial Reference (e.g. A3)
ROB0042118	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	J5
ROB0042122	Surface water	Final voids are constructed with safety bunds around final voids and will act as groundwater sinks, limiting the flow of water from the waste rock emplacement areas to the Wilpinjong Creek and surrounding environment	J5
ROB0042120	Surface water	Final voids are designed and constructed to minimise to the greatest extent practicable the drainage catchment of final voids.	J5
ROB0042128	Water approvals	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.	J5

APPENDIX F

Draft Rehabilitation Completion Criteria

Draft Rehabilitation Completion Criteria

During the WEP approval process, the NSW Government revised the final rehabilitation and land use for the mine site. As a result, and in accordance with Condition 37, Schedule 3 of Development Consent SSD 6764, WCPL has developed suitable rehabilitation and completion criteria for prescribed Biometric Vegetation Types (BVTs) and Regent Honeyeater habitat in consultation with the BCD, Department of Agriculture, Water and the Environment (DAWE) and DPIE (for the BVTs listed below);

- HU547 – Fuzzy Box Woodland;
- HU697 – Mugga Ironbark-Black Cypress Pine Open Forest;
- HU732 – Yellow Box Grassy Woodland;
- HU824 – White Box-Black Cypress Pine Shrubby Woodland; and
- HU825 – Narrow-leaved Ironbark-Black Cypress Pine Grass Woodland

The performance and completion criteria for the above BVTs was endorsed in June 2021 by BCD. With this endorsement. Rehabilitation completion criteria applies to rehabilitation domains which have been established and rehabilitated 10 years post landform establishment. With respect to the Regent Honeyeater habitat the relevant criteria is suitable progress against the Native Over-Storey Performance Criteria.

The site attribute values for each Framework Biological Assessment (FBA) plot will be averaged in order to determine the site value if a vegetation zone and the average Overall Site Value Score should be equal to or greater than 7 based on Generating biodiversity credits for ecological rehabilitation of previously mined land (OEH, 2015).

WCPL's rehabilitation completion criteria has been developed based on the BioMetric methodology for assessing ecosystem function (Gibbons *et al.*, 2009). Landscape Function Analysis (LFA) (Tongway and Hindley 2004) and remote sensing to determine landform stability, slope, erosion and germination success using drone and/or LIDAR will be used for assessing rehabilitation progress and success.

The ongoing refinement of the rehabilitation completion criteria will involve, but not limited to, results from research and rehabilitation trials and monitoring results from the various monitoring programs as outlined in **Section 8.0**

Final Land Use Domain	Mining Domain	Spatial Reference (e.g. A3)	Rehabilitation Objective Category	Rehabilitation Objectives	Draft Indicator	Draft Rehabilitation Completion Criteria	Example Justification/Validation Methods
Final void	Active mining area (open cut void)	J5	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of all services (power, water, communications) that have been connected on the site as part of the operation.	All utility infrastructure removed	Statement provided, utility service disconnection record / notification
Final void	Active mining area (open cut void)	J5	Landform stability	Final voids incorporate micro-relief and integrate with surrounding natural landforms and adjacent mine rehabilitation. Final Voids are designed and constructed to minimise to the greatest extent practicable size and depth	Final voids are constructed generally in accordance with the approved conceptual final landform design which incorporates minimising to the greatest extent practicable the size and depth of final voids	Final voids are constructed generally in accordance with the approved conceptual final landform designs and modelling	Statement and designs provided, survey records validate to design
Final void	Active mining area (open cut void)	J5	Surface water	Final voids are designed and constructed to minimise to the greatest extent practicable the drainage catchment of final voids.	Final voids are constructed generally in accordance with the approved conceptual final landform design to minimise surface water inflows to the final voids.	Final voids are constructed generally in accordance with the approved conceptual final landform designs and modelling	Statement and designs provided, survey records validate to design
Final void	Active mining area (open cut void)	J5	Landform stability	Final void highwalls are designed and constructed incorporating geotechnical design and factors of safety for long term stability as a final landform feature generally in accordance with the approved conceptual final landform design	Final voids are constructed generally in accordance with the approved conceptual final landform design	Final voids are constructed generally in accordance with the approved conceptual final landform designs and modelling	Statement and designs provided, survey records validate to design
Final void	Active mining area (open cut void)	J5	Surface water	Final voids are constructed with safety bunds around final voids and will act as groundwater sinks, limiting the flow of water from the waste rock emplacement areas to the Wilpinjong Creek and surrounding environment	Installation of safety bund and associated safety infrastructure (i.e signage and fencing). groundwater records and modelling indicates voids are groundwater sinks.	Final voids are constructed generally in accordance with the approved conceptual final landform designs, have installed safety bunds, fences and signage. groundwater modelling and monitoring indicates voids are groundwater sinks.	Flood study and groundwater regime behaviour reports (post mining) provided by relevant surface water and groundwater specialist in the Final Void Management Plan
Final void	Active mining area (open cut void)	J5	groundwater	Final Voids perform as groundwater sinks, limiting the flow of water from the waste rock emplacement areas to the Wilpinjong Creek and surrounding environment	There is no evidence of groundwater accumulation (the voids perform as groundwater sinks) as per groundwater monitoring regime and reporting by groundwater specialist. Results compared and comply with the sites groundwater model	Final Voids perform as groundwater sinks, limiting the flow of water from the waste rock emplacement areas to the Wilpinjong Creek and surrounding environment	groundwater modelling and monitoring validates objective. Flood study and groundwater regime behaviour reports (post mining) provided by relevant surface water and groundwater specialist in the Final Void Management Plan Survey plan of restored landforms, final design reports, rehabilitation and groundwater monitoring reports.
Final void	Active mining area (open cut void)	J5	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design.	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Final void	Active mining area (open cut void)	J5	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design.	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Erosion riling to be generally <0.3m (w). No gully erosion.	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Final void	Active mining area (open cut void)	J5	Water approvals	Final Voids are appropriately licensed and where required ensure sufficient license shares are held in the water sourc(s) to account for water take.	Final landform and voids considers advice from relevant Government Agency whether sufficient licence shares are available in the water source to account for water stored in voids in the final landform	Water approvals / licenses are granted by relevant NSW Government Agency	Confirmation from relevant Government Agency that relevant water approvals / licences are able to be granted
Final void	Active mining area (open cut void)	J5	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of all services (power, water, communications) that have been connected on the site as part of the operation.	All utility infrastructure removed	Statement provided, utility service disconnectiion record / notification
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Final voids and batters incorporate micro-relief and integrate with surrounding nautral landforms and adjacent mine rehabiliation. Final Void batters are designed and constructed to minimise to the greatest extent practicable size and depth	Final voids and batters are constructed generally in accordance with the approved conceptual final landform design which incorporates minimising to the greatest extent practicable the size and depth of final voids	Final void batters are constructed generally in accordance with the approved conceptual final landform designs and modelling	Statement and designs provided, survey records validate to design
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Final voids catchments and associated batters are designed and constructed to minimise to the greatest extent practicable the drainage catchment of final voids.	Final voids and batters are constructed generally in accordance with the approved conceptual final landform design to minimise surface water inflows to the final voids.	Final voids are constructed generally in accordance with the approved conceptual final landform designs and modelling	Statement and designs provided, survey records validate to design
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Final void highwalls and batters are designed and constructed incorporating geotechnical design and factors of safety for long term stability as a final landform feature generally in accordance with the approved conceptual final landform design	Final voids and batters are constructed generally in accordance with the approved conceptual final landform design	Final voids are constructed generally in accordance with the approved conceptual final landform designs and modelling	Statement and designs provided, survey records validate to design
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Rehabilitate a total of 54.20 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland on batters and areas above the high water level.	Total area rehabilitated amounting to 54.20ha of HU824 as confirmed by survey and ecological verification	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological & Survey Reports

				Vegetation Composition - The vegetation composition of the rehabilitation is recognisable as HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU824 plant community.	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation				
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU824) or an ongoing trent 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 type (HU824).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.
				Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Final Void embankments have the Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU824) HU824 Native Species Richness (No. Species) - Completion 13.5-30.5, Performance 6.75-15.25 Native Over Storey Cover (%) - Completion 3.18-61, Performance 1.59-61 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 0-36, Performance 0-36 Native Ground Cover Shrubs (%) - Completion 1.25 -20, Performance 1-10 Native Ground Cover Other (%) - Completion 0.5-76, Performance 0.25-76 Total Length Fallen Logs (m) - Completion 16.5, Performance 8. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design.	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design.	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion.	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Water approvals	Final Voids are appropriately licensed and where required ensure sufficient license shares are held in the water sourc(s) to account for water take.	Final landform and voids considers advice from relevant Government Agency whether sufficient licence shares are available in the water source to account for water stored in voids in the final landform	Water approvals / licenses are granted by relevant NSW Government Agency	Confirmation from relevant Government Agency that relevant water approvals / licences are able to be granted
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material is placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design.	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm. All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 or Environmental Protection Licence Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings Removal of Rail facilities Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment All utility infrastructure removed Footings removed Rail Infrastructure removed and backfilled Cores removed and placed in overburden emplacement areas	Independent hydrological assessement report. groundwater monitoring reports and sampling studies Statements provided, utility service disconnection record. Survey validates completion of removal works
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Removal of infrastructure				
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use Heritage obligations as required under the *Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc* have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Rehabilitate a total of 1,492 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	Total area rehabilitated amounting to 1,492ha of HU824 as confirmed by survey and ecological verification	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Composition -** The vegetation composition of the rehabilitation is recognisable as HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU824 plant community.	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU824) or an ongoing trent 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 type (HU824).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable.Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU824) HU824 Native Species Richness (No. Species) - Completion 13.5-30.5, Performance 6.75-15.25 Native Over Storey Cover (%) - Completion 3.18-61, Performance 1.59-61 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 0-36, Performance 0-36 Native Ground Cover Shrubs (%) - Completion 1.25 -20, Performance 1-10 Native Ground Cover Other (%) - Completion 0.5-76, Performance 0.25-76 Total Length Fallen Logs (m) - Completion 16.5, Performance 8. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material is placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design.	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm. All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 or Environmental Protection Licence Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment All utility infrastructure removed Footings removed Cores removed and placed in overburden emplacement areas	Independent hydrological assessement report. groundwater monitoring reports and sampling studies Statements provided, utility service disconnection record. Survey validates completion of removal works
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Removal of infrastructure				
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use Heritage obligations as required under the *Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc* have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Rehabilitate a total of 10.99 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU547 - Fuzzybox Woodland	Total area rehabilitated amounting to 10.99ha of HU547 as confirmed by survey and ecological verification	Native plant species are characteristic of HU547 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Composition -** The vegetation composition of the rehabilitation is recognisable as HU547 - FuzzyBox Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU824 plant community.	Native plant species are characteristic of HU547 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU547) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU547) or an ongoing trent 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 type (HU547).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

				Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU547 - Fuzzy Box Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU547) HU547 Native Species Richness (No. Species) - Completion 7.5-22.5, Performance 3.75-11.25 Native Over Storey Cover (%) - Completion 3.75-52, Performance 1.88-52 Native Mid Storey Cover (%) - Completion 1.25-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 1-100, Performance 0.5-100 Native Ground Cover Shrubs (%) - Completion 0.5-20, Performance 0-10 Native Ground Cover Other (%) - Completion 0.5-68 Performance 0.25-68 Total Length Fallen Logs (m) - Completion 9.56, Performance 4.78. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation				
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform, so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design.	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings Removal of Rail facilities Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas	All utility infrastructure removed Footings removed Rail Infrastructure removed and backfilled Cores removed and placed in overburden emplacement areas	Statements provided, utility service disconnection record. Survey validates completion of removal works
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Rehabilitate a total of 849.23 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	Total area rehabilitated amounting to 849.23ha of HU732 as confirmed by survey and ecological verification	Native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Composition** - The vegetation composition of the rehabilitation is recognisable as HU732 - Yellowbox Grassy Woodlamd consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU732 plant community.	Native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU732) or an ongoing trent 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 type (HU732).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU732) HU732 Native Species Richness (No. Species) - Completion 8.5-31, Performance 4.25-11.25 Native Over Storey Cover (%) - Completion 2.25-46, Performance 1.88-46 Native Mid Storey Cover (%) - Completion 0.5-20, Performance 0-20 Native Ground Cover Grass (%) - Completion 0.5-100, Performance 0.25-100 Native Ground Cover Shrubs (%) - Completion 0.5-20, Performance 0-10 Native Ground Cover Other (%) - Completion 0.5-76 Performance 0.25-76 Total Length Fallen Logs (m) - Completion 6.25, Performance 3.13. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design.	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas	All utility infrastructure removed Footings removed Cores removed and placed in overburden emplacement areas	Statements provided, utility service disconnection record. Survey validates completion of removal works

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Rehabilitate a total of 276.5 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU697 - Mugga Ironbark Open Forest	Total area rehabilitated amounting to 276.5ha of HU697 as confirmed by survey and ecological verification	Native plant species are characteristic of HU697 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Composition** - The vegetation composition of the rehabilitation is recognisable as HU697 - Mugga Ironbark Open Forest consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU697 plant community.	Native plant species are characteristic of HU697 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU697) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU697) or an ongoing trent 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 type (HU697).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

				Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU697 - Mugga Ironbark Open Forest established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU697) HU697 Native Species Richness (No. Species) - Completion 11-25, Performance 5.50-12.50 Native Over Storey Cover (%) - Completion 4.25-46, Performance 2.13-46 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 1-24, Performance 0.5-24 Native Ground Cover Shrubs (%) - Completion 1.25-20, Performance 1-10 Native Ground Cover Other (%) - Completion 0-40, Performance 0-40 Total Length Fallen Logs (m) - Completion 9.5, Performance 4.75. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation				
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design.	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas	All utility infrastructure removed Footings removed Cores removed and placed in overburden emplacement areas	Statements provided, utility service disconnection record. Survey validates completion of removal works
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Rehabilitate a total of 8.8 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU825 - Narrow-leaved Ironbark Grass Woodland	Total area rehabilitated amounting to 8.8ha of HU825 as confirmed by survey and ecological verification	Native plant species are characteristic of HU825 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Composition** - The vegetation composition of the rehabilitation is recognisable as HU825 - Narrow-leaved Ironbark Grass Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU825 plant community.	Native plant species are characteristic of HU825 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU825) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU825) or an ongoing trent 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 type (HU825).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU825 - Narrow-leaved Ironbark Grass Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU825) HU825 Native Species Richness (No. Species) - Completion 13.5-26, Performance 6.75-13 Native Over Storey Cover (%) - Completion 4.13-54, Performance 2.06-54 Native Mid Storey Cover (%) - Completion 2.75-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 0-100, Performance 0-100 Native Ground Cover Shrubs (%) - Completion 1.25-60, Performance 1-30 Native Ground Cover Other (%) - Completion 0-68, Performance 0-68 Total Length Fallen Logs (m) - Completion 14.50, Performance 7.25. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. Tailings dams to be capped with compacted inert overburden material to a minimum of 2m	Tailings dam rehabilitation is capped with compacted inert overburden material to a minimum depth of cover of 2m prior to final profiling and rehabilitated so not to pose a threat of environmental harm or restrict the intended final land use	Tailings dams are capped appropriately in accordance with capping design as confirmed by survey against the final landform design	Retain all survey plans of restored landforms, final design reports and photographic records.

Rehabilitation biodiversity offset area	Tailings storage facility	D2	Management of waste and process materials	Residual waste materials stored on site (e.g. tailings) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. Measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design.	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Landform stability	Final landform of tailings dams maximise geotechnical performance, stability and hydrological function prior to capping activities	Suitably qualified tailings engineer to confirm sufficient strength within tailings dams has been achieved prior to capping activities	Tailings engineer confirms sufficient strength of tailings has been achieved and tailings dam is ready for capping	As required by design report for tailings storage facility. Verification report provided by tailings engineer.
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Rehabilitation biodiversity offset area	Tailings storage facility	D2	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.

Rehabilitation biodiversity offset area	Tailings storage facility	D2	groundwater	groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm. All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 or Environmental Protection Licence Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings and RO Plant Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment All utility infrastructure removed Footings removed Cores removed and placed in overburden emplacement areas	Independent hydrological assessement report. groundwater monitoring reports and sampling studies Statements provided, utility service disconnection record. Survey validates completion of removal works
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Removal of infrastructure				
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use Heritage obligations as required under the *Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc* have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Ecological rehabilitation	Rehabilitate a total of 54.32 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	Total area rehabilitated amounting to 54.32ha of HU824 as confirmed by survey and ecological verification	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Ecological rehabilitation	**Vegetation Composition -** The vegetation composition of the rehabilitation is recognisable as HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU824 plant community.	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU824) or an ongoing trent 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 type (HU824).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

				Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable.Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU824) HU824 Native Species Richness (No. Species) - Completion 13.5-30.5, Performance 6.75-15.25 Native Over Storey Cover (%) - Completion 3.18-61, Performance 1.59-61 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 0-36, Performance 0-36 Native Ground Cover Shrubs (%) - Completion 1.25 -20, Performance 1-10 Native Ground Cover Other (%) - Completion 0.5-76, Performance 0.25-76 Total Length Fallen Logs (m) - Completion 16.5, Performance 8. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Ecological rehabilitation				

Rehabilitation biodiversity offset area	Tailings storage facility	D2	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Tailings storage facility	D2	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Tailings storage facility	D2	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous and residual carbonaceous material removed from surface and placed at least 2m below the surface of the backfilled mine void landform so as to not pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform, so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc. Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained

Rehabilitation biodiversity offset area	Infrastructure area	D1	Management of waste and process materials	Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	Visual - Removal of wastes from infrastructure area and offsite to a licensed and approved waste facility. Visual - Removal of tyres from infrastructure area and disposed of in accordance with EPL and within backfilled mining areas Quality assurance records for the removal of these materials provided and recorded.	Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	Disposal records and reports Survey reports confirming removal with aerial documentation Pre and Post removal photographs
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Rehabilitation biodiversity offset area	Infrastructure area	D1	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Rehabilitation biodiversity offset area	Infrastructure area	D1	groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies
Rehabilitation biodiversity offset area	Infrastructure area	D1	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas	All utility infrastructure removed Footings removed Cores removed and placed in overburden emplacement areas	Statements provided, utility service disconnection record. Survey validates completion of removal works

Rehabilitation biodiversity offset area	Infrastructure area	D1	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Rehabilitate a total of 1.32 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU697 - Mugga Ironbark Open Forest	Total area rehabilitated amounting to 1.32ha of HU697 as confirmed by survey and ecological verification	Native plant species are characteristic of HU697 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	**Vegetation Composition** - The vegetation composition of the rehabilitation is recognisable as HU697 - Mugga Ironbark Open Forest consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU697 plant community.	Native plant species are characteristic of HU697 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU697) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU697) or an ongoing trent 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 type (HU697).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

				Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU697 - Mugga Ironbark Open Forest established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU697) HU697 Native Species Richness (No. Species) - Completion 11-25, Performance 5.50-12.50 Native Over Storey Cover (%) - Completion 4.25-46, Performance 2.13-46 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 1-24, Performance 0.5-24 Native Ground Cover Shrubs (%) - Completion 1.25-20, Performance 1-10 Native Ground Cover Other (%) - Completion 0-40, Performance 0-40 Total Length Fallen Logs (m) - Completion 9.5, Performance 4.75. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation				

Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Infrastructure area	D1	Surface water	Mine water & sediment dams (excluding approved final voids) to be backfilled and integrated into the final landform. Sediment dams surrounding the infrastructure areas are desludged with carbonaceous material removed and placed in overburden areas 2m below surface	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Rehabilitation biodiversity offset area	Infrastructure area	D1	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Infrastructure area	D1	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous and residual carbonaceous material removed from surface and placed at least 2m below the surface of the backfilled mine void landform so as to not pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform, so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Rehabilitation biodiversity offset area	Infrastructure area	D1	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc. Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Rehabilitation biodiversity offset area	Infrastructure area	D1	Management of waste and process materials	Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	Visual - Removal of wastes from infrastructure area and offsite to a licensed and approved waste facility. Visual - Removal of tyres from infrastructure area and disposed of in accordance with EPL and within backfilled mining areas Quality assurance records for the removal of these materials provided and recorded.	Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	Disposal records and reports Survey reports confirming removal with aerial documentation Pre and Post removal photographs
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping

Rehabilitation biodiversity offset area	Infrastructure area	D1	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies
Rehabilitation biodiversity offset area	Infrastructure area	D1	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings and sealed road materials Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas	All utility infrastructure removed Footings removed and disposed of Sealed access road removed Cores removed and placed in overburden emplacement areas	Statements provided, utility service disconnection record. Survey validates completion of removal works
Rehabilitation biodiversity offset area	Infrastructure area	D1	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use (Access Road) Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Rehabilitate a total of 42.52 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	Total area rehabilitated amounting to 42.52 of HU732 as confirmed by survey and ecological verification	Native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	**Vegetation Composition** - The vegetation composition of the rehabilitation is recognisable as HU732 - Yellowbox Grassy Woodlamd consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU732 plant community.	Native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU732) or an ongoing trent 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 type (HU732).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

				Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU732) HU732 Native Species Richness (No. Species) - Completion 8.5-31, Performance 4.25-11.25 Native Over Storey Cover (%) - Completion 2.25-46, Performance 1.88-46 Native Mid Storey Cover (%) - Completion 0.5-20, Performance 0-20 Native Ground Cover Grass (%) - Completion 0.5-100, Performance 0.25-100 Native Ground Cover Shrubs (%) - Completion 0.5-20, Performance 0-10 Native Ground Cover Other (%) - Completion 0.5-76 Performance 0.25-76 Total Length Fallen Logs (m) - Completion 6.25, Performance 3.13. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation				

Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Infrastructure area	D1	Surface water	Mine water & sediment dams (excluding approved final voids) to be backfilled and integrated into the final landform. Sediment dams surrounding the infrastructure areas are desludged with carbonaceous material removed and placed in overburden areas 2m below surface	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Rehabilitation biodiversity offset area	Infrastructure area	D1	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Infrastructure area	D1	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous and residual carbonaceous material removed from surface and placed at least 2m below the surface of the backfilled mine void landform so as to not pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform, so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Rehabilitation biodiversity offset area	Infrastructure area	D1	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc. Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Rehabilitation biodiversity offset area	Infrastructure area	D1	Management of waste and process materials	Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	Visual - Removal of wastes from infrastructure area and offsite to a licensed and approved waste facility. Visual - Removal of tyres from infrastructure area and disposed of in accordance with EPL and within backfilled mining areas Quality assurance records for the removal of these materials provided and recorded.	Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	Disposal records and reports Survey reports confirming removal with aerial documentation Pre and Post removal photographs
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping

Rehabilitation biodiversity offset area	Infrastructure area	D1	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies
Rehabilitation biodiversity offset area	Infrastructure area	D1	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings and sealed road materials Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas	All utility infrastructure removed Footings removed and disposed of Sealed access road removed Cores removed and placed in overburden emplacement areas	Statements provided, utility service disconnection record. Survey validates completion of removal works
Rehabilitation biodiversity offset area	Infrastructure area	D1	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use (Access Road) Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Rehabilitate a total of 79.34 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	Total area rehabilitated amounting to 79.34ha of HU824 as confirmed by survey and ecological verification	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	**Vegetation Composition -** The vegetation composition of the rehabilitation is recognisable as HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU824 plant community.	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU824) or an ongoing trent 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 type (HU824).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable.Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU824) HU824 Native Species Richness (No. Species) - Completion 13.5-30.5, Performance 6.75-15.25 Native Over Storey Cover (%) - Completion 3.18-61, Performance 1.59-61 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 0-36, Performance 0-36 Native Ground Cover Shrubs (%) - Completion 1.25 -20, Performance 1-10 Native Ground Cover Other (%) - Completion 0.5-76, Performance 0.25-76 Total Length Fallen Logs (m) - Completion 16.5, Performance 8. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Infrastructure area	D1	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Infrastructure area	D7	Surface water	Mine water & sediment dams (excluding approved final voids) to be backfilled and integrated into the final landform. Sediment dams surrounding the infrastructure areas are desludged with carbonaceous material removed and placed in overburden areas 2m below surface	All mine & sediment dams backfilled	Mine water & sediment dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Rehabilitation biodiversity offset area	Infrastructure area	D1	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Infrastructure area	D1	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Infrastructure area	D1	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous and residual carbonaceous material removed from surface and placed at least 2m below the surface of the backfilled mine void landform so as to not pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform, so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Rehabilitation biodiversity offset area	Beneficiation facility	D7	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc. Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Management of waste and process materials	Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	Visual - Removal of wastes from infrastructure area and offsite to a licensed and approved waste facility. Visual - Removal of tyres from infrastructure area and disposed of in accordance with EPL and within backfilled mining areas Quality assurance records for the removal of these materials provided and recorded.	Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	Disposal records and reports Survey reports confirming removal with aerial documentation Pre and Post removal photographs
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans of restored landforms, final design reports of restored landforms and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping

Rehabilitation biodiversity offset area	Beneficiation facility	D7	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies
				All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of all services (power, water, communications) that have been connected on the site as part of the operation	All utility infrastructure removed	Statements provided, utility service disconnection record.
					Removal of building footings, beneficiation buildings and associated infrastructure (rail load out, converyors)	Footings removed and disposed of	Survey validates completion of removal works
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Removal of infrastructure		Removal of all water management infrastructure (pumps, pipes, power)	Cores removed and placed in overburden emplacement areas	
					Drill cores removed and disposed of in overburden emplacement areas		
				All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured	Hazards isolated and secured	Statement provided by suitably qualified engineer
					Damage to access tracks has been repaired and stabilised	Repairs Completed	As-constructed final landform plan and survey records
					Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use (Access Road)	Permits and approval documents issued, archival reports (where required) complete and submitted.	Copy of relevant approvals
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Retention of infrastructure		Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use.	
						The Secretary has approved the retention of nominated infrastructure	
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	Rehabilitate a total of 7.05 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	Total area rehabilitated amounting to 7.05 of HU824 as confirmed by survey and ecological verification	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	**Vegetation Composition -** The vegetation composition of the rehabilitation is recognisable as HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU824 plant community.	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU824) or an ongoing trent 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 type (HU824).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable.Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU824) HU824 Native Species Richness (No. Species) - Completion 13.5-30.5, Performance 6.75-15.25 Native Over Storey Cover (%) - Completion 3.18-61, Performance 1.59-61 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 0-36, Performance 0-36 Native Ground Cover Shrubs (%) - Completion 1.25 -20, Performance 1-10 Native Ground Cover Other (%) - Completion 0.5-76, Performance 0.25-76 Total Length Fallen Logs (m) - Completion 16.5, Performance 8. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Beneficiation facility	D7	Surface water	Mine water & sediment dams (excluding approved final voids) to be backfilled and integrated into the final landform. Sediment dams surrounding the beneficiation area are desludged with carbonaceous material removed and placed in overburden areas 2m below surface	All mine & sediment dams backfilled	Mine water & sediment dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous and residual carbonaceous material removed from surface and placed at least 2m below the surface of the backfilled mine void landform so as to not pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform, so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Rehabilitation biodiversity offset area	Beneficiation facility	D7	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc. Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
				Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	Visual - Removal of wastes from infrastructure area and offsite to a licensed and approved waste facility. Visual - Removal of tyres from infrastructure area and disposed of in accordance with EPL and within backfilled mining areas Quality assurance records for the removal of these materials provided and recorded.	Residual wastes associated with infrastructure areas and maintenance (e.g. hydrocarbons, machinery oils, office wastes, septic, and tyres) are removed from the infrastructure areas and disposed of in accordance with EPL and through a licensed and approved waste management facility.	Disposal records and reports Survey reports confirming removal with aerial documentation Pre and Post removal photographs
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Management of waste and process materials				
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.

Rehabilitation biodiversity offset area	Beneficiation facility	D7	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Groundwater	groundwater quality meets the requirement of relevant development consent/EPL and does not present a risk of environmental harm. All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 or Environmental Protection Licence Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings, beneficiation buildings and associated infrastructure (rail load out, converyors)	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment All utility infrastructure removed Footings removed and disposed of Cores removed and placed in overburden emplacement areas	Independent hydrological assessement report. groundwater monitoring reports and sampling studies Statements provided, utility service disconnection record. Survey validates completion of removal works
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Removal of infrastructure		Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas		

Rehabilitation biodiversity offset area	Beneficiation facility	D7	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use (Access Road) Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	Rehabilitate a total of 20.79 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	Total area rehabilitated amounting to 20.79 of HU732 as confirmed by survey and ecological verification	Native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	**Vegetation Composition** - The vegetation composition of the rehabilitation is recognisable as HU732 - Yellowbox Grassy Woodlamd consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU732 plant community.	Native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU732) or an ongoing trent 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 type (HU732).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

				Ecosystem Function - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU732) HU732 Native Species Richness (No. Species) - Completion 8.5-31, Performance 4.25-11.25 Native Over Storey Cover (%) - Completion 2.25-46, Performance 1.88-46 Native Mid Storey Cover (%) - Completion 0.5-20, Performance 0-20 Native Ground Cover Grass (%) - Completion 0.5-100, Performance 0.25-100 Native Ground Cover Shrubs (%) - Completion 0.5-20, Performance 0-10 Native Ground Cover Other (%) - Completion 0.5-76 Performance 0.25-76 Total Length Fallen Logs (m) - Completion 6.25, Performance 3.13. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation				
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Beneficiation facility	D7	Surface water	Mine water & sediment dams (excluding approved final voids) to be backfilled and integrated into the final landform. Sediment dams surrounding the beneficiation area are desludged with carbonaceous material removed and placed in overburden areas 2m below surface	All mine & sediment dams backfilled	Mine water & sediment dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Beneficiation facility	D7	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Water management areas	Overburden emplacement area	F4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Water management areas	Overburden emplacement area	F4	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Water management areas	Overburden emplacement area	F4	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Water management areas	Overburden emplacement area	F4	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design.	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Water management areas	Overburden emplacement area	F4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA and creek stability monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Water management areas	Overburden emplacement area	F4	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Water management areas	Overburden emplacement area	F4	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Water management areas	Overburden emplacement area	F4	Groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies

Water management areas	Overburden emplacement area	F4	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of any operational infrastructure associated with mining	All utility infrastructure removed	Statements provided, utility service disconnection record. Survey validates completion of removal works
Water management areas	Overburden emplacement area	F4	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use such as water monitoring gauging stations Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	Drainage line / re-instated creekline is boarded with a of self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU697 - Mugga Ironbark Open Forest	Total area rehabilitated amounting to 1ha of HU697 as confirmed by survey and ecological verification	Native plant species are characteristic of HU697 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	**Vegetation Composition** - Bordering vegetation composition of the rehabilitation is recognisable as HU697 - Mugga Ironbark Open Forest consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU697 plant community.	Bordering native plant species are characteristic of HU697 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	**Vegetation Structure** - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU697) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU697) or an ongoing trent 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 type (HU697).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU697 - Mugga Ironbark Open Forest established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU697) HU697 Native Species Richness (No. Species) - Completion 11-25, Performance 5.50-12.50 Native Over Storey Cover (%) - Completion 4.25-46, Performance 2.13-46 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 1-24, Performance 0.5-24 Native Ground Cover Shrubs (%) - Completion 1.25-20, Performance 1-10 Native Ground Cover Other (%) - Completion 0-40, Performance 0-40 Total Length Fallen Logs (m) - Completion 9.5, Performance 4.75. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration AusRivAS assessments indicating positive ecological condition of drainage lines.	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists. Aquatic habitat within diverted and/or re-established drainage lines are established and ecologically functioning.	Retain all rehabilitation and biodiversity monitoring reports and photographic records. AusRivAS assessments
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Water management areas	Overburden emplacement area	F4	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through the constructed drainage line within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and Environmental Protection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality does not pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Water management areas	Overburden emplacement area	F4	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Water management areas	Overburden emplacement area	F4	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports

Water management areas	Overburden emplacement area	F4	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Water management areas	Overburden emplacement area	F4	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Water management areas	Overburden emplacement area	F4	Landform stability	Drainage lines are restored in accordance with the principles, concepts and techniques described in '*A rehabilitation manual for Australian streams (Rutherford,I; Jerie, K; Marsh, N, 2000*) and in alignment to the approved conceptual final landform	Drainage line constructed in general accordance with manual as assessed by an environmental/hydrological specialist or similar	Drainage line constructed in accordance with 'A rehabilitation manual for Australian streams' (Rutherford,I; Jerie, K; Marsh, N, 2000)	environmental/hydrological specialist assessment report Construction photos Survey Verification of construction and alignment to landform model
Water management areas	Overburden emplacement area	F4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Water management areas	Overburden emplacement area	F4	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Water management areas	Overburden emplacement area	F4	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Water management areas	Overburden emplacement area	F4	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Water management areas	Overburden emplacement area	F4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA and creek stability monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Water management areas	Overburden emplacement area	F4	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Water management areas	Overburden emplacement area	F4	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Water management areas	Overburden emplacement area	F4	Groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies

Water management areas	Overburden emplacement area	F4	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of any operational infrastructure associated with mining	All utility infrastructure removed	Statements provided, utility service disconnection record. Survey validates completion of removal works
Water management areas	Overburden emplacement area	F4	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use such as water monitoring gauging stations Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	Drainage line / re-instated creeklines are borded by a self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	Total area rehabilitated amounting to 9ha of HU732 as confirmed by survey and ecological verification	Native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	**Vegetation Composition** - Bordering vegetation composition of the rehabilitation is recognisable as (BVT) HU732 - Yellowbox Grassy Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU732 plant community.	Bordering native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	**Vegetation Structure** - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU732) or an ongoing trent 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 type (HU732).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU732) HU732 Native Species Richness (No. Species) - Completion 8.5-31, Performance 4.25-11.25 Native Over Storey Cover (%) - Completion 2.25-46, Performance 1.88-46 Native Mid Storey Cover (%) - Completion 0.5-20, Performance 0-20 Native Ground Cover Grass (%) - Completion 0.5-100, Performance 0.25-100 Native Ground Cover Shrubs (%) - Completion 0.5-20, Performance 0-10 Native Ground Cover Other (%) - Completion 0.5-76 Performance 0.25-76 Total Length Fallen Logs (m) - Completion 6.25, Performance 3.13. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration AusRivAS assessments indicating positive ecological condition of drainage lines.	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists. Aquatic habitat within diverted and/or re-established drainage lines are established and ecologically functioning.	Retain all rehabilitation and biodiversity monitoring reports and photographic records. AusRivAS assessments
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Water management areas	Overburden emplacement area	F4	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through the constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and Environmental Protection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality does not pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Water management areas	Overburden emplacement area	F4	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Water management areas	Overburden emplacement area	F4	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports

Water management areas	Overburden emplacement area	F4	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Water management areas	Overburden emplacement area	F4	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Water management areas	Overburden emplacement area	F4	Landform stability	Drainage lines are restored in accordance with the principles, concepts and techniques described in '*A rehabilitation manual for Australian streams (Rutherford,I; Jerie, K; Marsh, N, 2000*) and in alignment to the approved conceptual final landform	Drainage line constructed in general accordance with manual as assessed by an environmental/hydrological specialist or similar	Drainage line constructed in accordance with 'A rehabilitation manual for Australian streams' (Rutherford,I; Jerie, K; Marsh, N, 2000)	environmental/hydrological specialist assessment report Construction photos Survey Verification of construction and alignment to landform model
Water management areas	Beneficiation facility	F7	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Water management areas	Beneficiation facility	F7	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Water management areas	Beneficiation facility	F7	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Water management areas	Beneficiation facility	F7	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Water management areas	Beneficiation facility	F7	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA and creek stability monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Water management areas	Beneficiation facility	F7	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Water management areas	Beneficiation facility	F7	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Water management areas	Beneficiation facility	F7	Groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies

Water management areas	Beneficiation facility	F7	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of any operational infrastructure associated with mining	All utility infrastructure removed	Statements provided, utility service disconnection record. Survey validates completion of removal works
Water management areas	Beneficiation facility	F7	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use such as water monitoring gauging stations Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Water management areas	Beneficiation facility	F7	Ecological rehabilitation	Drainage line / re-instated creeklines are borded by a self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	Total area rehabilitated amounting to 0.35ha of HU732 as confirmed by survey and ecological verification	Native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Beneficiation facility	F7	Ecological rehabilitation	**Vegetation Composition** - Bordering vegetation composition of the rehabilitation is recognisable as (BVT) HU732 - Yellowbox Grassy Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU732 plant community.	Bordering native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Beneficiation facility	F7	Ecological rehabilitation	**Vegetation Structure** - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU732) or an ongoing trent 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 type (HU732).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Water management areas	Beneficiation facility	F7	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU732) HU732 Native Species Richness (No. Species) - Completion 8.5-31, Performance 4.25-11.25 Native Over Storey Cover (%) - Completion 2.25-46, Performance 1.88-46 Native Mid Storey Cover (%) - Completion 0.5-20, Performance 0-20 Native Ground Cover Grass (%) - Completion 0.5-100, Performance 0.25-100 Native Ground Cover Shrubs (%) - Completion 0.5-20, Performance 0-10 Native Ground Cover Other (%) - Completion 0.5-76 Performance 0.25-76 Total Length Fallen Logs (m) - Completion 6.25, Performance 3.13. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration AusRivAS assessments indicating positive ecological condition of drainage lines.	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists. Aquatic habitat within diverted and/or re-established drainage lines are established and ecologically functioning.	Retain all rehabilitation and biodiversity monitoring reports and photographic records. AusRivAS assessments
Water management areas	Beneficiation facility	F7	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Water management areas	Beneficiation facility	F7	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through the constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and Environmental Protection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality does not pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Water management areas	Beneficiation facility	F7	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Water management areas	Beneficiation facility	F7	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports

Water management areas	Beneficiation facility	F7	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Water management areas	Beneficiation facility	F7	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Water management areas	Beneficiation facility	F7	Landform stability	Drainage lines are restored in accordance with the principles, concepts and techniques described in '*A rehabilitation manual for Australian streams (Rutherford,I; Jerie, K; Marsh, N, 2000*) and in alignment to the approved conceptual final landform	Drainage line constructed in general accordance with manual as assessed by an environmental/hydrological specialist or similar	Drainage line constructed in accordance with 'A rehabilitation manual for Australian streams' (Rutherford,I; Jerie, K; Marsh, N, 2000)	environmental/hydrological specialist assessment report Construction photos Survey Verification of construction and alignment to landform model
Water management areas	Infrastructure area	F1	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Water management areas	Infrastructure area	F1	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Water management areas	Infrastructure area	F1	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Water management areas	Infrastructure area	F1	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Water management areas	Infrastructure area	F1	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA and creek stability monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Water management areas	Infrastructure area	F1	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Water management areas	Infrastructure area	F1	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Water management areas	Infrastructure area	F1	Groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies

Water management areas	Infrastructure area	F1	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of any operational infrastructure associated with mining	All utility infrastructure removed	Statements provided, utility service disconnection record. Survey validates completion of removal works
Water management areas	Infrastructure area	F1	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use such as water monitoring gauging stations Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Water management areas	Infrastructure area	F1	Ecological rehabilitation	Drainage line / re-instated creeklines are borded by a self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU732 - Yellowbox Grassy Woodland	Total area rehabilitated amounting to 0.37ha of HU732 as confirmed by survey and ecological verification	Native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Infrastructure area	F1	Ecological rehabilitation	**Vegetation Composition** - Bordering vegetation composition of the rehabilitation is recognisable as (BVT) HU732 - Yellowbox Grassy Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU732 plant community.	Bordering native plant species are characteristic of HU732 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Infrastructure area	F1	Ecological rehabilitation	**Vegetation Structure** - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU732) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU732) or an ongoing trent 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 type (HU732).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Water management areas	Infrastructure area	F1	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) HU732 - Yellowbox Grassy Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU732) HU732 Native Species Richness (No. Species) - Completion 8.5-31, Performance 4.25-11.25 Native Over Storey Cover (%) - Completion 2.25-46, Performance 1.88-46 Native Mid Storey Cover (%) - Completion 0.5-20, Performance 0-20 Native Ground Cover Grass (%) - Completion 0.5-100, Performance 0.25-100 Native Ground Cover Shrubs (%) - Completion 0.5-20, Performance 0-10 Native Ground Cover Other (%) - Completion 0.5-76 Performance 0.25-76 Total Length Fallen Logs (m) - Completion 6.25, Performance 3.13. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration AusRivAS assessments indicating positive ecological condition of drainage lines.	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists. Aquatic habitat within diverted and/or re-established drainage lines are established and ecologically functioning	Retain all rehabilitation and biodiversity monitoring reports and photographic records. AusRivAS assessments
Water management areas	Infrastructure area	F1	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Water management areas	Infrastructure area	F1	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through the constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and Environmental Protection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality does not pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Water management areas	Infrastructure area	F1	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Water management areas	Infrastructure area	F1	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports

Water management areas	Infrastructure area	F1	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Water management areas	Infrastructure area	F1	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Water management areas	Infrastructure area	F1	Landform stability	Drainage lines are restored in accordance with the principles, concepts and techniques described in '*A rehabilitation manual for Australian streams (Rutherford,I; Jerie, K; Marsh, N, 2000*) and in alignment to the approved conceptual final landform	Drainage line constructed in general accordance with manual as assessed by an environmental/hydrological specialist or similar	Drainage line constructed in accordance with 'A rehabilitation manual for Australian streams' (Rutherford,I; Jerie, K; Marsh, N, 2000)	environmental/hydrological specialist assessment report Construction photos Survey Verification of construction and alignment to landform model
Water management areas	Overburden emplacement area	F4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Water management areas	Overburden emplacement area	F4	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Water management areas	Overburden emplacement area	F4	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Water management areas	Overburden emplacement area	F4	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Water management areas	Overburden emplacement area	F4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA and creek stability monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Water management areas	Overburden emplacement area	F4	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Water management areas	Overburden emplacement area	F4	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Water management areas	Overburden emplacement area	F4	Groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies

Water management areas	Overburden emplacement area	F4	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of any operational infrastructure associated with mining	All utility infrastructure removed	Statements provided, utility service disconnection record. Survey validates completion of removal works
Water management areas	Overburden emplacement area	F4	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use such as water monitoring gauging stations Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	Drainage line / re-instated creeklines are borded by a self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	Total area rehabilitated amounting to 6.8ha of HU824 as confirmed by survey and ecological verification	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	**Vegetation Composition** - Bordering vegetation composition of the rehabilitation is recognisable as (BVT) HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU824 plant community.	Bordering native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	**Vegetation Structure** - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU824) or an ongoing trent 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 type (HU824).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU824) HU824 Native Species Richness (No. Species) - Completion 13.5-30.5, Performance 6.75-15.25 Native Over Storey Cover (%) - Completion 3.18-61, Performance 1.59-61 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 0-36, Performance 0-36 Native Ground Cover Shrubs (%) - Completion 1.25 -20, Performance 1-10 Native Ground Cover Other (%) - Completion 0.5-76, Performance 0.25-76 Total Length Fallen Logs (m) - Completion 16.5, Performance 8. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration AusRivAS assessments indicating positive ecological condition of drainage lines	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists. Aquatic habitat within diverted and/or re-established drainage lines are established and ecologically functioning.	Retain all rehabilitation and biodiversity monitoring reports and photographic records. AusRivAS assessments
Water management areas	Overburden emplacement area	F4	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Water management areas	Overburden emplacement area	F4	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through the constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and Environmental Protection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality does not pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Water management areas	Overburden emplacement area	F4	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform. Eds Lake is designed to be a free draining depression within the final landform	All mine dams backfilled Eds lake retains water periodically and is constructed to be a free draining depression within the final landform	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform. Eds lake has been constructed and performs as a free draining depression within the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Water management areas	Overburden emplacement area	F4	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports

Water management areas	Overburden emplacement area	F4	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Water management areas	Overburden emplacement area	F4	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Water management areas	Overburden emplacement area	F4	Landform stability	Drainage lines are restored in accordance with the principles, concepts and techniques described in '*A rehabilitation manual for Australian streams (Rutherford,I; Jerie, K; Marsh, N, 2000*) and in alignment to the approved conceptual final landform	Drainage line constructed in general accordance with manual as assessed by an environmental/hydrological specialist or similar	Drainage line constructed in accordance with 'A rehabilitation manual for Australian streams' (Rutherford,I; Jerie, K; Marsh, N, 2000)	environmental/hydrological specialist assessment report Construction photos Survey Verification of construction and alignment to landform model
Water management areas	Tailings storage facility	F2	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Water management areas	Tailings storage facility	F2	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Water management areas	Tailings storage facility	F2	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Water management areas	Tailings storage facility	F2	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Water management areas	Tailings storage facility	F2	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA and creek stability monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Minimal signs of erosion do not impact tailing capping, construction or structural integrity Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports Report from suitability qualified engineer details surface water flows not impacting tailings capping, construction or structures integrity
Water management areas	Tailings storage facility	F2	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping

Water management areas	Tailings storage facility	F2	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Water management areas	Tailings storage facility	F2	Groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies
Water management areas	Tailings storage facility	F2	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of any operational infrastructure associated with mining	All utility infrastructure removed	Statements provided, utility service disconnection record. Survey validates completion of removal works
Water management areas	Tailings storage facility	F2	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use such as water monitoring gauging stations Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Water management areas	Tailings storage facility	F2	Ecological rehabilitation	Drainage line / re-instated creeklines are borded by a self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	Total area rehabilitated amounting to 0.1ha of HU824 as confirmed by survey and ecological verification	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Tailings storage facility	F2	Ecological rehabilitation	**Vegetation Composition** - Bordering vegetation composition of the rehabilitation is recognisable as (BVT) HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU824 plant community.	Bordering native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Water management areas	Tailings storage facility	F2	Ecological rehabilitation	**Vegetation Structure** - The bordering vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU824) or an ongoing trent 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 type (HU824).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Water management areas	Tailings storage facility	F2	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan Aquatic habitat within diverted and/or re-established drainage lines and retained water features are self sustaining with ecosystem function	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU824) HU824 Native Species Richness (No. Species) - Completion 13.5-30.5, Performance 6.75-15.25 Native Over Storey Cover (%) - Completion 3.18-61, Performance 1.59-61 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 0-36, Performance 0-36 Native Ground Cover Shrubs (%) - Completion 1.25 -20, Performance 1-10 Native Ground Cover Other (%) - Completion 0.5-76, Performance 0.25-76 Total Length Fallen Logs (m) - Completion 16.5, Performance 8. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration AusRivAS assessments indicating positive ecological condition of drainage lines	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists. Aquatic habitat within diverted and/or re-established drainage lines are established and ecologically functioning.	Retain all rehabilitation and biodiversity monitoring reports and photographic records. AusRivAS assessments
Water management areas	Tailings storage facility	F2	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Water management areas	Tailings storage facility	F2	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through the constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and Environmental Protection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality does not pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Water management areas	Tailings storage facility	F2	Surface water	Mine water dams (excluding approved final voids) to be backfilled and integrated into the final landform	All mine dams backfilled	Mine water dams (excluding approved final voids) backfilled and integrated into the final landform	Survey reports and work completion reports documenting backfilling. Aerial imagery
Water management areas	Tailings storage facility	F2	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports

Water management areas	Tailings storage facility	F2	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Water management areas	Tailings storage facility	F2	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Water management areas	Tailings storage facility	F2	Landform stability	Drainage lines are restored in accordance with the principles, concepts and techniques described in '*A rehabilitation manual for Australian streams (Rutherford,I; Jerie, K; Marsh, N, 2000*) and in alignment to the approved conceptual final landform	Drainage line constructed in general accordance with manual as assessed by an environmental/hydrological specialist or similar	Drainage line constructed in accordance with 'A rehabilitation manual for Australian streams' (Rutherford,I; Jerie, K; Marsh, N, 2000)	environmental/hydrological specialist assessment report Construction photos Survey Verification of construction and alignment to landform model
Infrastructure	Infrastructure area	I1	Management of waste and process materials	Final landforms maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 2m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 2m below the surface of the backfilled mine void landform so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.
Infrastructure	Infrastructure area	I1	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained

Infrastructure	Infrastructure area	I1	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Infrastructure	Infrastructure area	I1	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Erected fences are secure, long term, compliant to Australian standards and do not hinder surface water flows offsite.	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Security fence erected and compliant to Australian Standards	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. Certificate of fence construction and installation
Infrastructure	Infrastructure area	I1	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of any operational infrastructure associated with mining	All utility infrastructure removed	Statements provided, utility service disconnection record. Survey validates completion of removal works
Infrastructure	Infrastructure area	I1	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Damage to access tracks has been repaired and stabilised Approval to retain security fencing attained from The Secretary	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of the infrastructure has been inspected by a suitably qualified personnel and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of the nominated infrastructure	Statement provided by suitably qualified personnel As-constructed final landform plan and survey records Copy of relevant approvals
Infrastructure	Infrastructure area	I1	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.

Infrastructure	Infrastructure area	I1	Surface water	Security Fences installed on boundary do not inhibit surface water flows and incorporate flood gates as required over creek and drainage lines of which are installed to Australian Standards	Fences are installed and are secure, long term, compliant to Australian standards and do not hinder surface water flows offsite.	Security Fences are installed and include flood gates as necessary	Photos of installation and completion report
Infrastructure	Infrastructure area	I1	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Infrastructure	Infrastructure area	I1	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Infrastructure	Infrastructure area	I1	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Final landform which includes the Elevated Waste Rock Emplacement Area maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 5m below the surface of the Elevated Waste Rock Emplacement area, so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 5m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 5m bbelow the surface of the Elevated Waste Rock Emplacement (Pit 2), so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design.	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings Removal of Rail facilities Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas	All utility infrastructure removed Footings removed Rail Infrastructure removed and backfilled Cores removed and placed in overburden emplacement areas	Statements provided, utility service disconnection record. Survey validates completion of removal works
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use Heritage obligations as required under the *Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc* have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Rehabilitate a total of 25.75 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU824 - White Box Shrubby Woodland	Total area rehabilitated amounting to 25.75ha of HU824 as confirmed by survey and ecological verification	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Composition -** The vegetation composition of the rehabilitation is recognisable as HU824 - White Box Shrubby Woodland consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU824 plant community.	Native plant species are characteristic of HU824 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU824) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU824) or an ongoing trent 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 type (HU824).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable.Biometric Vegetation Type (BVT) - HU824 - White Box Shrubby Woodland established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU824) HU824 Native Species Richness (No. Species) - Completion 13.5-30.5, Performance 6.75-15.25 Native Over Storey Cover (%) - Completion 3.18-61, Performance 1.59-61 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 0-36, Performance 0-36 Native Ground Cover Shrubs (%) - Completion 1.25 -20, Performance 1-10 Native Ground Cover Other (%) - Completion 0.5-76, Performance 0.25-76 Total Length Fallen Logs (m) - Completion 16.5, Performance 8. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which incorporates micro-relief, geotechnical performance, stability and hydrological function and incorporated into the surrounding natural landscape	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design	The final landform is to be constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landforms and incorporates detailed drainage design plans with micro-relief drainage features which does not exceed the maximum approved elevation.	Statement and designs provided. Survey records validate to design.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Final landform which includes the Elevated Waste Rock Emplacement Area maximise geotechnical performance, stability and hydrological function. All LOM carbonaceous reject material and residual carbonaceous material to be placed at least 5m below the surface of the Elevated Waste Rock Emplacement area, so not to pose a threat of environmental harm or restrict the intended final land use.	The final landform has been constructed generally in accordance with the approved conceptual final landform design and integrates with the surrounding natural landscape with micro-relief features. Landforms are confirmed by survey against final landform design with carbonaceous material confirmed below 5m of the surface	All life of mine (LOM) carbonaceous reject material and residual carbonaceous material to be placed at least 5m bbelow the surface of the Elevated Waste Rock Emplacement (Pit 2), so not to pose a threat of environmental harm or restrict the intended final land use.	Retain all survey plans of restored landforms, final design reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Management of waste and process materials	Residual waste materials stored on site (e.g. coarse rejects) will be appropriately contained/encapsultated so it does not pose any hazards or constraints for intended final land use	Visual - Capping material placement, type across emplacement Visual - Indication of capping performance on final landform - vegetation health Visual - emplacement seepage and other indicators of groundwater issues - wet spots etc. measured - survey of emplacement capping to verify construction and monitor settlement Quality assurance records for the construction of the emplacement material including (where relevant) capping material etc Measured - surface and groundwater levels to verify water balance modelling and capping function Measured - contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplacement.	Visual - verification that capping, type and placement consistent with design Visual - no signs of compromised capping performance indicated by vegetation health - such as tree death (deeper root systems) Visual - no areas of unexpectged seepage Survey verified that capping placement is consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordnace with design specification relevant to site risks and target final land use.	Photos, rehabilitation monitoring reports, as-constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. Structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Final landforms maximise geotechnical performance, stability and hydrological function, in that there will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use	There is no spontaneous combustion in the final landform as confirmed by survey and thermal imaging against the final landform design.	There will be no spontaneous combustion in the final landform so not to pose a threat of environmental harm or restrict the intended final land use. Thermal imaging to be undertaken over areas to confirm	Retain all survey plans, thermal imaging, final design reports of restored landforms and photographic records. Remedial actions documented.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	The final landform will be safe and stable and non-polluting of which are constructed to the approved conceptual final landform of which exhibits no significant forms of erosion which would constitute a safety hazard and/or compromise the intended final land use and/or compromise the effectiveness of drainage structures	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. LFA monitoring indicates stability Modelling - long-term geotechnical stability to verify the long-term stability of rehabilitated landform Visual - indicators that surface water management structures are functioning as designed	The final landform has been constructed in general accordance with the Rehabilitation Strategy and its intended land use. Landforms and drainage structures are confirmed stable by survey against the final landform design. Ground vegetation is to be generally >70%. Erosion riling to be generally <0.3m (w). No gully erosion and minimal erosion that would not require moderate to significant ongoing management and maintenance works. Survey verifies that final landform complies with final landform construction in accordance with Final Landform and Rehabilitation plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records. LIDAR aerial surveys and LFA reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Landform stability	Backfilled rehabilitation landforms to be designed and constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds) and approximate pre mining topography	Conceptual final landform slopes no greater than 1:6 Surveyed constructed landform indicates slopes less than 1:6	Backfilled rehabilitation landforms constructed with final landform gradients of no more than 1:6 (10 degrees or 17%) (with the exception of slopes associated with final voids and safety bunds)	Survey reports and work completion reports documenting backfilling. Aerial DEM models and contour mapping
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	Minimise long term groundwater seepage from the site to ensure negligible environmental consequences beyond those predicted for the development.	groundwater quality both on and off the mining lease represent an acceptable level of change from a defined reference condition	groundwater quality and groundwater regime are within the range as predicted against the latest calibration of the ground water model.	groundwater model and monitoring reports validate minimal groundwater seepage from site.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	groundwater	groundwater quality meets the requirement of relevant development consent/EPL 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 or Environmental Protection Licence	Water quality discharged from rehabilitated mining operation meet specifications in EPL and or ANZECC guidelines for specific environment	Independent hydrological assessement report. groundwater monitoring reports and sampling studies
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Removal of infrastructure	All infrastructure that is not to be used as part of the final land use is to be decommissioned, removed to ensure that the site is safe and free of hazardous materials.	Removal of all services (power, water, communications) that have been connected on the site as part of the operation Removal of building footings Removal of all water management infrastructure (pumps, pipes, power) Drill cores removed and disposed of in overburden emplacement areas	All utility infrastructure removed Footings removed Cores removed and placed in overburden emplacement areas	Statements provided, utility service disconnection record. Survey validates completion of removal works

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Retention of infrastructure	All surface infrastructure is to be decomissioned and removed unless approved and authorised by The Secretary. Any retained infrastructure is safe and does not pose any hazard to the community. All infrastructure that is to remain as part of the final land use benefits from the relevant approvals	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured Damage to access tracks has been repaired and stabilised Where applicable, necessary approvals are in place where buildings and infrastructure are to be retained as part of final land use Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc have been met (e.g. archival recording, building retention and resotration)	Hazards isolated and secured Repairs Completed Permits and approval documents issued, archival reports (where required) complete and submitted. The structural integrity of th einfrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use. The Secretary has approved the retention of nominated infrastructure	Statement provided by suitably qualified engineer As-constructed final landform plan and survey records Copy of relevant approvals
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Rehabilitate a total of 32.86 hectares self sustaining woodland ecosystem to Biometric Vegetation Type (BVT) of HU697 - Mugga Ironbark Open Forest	Total area rehabilitated amounting to 32.86ha of HU697 as confirmed by survey and ecological verification	Native plant species are characteristic of HU697 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Composition** - The vegetation composition of the rehabilitation is recognisable as HU697 - Mugga Ironbark Open Forest consistent within the BioNet Vegetation Classification	Native plant species recorded from Bio Metric methodolodgy and fixed monitoring plots are characterisitc of the target HU697 plant community.	Native plant species are characteristic of HU697 when compared to analogue sites	Annual Rehabilitation Monitoring Reports, Ecological Reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Vegetation Structure** - The vegetation structure of the rehabilitation is recognisable as, or is trending towards (based on ongoing monitoring date) the target BVT (HU697) within the BioNet Vegetation Classification.	Cover and abundance of plant growth forms recorded from fixed monitoring plots are characteristic of the target vegetation community (HU697) or an ongoing trent 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 type (HU697).	Annual Rehabilitation Monitoring Reports, Ecological Reports which validate rehabilitation completion criteria have been met.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	**Ecosystem Function** - Levels of ecosystem function have been established that demonstrate the rehabilitation is self - sustainable. Biometric Vegetation Type (BVT) - HU697 - Mugga Ironbark Open Forest established and self sustaining in accordance with the approved conceptual final landform design and approved final rehabilitation plan and meet Bioemtric Performance and Completion Criteria as documented within the Biodiversity Management Plan	BVT and Regent Honeyeater habitat have established generally in accordance with the approved conceptual final landform design and approved final rehabilitation plan as confirmed by ecological specialists. Indicators of nutrient cycling and secondary germination which are suitable for sustaining the target vegetation community (HU697) HU697 Native Species Richness (No. Species) - Completion 11-25, Performance 5.50-12.50 Native Over Storey Cover (%) - Completion 4.25-46, Performance 2.13-46 Native Mid Storey Cover (%) - Completion 2.5-100, Performance 1-100 Native Ground Cover Grass (%) - Completion 1-24, Performance 0.5-24 Native Ground Cover Shrubs (%) - Completion 1.25-20, Performance 1-10 Native Ground Cover Other (%) - Completion 0-40, Performance 0-40 Total Length Fallen Logs (m) - Completion 9.5, Performance 4.75. Exotic Plant Cover (%) - Completion <45%, Performance <90% Regeneration - Completion To be determined based on number of overstorey species, Performance No regeneration	BVT and Regent Honeyeater habitat will be established and performing generally in accordance with the approved conceptual final rehabilitation plan. Performance and Completion Criteria metrics will also be met and within parameters as documented within the sites Biodiversity Management Plan (BMP) and verified by ecological specialists.	Retain all rehabilitation and biodiversity monitoring reports and photographic records.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Relocation of heritage objects or as near as possible to, the original location from which they were salvaged on the rehabilitated landform	Completion of works with heritage objects successfully relocated (as required and identified within the ACHMP) onto rehabilitation areas.	Salvaged heritage objects relocated onto rehabilitated landform as required by the sites ACHMP.	Completion of works report by RAPs & Archeologists.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Surface water	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines Runoff water quality does not pose environmental harm for receiving waters, meeting the requirements of the SSD 6764 and EnvironmentalProtection Licence.	Water shed and landform construction constructed to the final landform design which incorporates micro-relief and passage of surface waters to constructed drainage lines Water quality parameters selected from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence.	Runoff water quality from rehabilitation into Wilpinjong Creek will be transported through constructed drainage lines within the final landform of which will be within the long-term range of water quality recorded historically within the rehabilitated drainage lines and the runoff water quality doesnot pose environmental harm for receiving waters	AUSRIVAS monitoring and reporting Landform survey designs Surface water monitoring and reporting
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil Material (Soil health) in the final landform will be considered suitable and support the operations rehabilitation as indicated by EC, pH, CEC and ESP metrics	Soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6%	Topsoil material in the final landform will be considered suitable with the soil results and soil characterisation are within the range for Ece <d4S/m, pH 5.0 to 8.9, Cation Exchange Capacity (CEC) 3 to 25meq/100g and Soil Exchange Sodium Percentage (ESP) <6% as confirmed by soil specialist	Soil Sampling records and rehabilitation / biodiversity monitoring reports.
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Ecological rehabilitation	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas above high water mark and 'keyed' into the final landform	Soil sampling indicates spread topsoil is min 100mm thick	Topsoil material to be applied at a minimum of 100mm thickness to a maximum thickness of 300mm in all areas and 'keyed' into the final landform	Retain all survey plans of restored landforms, final design reports, monitoring reports and photographic records.

Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	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. All rubbish/waste materials removed from site	statement provided and before/after photos inspection reports
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Land contamination	There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999) applicable to land use type	Contamination will be appropriately remediated so that appropriate guidelined for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination Measure (1999).	Contamination Remediation Report prepared by Land Contamination Consultant. Site contamination Audit Report and Site Audit Statement prepared by EPA Accredited Auditor (where required)
Rehabilitation biodiversity offset area	Overburden emplacement area	D4	Bushfire	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 advise from the NSW Rural Fire Service. Installation of bushfire trails/breaks constructed throughout the rehabilitation	Bushfire controls implemented	Statement provided and before/after photos