

ENV-RHB-STR-001 Rehabilitation Strategy

June 2024





Document details and history

Document details

Document title ENV-RHB-STR-001 Rehabilitation Strategy **File name** 241029 Boggabri Rehabilitation Strategy_Final

Document status and review

Edition	Comments	Author	Authorised by	Date
V01.01	Draft for Consultation	DH/NC	JST	21/03/2024
V01.02	For DPHI Approval	AL/NC	JST	07/06/2024

Disclaimer Document uncontrolled when printed



Table of contents

1.0	Intr	oductio	on	6
	1.1	Overvie	ew	6
	1.2	Backgr	ound	8
	1.3	Purpos	se	8
	1.4	Elemer	nts Covered by the Rehabilitation Strategy	8
	1.5	Stakeh	older Consultation Required by SSD 09_0182	11
2.0	Stra	ategic C	Context	12
	2.1	Curren	t Development Consents, Leases and Licences	12
	2.2	Regula	tory Requirements for Rehabilitation	15
		2.2.1	Commonwealth Legislation	15
		2.2.2	Environment Protection and Biodiversity Conservation Act 1999	15
		2.2.3	State Legislation	15
	2.3	Strateg	gic Framework for Mine Closure	24
3.0	Reh	abilitat	tion Objectives and Completion Criteria	27
	3.1		ilitation Objectives	
		3.1.1	Rehabilitation Outcome Documents	29
		3.1.2	Completion Criteria	29
	3.2	Final La	and Use Statement	29
	3.3	Final La	andform and Post Mining Land Uses	30
4.0	Reh	abilitat	tion Strategy Implementation	32
	4.1		ilitation Schedule Overview	
	4.2	Mine P	lanning Rehabilitation Stages	36
		4.2.1	Rehabilitation Completion	
	4.3	Water I	Management	37
		4.3.1	Surface Water Management	37
		4.3.2	Groundwater	38
		4.3.3	Post Mining Surface Water Management	39
	4.4	Biodive	ersity Management	40
		4.4.1	Biodiversity Offsets and Mine Rehabilitation	41
		4.4.2	Biodiversity Completion Criteria	43
		4.4.3	BOA Management Zones	44



		4.4.4	integration of Biodiversity Offsets and Mine Renabilitation	44
	4.5	Final V	oid and Mine Closure Plan	45
	4.6	Opport	unities and Improvement to Post Mining Land Uses	45
	4.7	Integra	ted Mine Planning	45
		4.7.1	Tarrawonga Coal Mine Rehabilitation Integration	45
5.0	Fina	al Void	and Mine Closure Plan	48
	5.1	Care a	nd Maintenance	49
6.0	Reh		tion Monitoring	
7.0			er Engagement Plan	
7.0	7.1		unity Consultation	
	7.1		inal Consultation	
	7.2	Ū	/ Consultation	
0.0				
8.0	•			
	8.1	•	Lease Reporting Requirements	
	8.2		Review	
	8.3		nt and Complaint Management	
9.0	Acc	ountab	oilities and Responsibilities	57
	9.1	Resour	rces and Responsibilities	57
		9.1.1	Rehabilitation Strategy Revision	57
		9.1.2	Publication	58
10.0	Abk	oreviati	ons	59
List		•	s and charts	
	_		egional Locality	
	_		onceptual Project Layout	
	_		onceptual Project Layout (Mining Areas)inal Landform & Rehabilitation Plan	
	_		onceptual Staged Plans from the Boggabri EA (2010) for Year 10	
	_		onceptual Staged Plans from the Boggabri EA (2010) for Year 10onceptual Staged Plans from the Boggabri EA (2010) for Year 21	
	_		onceptual Staged Plans from the Boggabir EA (2010) for Year 21onceptual Final Landform Design	
	_		roject BOAs	
	i igu	16 4-4. FI	loject BOAS	42
List	of ta	bles		
	Tabl	e 2-1: Su	mmary of Current Consents, Authorisations, and Licences	12
	Tabl	e 2-2: Su	ımmary of Modification Approval Dates and Activities	13



	Table 2-3: Bo	ggabri EA Rehabilitation Commitments	16
	Table 2-4: Sta	andard Mining Lease Conditions	16
	Table 2-5: Str	ategic Framework Mine Closure Principles	24
		M Rehabilitation Objectives	
	Table 3-2: Fin	al Land Use Domains	30
		habilitation Stages	
	Table 4-2: BC	PA Identification	43
	Table 4-3: BC	A Management Measures for Offset Zones	44
	Table 7-1: Sta	akeholder Engagement Expectations	51
	Table 9-1: Ro	les and Responsibilities for Implementation of the Rehabilitation Strategy	57
	Table 9-2: Do	cument and Data Control Amendments	58
Арј	endices		
	Appendix A	Author Endorsement	62
	Appendix B	SSD and EPBC Approval Conditions	63
	Appendix C	Response to Regulatory Consultation	71
	Appendix D	Rehabilitation Risks and Controls	72
	Appendix E	Rehabilitation Strategy Consultation	86



1.0 INTRODUCTION

1.1 Overview

The Boggabri Coal Mine (BCM) is an open cut coal mine located approximately 15 km north east of the township of Boggabri in the North West Region of NSW, wholly within the Narrabri Local Government Area (LGA). BCM has operated since 2006 and is part of the Leard Mining Precinct, being located immediately adjacent to the Tarrawonga Coal Mine (TCM) to the south and Maules Creek Coal Mine (MCCM) to the north (**Figure 1-1**).

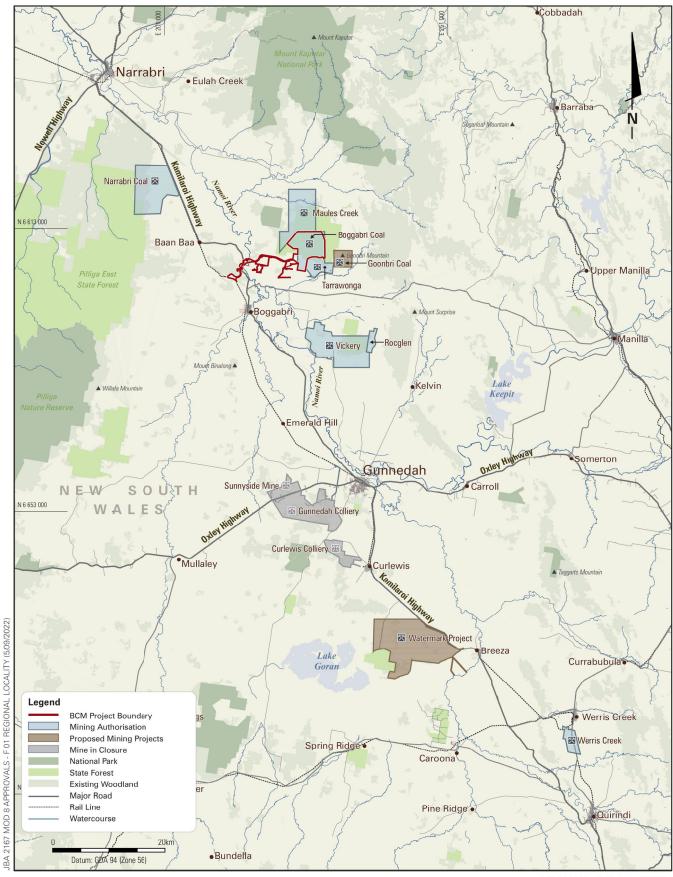
The BCM is managed by Boggabri Coal Operations Pty Ltd (BCOP), which is a wholly owned subsidiary of Idemitsu Australia Pty Ltd (IA). IA is a subsidiary of the Japanese company Idemitsu Kosan Co Ltd (Idemitsu Kosan). BCM is a joint venture between IA (via its wholly owned subsidiary Boggabri Coal Pty Ltd (80%), Chugoku Electric Power Australia Resources Pty Ltd (10%) and NS Boggabri Pty Limited (10%).

Environmental assessments first commenced at BCM in 1976 followed by grant of approval for the project in 1989, and the commencement of operations in 2006. In 2009, BCOP lodged a major project application under the now-repealed Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Project Approval (PA) 09_0182 for the BCM Continuation of Mining Project was granted by the then NSW Planning Assessment Commission (PAC) under the former Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 18 July 2012. PA 09_0182 permits BCOP to carry out mining operations until the end of December 2033, with an annual Run of Mine (ROM) coal extraction rate of up to 8.6 Million tonnes per annum (Mtpa). PA 09_0182 also permits BCOP to transport of up to 10 Mtpa of product by rail (up to 8.6 Mtpa from BCM and up to 3 Mtpa from TCM (subject to agreement)).

On 20 June 2019, a delegate of Minister declared PA 09_0182, as modified to be "State Significant Development" under Clause 6 of Schedule 2 of the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017, for the purposes of the EP&A Act. Accordingly, from 20 June 2019, PA 09 0182 has been referred to as SSD 09 0182.

In July 2021, BCOP lodged an application under Section 4.55 of the EP&A Act to modify SSD 09_0182 (MOD 8). The submission of MOD 8 sought approval for increased depth of mining operations and to construct a fauna movement crossing over the existing haul road. The application is currently being considered by the NSW Department of Planning Housing and Infrastructure (DPHI (formerly Department of Planning and Environment (DPE)).

In October 2022, BCOP lodged an application under Section 4.55 of the EP&A Act to modify SSD 09_0182 (MOD 9). The modification application sought approval for the operation of a mobile rock crushing plant, the construction of new Pre-shift Start-up infrastructure closer to active mining operations and minor administrative amendments. The application was determined by the then DPE Executive Director under delegation by the Minister for Planning on 2 March 2023. The MOD 9 approval included the requirement to prepare this Rehabilitation Strategy.









BOGGABRI COAL MINE

Regional Locality



1.2 Background

Schedule 3, Condition 71 of SSD 09_0182 (as per MOD 9) requires the preparation of a Rehabilitation Strategy. This Rehabilitation Strategy has been prepared in fulfilment of these requirements under the SSD 09_0182. **Appendix A** provides a letter from DPHI (formerly DPE) acknowledging the authors of the Rehabilitation Strategy. **Appendix B** provides a table illustrating the requirements of this Rehabilitation Strategy and where each requirement is addressed.

A Rehabilitation Management Plan (RMP) has also been developed for the BCM to address the specific requirements of the *Mining Act 1992*. The RMP solely relates to activities within the current mining leases (MLs) (or coal lease (CL)) which are currently held for the BCM. The RMP defines how the rehabilitation of the site will achieve the rehabilitation objectives established under the Mining Act (which are established consistent with the rehabilitation objectives of SSD 09_0182).

Conditions of approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were granted by the then Federal Government Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) (now the Department of Climate Change, Energy, the Environment and Water (DCCEEW)) on 11 February 2013 (EPBC Approval). Conditions 21 to 25 of the EPBC Approval relate to the management of rehabilitation and generation of a final landform. The requirement for a mine site Rehabilitation Plan is addressed within a separate document which has been approved by the Commonwealth Government. This Rehabilitation Strategy has been prepared to be consistent with the Commonwealth required Rehabilitation Plan.

1.3 Purpose

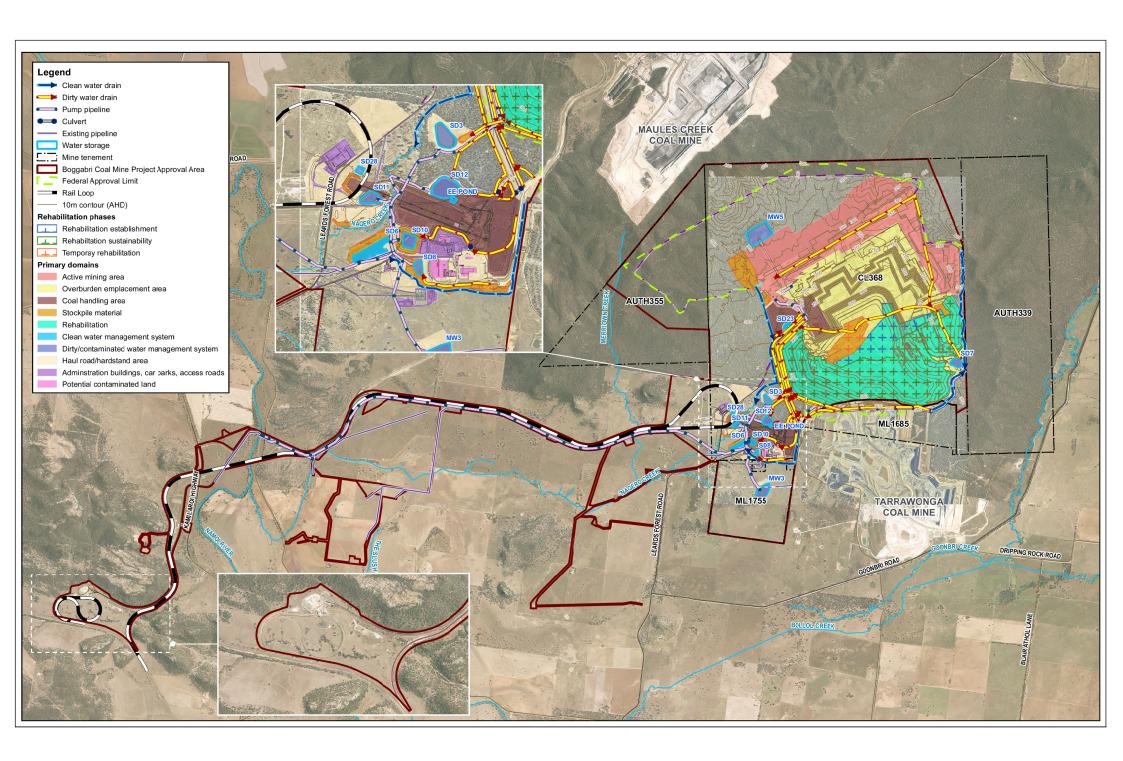
The purpose of this Rehabilitation Strategy is to provide an overarching strategy for how the land disturbed by activities under SSD 09_0182 will be rehabilitated to achieve the rehabilitation objectives and final land uses.

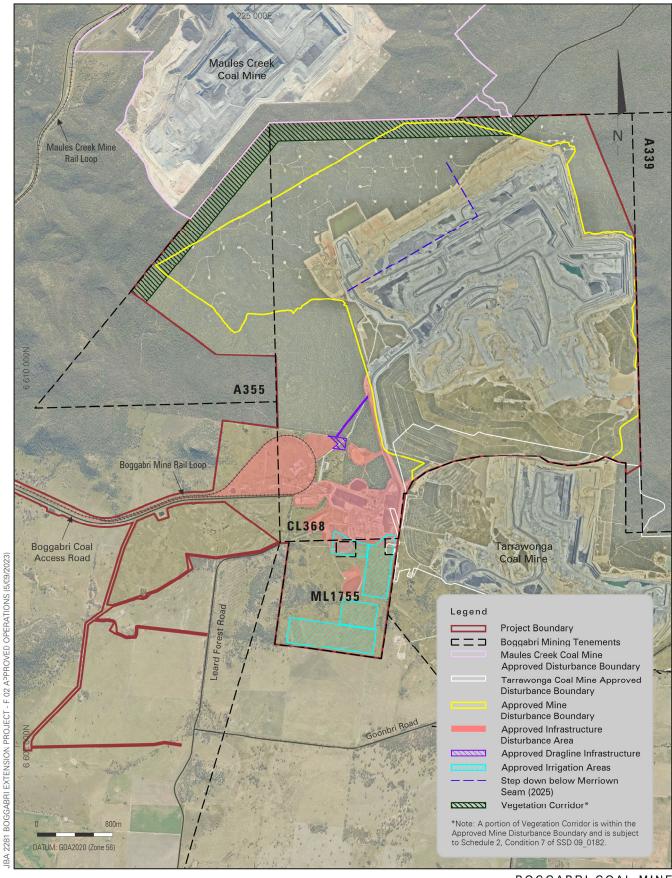
The objectives of the Rehabilitation Strategy are to:

- Clearly describe the site Rehabilitation Objectives and intended rehabilitation outcomes for the BCM;
- Document specific strategies and actions to identify, mitigate or manage rehabilitation risks across all aspects and phases of mine rehabilitation; and
- Provide a clear definition of the roles and responsibilities for the management of rehabilitation related activities that apply to all BCM employees, contractors and subcontractors.

1.4 Elements Covered by the Rehabilitation Strategy

This Rehabilitation Strategy applies to all employees and contractors at the BCM and covers all activities undertaken in accordance with SSD 09_0182. **Figure 1-2** and **Figure 1-3** provide a layout of approved operations relevant to the Project Boundary for SSD 09_0182 as approved by MOD 9. This Rehabilitation Strategy relates to the rehabilitation of all disturbances within the Project Boundary for SSD 09_0182.











BOGGABRI COAL MINE

Conceptual Project Layout (Mine Area)



1.5 Stakeholder Consultation Required by SSD 09_0182

Schedule 3, Condition 71(b) of SSD 09_0182 requires this Rehabilitation Strategy to be prepared in consultation with the Department of Regional NSW - Resources Regulator (Resources Regulator), Forestry Corporation of NSW (FCNSW), DPHI - Biodiversity, Conservation and Science Directorate (BCS), NSW Department of Climate Change, Energy, the Environment and Water – Water (NSW DCCEEW Water), North West Local Land Services, Narrabri Shire Council and the BCM Community Consultative Committee (CCC).

The stakeholder engagement management plan, including the consultation which has been undertaken in relation to this Rehabilitation Strategy is discussed further in **Section 7.0**.

The submission of the Rehabilitation Strategy was due to be submitted within one month of Modification 9 approval on the 2 March 2023. An extension was granted by Heidi Watters to delay the submission of management plans within 3 months of the determination of Modification 8. Modification 8 was approved on the 22 February 2024. A submission extension was granted to 5 April 2024.

The strategy was uploaded to portal on 21 March 2024 for consultation. Comments were received from Department of Climate Change, Energy, the Environment and Water (DCCEEW) Water and the Biodiversity, Conservation and Science Group (BCS) divisions, Narrabri Shire Council, Resources Regulator, Forestry Corporation (FCNSW), BCS and integrated into the strategy and resubmitted for final assessment via the major project portal 11 June 2024. See Appendix C - Response to Regulatory Consultation and Appendix E - Rehabilitation Strategy Consultation. No response was received from North West Local Land Services (NWLLS). The last attempts to contact the NWLLS was via phone through the week ending 25/10/2024 and by email on 23/10/2024.



2.0 STRATEGIC CONTEXT

2.1 Current Development Consents, Leases and Licences

SSD 09_0182 (as modified) was granted on the 18 July 2012 and has since been modified on seven occasions to date **Table 2-1** summarises the current consents, authorisations and licences. **Table 2-2** lists the Modifications to SSD 09_0182 since its grant.

Table 2-1: Summary of Current Consents, Authorisations, and Licences

Lease/Licence/Approval	Date Granted	Expiry/Duration
Exploration Licences / Authorisations		
Exploration Permit Tender Area no. 1	22 December 1975	-
Authorisation (A)355	19 July 1984	19 July 2028
Authorisation A339	11 April 1984	11 April 2025
Coal Leases / Mining Lease		
CL 368	15 November 1990	14 November 2032
ML 1755	30 June 2017	30 June 2038
MLA 586	N/A – lodged on 5 May 2020	N/A
Project Approvals / Development Consent	s	
Development Consent DA36-88	22 August 1989	15 November 2011
MOD 1	22 July 2009	15 November 2011
MOD 2	19 October 2011	31 December 2013
SSD 09_0182	18 July 2012	31 December 2033
MOD 1	Withdrawn	N/A
MOD 2	17 February 2015	31 December 2033
MOD 3	17 March 2014	31 December 2033
MOD 4	23 March 2015	31 December 2033
MOD 5	30 August 2016	31 December 2033
MOD 6	7 July 2017	31 December 2033
MOD 7	27 May 2019	31 December 2033
MOD 9	2 March 2023	31 December 2033
MOD 8	22 January 2024	31 December 2036
Other Licences & Approvals		
EPBC Act Approval 2009/5256	11 February 2013	31 December 2053
EPL 12407 (as currently modified)	4 April 2016	-



Lease/Licence/Approval	Date Granted	Expiry/Duration
Approval of Controlled Works Part 8 of the Water Act 1912 – Floodplain construction works for rail loop	1 October 2013	-
Approval of Controlled Works Part 8 of the Water Act 1912 – Floodplain construction works for Kamilaroi Highway Access Road	5 June 2014	-
Water Access Licence (WAL) 12691	27 July 2012	Perpetuity
WAL 12767	8 April 2014	Perpetuity
WAL 15037	12 December 2013	Perpetuity
WAL 24103	1 September 2011	Perpetuity
WAL 12691	12 May 2015	Perpetuity
WAL 37519	14 June 2016	Perpetuity
WAL 37067	26 April 2016	Perpetuity
WAL 29473	26 July 2012	Perpetuity
WAL 29562	26 July 2012	Perpetuity
WAL 2571	12 December 2013	Perpetuity
WAL 2572	25 September 2013	Perpetuity
WAL 2595	12 December 2013	Perpetuity
WAL 2596	25 September 2013	Perpetuity
WAL 31084	22 August 2013	Perpetuity
WAL 36547	6 February 2014	Perpetuity
WAL 44134	21 April 2022	Perpetuity

Table 2-2: Summary of Modification Approval Dates and Activities

Modification	Approval Date	Activities
MOD1	Application Withdrawn	Emergency trucking operations.
MOD 2	17 February 2015	 Processing of up to 3.5. Mtpa of ROM coal in the CHPP in any calendar year.
		 Infrastructure, processing, and associated transport of up to 3 Mtpa of ROM coal from Tarrawonga Coal Mine.



Modification	Approval Date	Activities
MOD 3	17 March 2014	Construction of permanent mine access roads from the Kamilaroi Highway.
		 Temporary storage of processed mine overburden material at the existing Rock Quarry and the reuse of this material during the construction of the rail spur embankments.
		The reuse of the existing Daisymede laydown compound.
		The use of temporary in-pit fuel storage facilities.
MOD 4	23 March 2015	 Project boundary adjustments to include infrastructure and borrow pits built prior to the SSD 09_0182.
		 Alterations to existing infrastructure within the BCM, including the extension of two dirty water dams (SD12 & SD3).
		 Realignment of a haul road, extension of the ROM coal stockpile and construction of new hardstand areas within the Mine Infrastructure Area (MIA).
		 Construction of a security fence and firebreak along the approved disturbance boundary.
		Use of additional portable fuel storages within operational areas.
MOD 5	30 August 2016	 Construction of additional groundwater production bores and supporting infrastructure including pumps, access roads, water tanks and power lines.
		 Increase to the annual coal processing capacity of the CHPP from 3.5 to 4.2 Mtpa of ROM coal.
MOD 6	7 July 2017	Approval to transport a maximum of 10 Mtpa of product coal from site via the Boggabri Rail Spur, of which up to 8.6 million tonnes may be from the BCM and up to 3 million tonnes may be from the neighbouring Tarrawonga Coal Mine.
MOD 7	27 May 2019	Amend the available security mechanisms and timing to secure biodiversity offsets.
		Use of an approved stockpile area for BCM's product coal.
		 Undertake exploration and associated activities within the approved disturbance area.
		 Transport small tonnages of coal by road for testing and marketing purposes.
		Realign a small section of the project boundary.
MOD 8	22 January 2024	Increase the depth of approved mining operations to recover an additional coal resource.



Modification	Approval Date	Activities
MOD 9	2 March 2023	Operation of a mobile rock crushing plant within the existing BCM Disturbance Boundary.
		 Relocation of the Pre-shift Start-up Infrastructure closer to active mining operations.
		 Minor administrative changes relating to the management of rehabilitation activities to align with changes to the <i>Mining</i> Regulation 2016.

2.2 Regulatory Requirements for Rehabilitation

2.2.1 Commonwealth Legislation

The following Commonwealth statutory requirements associated with the rehabilitation and mine closure management for BCOP have been considered during the development of the Rehabilitation Strategy.

2.2.2 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act protects Matters of National Environmental Significance (MNES), including listed migratory species and threatened species/ecological communities. Previous surveys and assessments have identified that the BCM will impact upon EPBC Act listed ecological communities and native vegetation which provides potential habitat for threat-listed and migratory species.

Based on the likely impacts on MNES, the BCM Continuation Project was previously determined to be a controlled action under the EPBC Act, with impact assessment and regulatory approval provided through an accredited process (i.e. for the former Part 3A of the EP&A Act). BCOP obtained approval for the BCM from the (then) Commonwealth Minister for the Department of the Environment under the EPBC Act in February 2013.

The conditions of the EPBC Approval relevant to the Rehabilitation Strategy are provided in **Appendix A**.

2.2.3 State Legislation

The following State statutory requirements associated with rehabilitation and mine closure management at BCOP have been considered during the development of this Rehabilitation Strategy.

2.2.3.1 Environmental Planning and Assessment Act 1979

The EP&A Act facilitates mechanisms to encourage:

- Proper management, development and conservation of natural and artificial resources, including
 agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of
 promoting the social and economic welfare of the community and a better environment.
- Promotion and co-ordination of the orderly and economic use and development of land.
- Protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats.
- Sharing of the responsibility for environment planning between the different levels of government in the State.

BCOP was granted SSD 09_0182 by the (then) PAC under the former Section 75J of Part 3A of the EP&A Act in July 2012.



The various conditions of the SSD 09_0182 relevant to rehabilitation management are detailed in **Appendix A. Table 2-3** provides an indication of the commitments made by BCOP in the *Boggabri Coal Mine Environmental Assessment* (EA) (Hansen Bailey, 2010) relevant to rehabilitation activities at BCM.

Table 2-3: Boggabri EA Rehabilitation Commitments

Applicable Condition	Requirement	Document Reference
EA Commitments (Hansen Bailey, 2010)	
Section 8.16.3 p.164	It is proposed that the final land use of the rehabilitated site will include those similar to pre-mining land uses including biodiversity, pastoral, forestry and recreational opportunities.	RMP
Section 8.16.3 p.165	The Mine Disturbance Area: The final land use of this area will comprise a mixture of the native vegetation communities including, grassy woodland (70%), shrubby woodland / open forest (25%) and riparian forest (5%) for conservation and forestry.	RMP
Section 8.16.3 p.165	The Mine Infrastructure Area and Haul Route / Rail Spur: final land use will incorporate a mixture of land capability classes III, IV and V for agricultural lands. The rehabilitation strategy will, where practical, revegetate the haul route and rail spur corridor to maximise its ecological contribution to the east west wildlife corridor.	RMP
Section 8.16.3 p.167	The final void will be reshaped to ensure the land form is safe, stable, non-erosive and revegetated as is practical.	RMP

2.2.3.2 Mining Act 1992

The *Mining Act 1992* provides mechanisms to encourage and facilitate the discovery and development of mineral resources in NSW. BCOP holds various mining leases and exploration licences (or authorisations) under the *Mining Act 1992*, including Coal Lease (CL) 368 and Mining Lease (ML) 1715, Authorisation (A) 355 and A 339. An application for a ML was also submitted on 5 May 2020 for the portion of land within A 355 which is covered by the BCM Project Boundary for SSD 09_0182.

The *Mining Amendment (Standard Conditions of Mining Leases – Rehabilitation) Regulation 2021* (the Regulation), commenced on 2 July 2021. A 12-month transition period was applied for mining operators to develop the documentation required under the Regulation and from which point in time, the new mining lease conditions will apply. **Table 2-4** lists the new mining lease conditions relating to rehabilitation that came into effect on 2 July 2022. These standard mining lease conditions have been addressed separately to this Rehabilitation Strategy within the RMP and supporting documentation.

Table 2-4: Standard Mining Lease Conditions

Applicable Condition	Requirement	Document Reference
Mining Regulate	ion 2016 Schedule 8A Part 2	
5	Rehabilitation to occur as soon as reasonably practicable after disturbance. The holder of a mining lease must rehabilitate land and water in the mining area that is disturbed by activities under the mining lease as soon as reasonably practicable after the disturbance occurs.	RMP



Applicable Condition	Requirement	Document Reference
6	Rehabilitation must achieve final land use.	RMP
	(1) The holder of a mining lease must ensure that rehabilitation of the mining area achieves the final land use for the mining area.	
	(2) The holder of the mining lease must ensure any planning approval has been obtained that is necessary to enable the holder to comply with subclause (1).	
	(3) The holder of the mining lease must identify and record any reasonably foreseeable hazard that presents a risk to the holder's ability to comply with subclause (1).	
	Note— Clause 7 requires a rehabilitation risk assessment to be conducted whenever a hazard is identified under this subclause.	
	(4) In this clause—	
	final land use for the mining area means the final landform and land uses to be achieved for the mining area—	
	(a) as set out in the rehabilitation objectives statement and rehabilitation completion criteria statement, and	
	(b) for a large mine—as spatially depicted in the final landform and rehabilitation plan, and	
	(c) if the final land use for the mining area is required by a condition of development consent for activities under the mining lease—as stated in the condition.	
	planning approval means—	
	(a) a development consent within the meaning of the Environmental Planning and Assessment Act 1979, or	
	(b) an approval under that Act, Division 5.1.	
7	Rehabilitation risk assessment	RMP
	(1) The holder of a mining lease must conduct a risk assessment (a rehabilitation risk assessment) that—	
	(a) identifies, assesses and evaluates the risks that need to be addressed to achieve the following in relation to the mining lease—	
	(i) the rehabilitation objectives,	
	(ii) the rehabilitation completion criteria,	
	(iii) for large mines—the final land use as spatially depicted in the final landform and rehabilitation plan, and	
	(b) identifies the measures that need to be implemented to eliminate, minimise or mitigate the risks.	
	(2) The holder of the mining lease must implement the measures identified.	
	(3) The holder of a mining lease must conduct a rehabilitation risk assessment—	
	(a) for a large mine—before preparing a rehabilitation management plan, and	
	(b) for a small mine—before preparing the rehabilitation outcome	



Applicable Condition	Requirement	Document Reference
	documents for the mine, and	
	(c) whenever a hazard is identified under clause 6(3)—as soon as reasonably practicable after it is identified, and	
	(d) whenever given a written direction to do so by the Secretary.	
9	General requirements for documents	RMP
	A document required to be prepared under this Division must—	
	(a) be in a form approved by the Secretary, and	
	Note—	
	The approved forms are available on the Department's website.	
	(b) include any matter required to be included by the form, and	
	(c) if required to be given to the Secretary—be given in a way approved by the Secretary.	
10	Rehabilitation management plans for large mines	RMP
	(1) The holder of a mining lease relating to a large mine must prepare a plan (a rehabilitation management plan) for the mining lease that includes the following—	
	(a) a description of how the holder proposes to manage all aspects of the rehabilitation of the mining area,	
	(b) a description of the steps and actions the holder proposes to take to comply with the conditions of the mining lease that relate to rehabilitation,	
	(c) a summary of rehabilitation risk assessments conducted by the holder,	
	(d) the risk control measures identified in the rehabilitation risk assessments,	
	(e) the rehabilitation outcome documents for the mining lease,	
	(f) a statement of the performance outcomes for the matters addressed by the rehabilitation outcome documents and the ways in which those outcomes are to be measured and monitored.	
	(2) If a rehabilitation outcome document has not been approved by the Secretary, the holder of the mining lease must include a proposed version of the document.	
	(3) A rehabilitation management plan is not required to be given to the Secretary for approval.	
	(4) The holder of the mining lease—	
	(a) must implement the matters set out in the rehabilitation management plan, and	
	(b) if the forward program specifies timeframes for the implementation of the matters—must implement the matters within those timeframes.	



Applicable Condition	Requirement	Document Reference
11	Amendment of rehabilitation management plans	RMP
	The holder of a mining lease must amend the rehabilitation management plan for the mining lease as follows—	
	 (a) to substitute the proposed version of a rehabilitation outcome document with the version approved by the Secretary—within 30 days after the document is approved, 	
	(b) as a consequence of an amendment made under clause 14 to a rehabilitation outcome document—within 30 days after the amendment is made,	
	(c) to reflect any changes to the risk control measures in the prepared plan that are identified in a rehabilitation risk assessment—as soon as practicable after the rehabilitation risk assessment is conducted,	
	(d) whenever given a written direction to do so by the Secretary—in accordance with the direction.	
12	Rehabilitation outcome documents	RMP
	(1) The holder of a mining lease must prepare the following documents (the rehabilitation outcome documents) for the mining lease and give them to the Secretary for approval—	
	(a) the rehabilitation objectives statement, which sets out the rehabilitation objectives required to achieve the final land use for the mining area,	
	(b) the rehabilitation completion criteria statement, which sets out criteria, the completion of which will demonstrate the achievement of the rehabilitation objectives,	
	(c) for a large mine, the final landform and rehabilitation plan, showing a spatial depiction of the final land use.	
	(2) If the final land use for the mining area is required by a condition of development consent for activities under the mining lease, the holder of the mining lease must ensure the rehabilitation outcome documents are consistent with that condition.	
14	Amendment of rehabilitation outcome documents and forward program	RMP
	(1) This clause applies to—	
	(a) a rehabilitation outcome document if it has been approved by the Secretary, and	
	(b) a forward program if it has been given to the Secretary.	
	(2) The holder of a mining lease must not amend a document to which this clause applies that relates to the mining lease unless—	
	(a) the Secretary gives the holder a written direction to do so, or	
	(b) the Secretary, on written application by the holder, gives a written approval of the amendment.	
	(3) The holder of the mining lease must amend the document in accordance with the Secretary's direction or approval.	
	(4) Nothing in this clause prevents the holder of a mining lease preparing a draft amendment for submission to the Secretary for approval.	



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



Applicable Condition	Requirement	Document Reference
	(1) This clause applies to the following documents—	
	(a) a rehabilitation management plan,	
	(b) a forward program,	
	(c) an annual rehabilitation reports.	
	(2) The holder of a mining lease must make a document to which this clause applies publicly available by—	
	(a) publishing it on its website in a prominent position, or	
	(b) if the holder does not have a website— providing a copy of it to a person—	
	(i) on the written request of a person, and	
	(ii) without charge, and	
	(iii) within 14 days after the request is received.	
	(3) If a document is published on the website of the holder of the mining lease, the holder must ensure that it is published—	
	(a) for a rehabilitation management plan—within 14 days after it is prepared or amended, or	
	(b) for a forward program or an annual rehabilitation report—within 14 days after it is given to the Secretary or amended,	
	(4) Personal information within the meaning of the Privacy and Personal Information Protection Act 1998 is not required to be included in a document made available to a person under this clause.	
17	Records demonstrating compliance.	RMP
	The holder of a mining lease must create and maintain records of all actions taken that demonstrate compliance with each of the conditions set out in this Part.	
	Note—	
	The Act, sections 163D and 163E provide for the form in which records must be kept and the period for which they must be retained.	



Applicable Condition	Requirement	Document Reference
18	Report on non-compliance	RMP
	(1) The holder of a mining lease must provide the Minister with a written report detailing any non-compliance with—	
	(a) a condition of the mining lease, or	
	Note—	
	The Act, section 364A contains provisions relating to the use and disclosure of information provided under this condition.	
	(b) a requirement of the Act or this Regulation relating to activities under the mining lease.	
	(2) The holder of the mining lease must provide the report within 7 days after becoming aware of the non-compliance.	
	(3) The holder of the mining lease must ensure the report—	
	(a) identifies the condition of the mining lease, or the requirement of the Act or this Regulation, to which the non-compliance relates, and	
	(b) describes the non-compliance and specifies the date or dates on which, or the period during which, the non-compliance occurred, and	
	(c) describes the causes or likely causes of the non-compliance, and	
	(d) describes the action that has been taken, or will be taken, to mitigate the effects, and to prevent any recurrence, of the non-compliance.	

2.2.3.3 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) is the key piece of environment protection legislation, which aims to protect, restore and enhance the quality of the environment in NSW by rationalising, simplifying and strengthening the regulatory framework for environment protection.

The POEO Act ensures that during construction and operations, the operation of any plant or equipment is undertaken in a manner that does not cause pollution from those premises and operations are also carried out in a competent manner.

Under the POEO Act, certain industrial activities (including the project) require an EPL. Each EPL limits lawful pollution emissions to air, land and water to specific thresholds.

BCOP holds EPL No: 12407 under the POEO Act.

There are currently no specific EPL conditions relating to rehabilitation or mine closure activities, however issues such as noise, water and air quality criteria in the EPL are potentially impacted via rehabilitation and mine closure activities. Monitoring requirements of the EPL apply during closure and rehabilitation activities until surrender of the licence.

2.2.3.4 Brigalow and Nandewar Community Conservation Area Act, 2005

The *Brigalow and Nandewar Community Conservation Area Act 2005* (BNCCA Act) provides the mechanisms to reserve forested land in the Brigalow and Nandewar area to create a Community Conservation Area, which provides for permanent conservation of land, protection of areas of natural and cultural heritage significance to Aboriginal people and sustainable forestry, mining and other appropriate uses.

The Brigalow and Nandewar Conservation Area Agreement was made pursuant to the BNCCA Act.



The Leard State Forest is listed under the Brigalow and Nandewar Conservation Area (2005) for ongoing forestry, recreation and mining activities. Consultation with Resources Regulator, OEH (now BCSD), Forestry Corporation of NSW and the Brigalow and Nandewar Community Conservation Area committees will be required as part of the mine planning process to consider the post mining zoning of the Leard State Forest.

2.2.3.5 Biodiversity Conservation Act 2016

The purpose of the NSW *Biodiversity Conservation Act 2016* (BC Act) is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future. The BC Act lists threatened species, populations and ecological communities as well as critical habitat and key threatening processes that must be considered when assessing the effects of an activity.

Following the repeal of the *Threatened Species Conservation Act 1995* (TSC Act) and *Native Vegetation Act 2003* (NV Act) in 2017, the BC Act is now the key State legislation for the protection of biodiversity values in NSW. Threatened ecological communities and species previously listed under the TSC Act are now listed under the BC Act.

The EA identified one threatened ecological community and thirteen species listed under the TSC Act that are likely to be significantly impacted by the BCM.

Mitigation measures associated with the provisions of the BC Act (as per the repealed TSC Act) will apply during the rehabilitation phase of the Project.

2.2.3.6 Biosecurity Act 2015

The *Biosecurity Act 2015* guides the management of weeds at the regional level throughout NSW. Under the Act, all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risks they may pose. Any person who deals with any plant who knows or ought to know of any biosecurity risk, has the duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable. Individual landholders and managers are required under the Act to control priority weeds for their area according to the relevant biosecurity toolset.

BCOP has a requirement to manage weeds on BCOP owned and managed land in accordance with the requirements of the Act.

2.2.3.7 Local Land Services Act 2013

This Act repealed the *Rural Lands Protection Act the Rural Lands Protection Amendment Act 2008* and the *Catchment Management Authorities Act 2003*. It provides the mechanisms to ensure responsibility for management and delivery of local land services in the social, economic and environmental interests of the State in accordance with any State priorities for local land services.

This Act specifies a number of obligations of owners and occupiers of private land, including:

- An occupier of any private land on whom a general destruction obligation in relation to a pest is imposed by a pest control order must eradicate any pest on the land by any lawful method (or, if the order specifies a method to be used, by the method specified).
- An owner or occupier of land who is served with an individual eradication order by a board must comply with the individual eradication order.

Under this Act, BCOP has a requirement to comply with pest control and eradication orders served by the North West Local Land Services (LLS).



2.3 Strategic Framework for Mine Closure

The Strategic Framework for Mine Closure has evolved as a cooperative development between the Australian and New Zealand Minerals and Energy Council (ANZMEC) and the Australian Minerals Industry (represented by the Minerals Council of Australia (MCA)). It is designed to provide a broadly consistent framework for mine closure across the various Australian jurisdictions.

The Strategic Framework for Mine Closure is structured around a set of objectives and principles grouped under six key areas, including:

- Stakeholder involvement;
- Planning;
- Financial Provision;
- Implementation;
- · Standards; and
- Relinquishment.

This Rehabilitation Strategy was developed in coordination of the Strategic Framework for Mine Closure. **Table 2-5** identifies the principles of the Strategic Framework with the associated document reference within this strategy.

Table 2-5: Strategic Framework Mine Closure Principles

Principle	Description	Document Reference
Stakeholder involvement	Objective: To enable all stake holders to have their interests considered during the mine closure process.	Section 7.0
	Principles:	
	Identification of stakeholders and interested parties is an important part of the closure process.	
	Effective consultation is an inclusive process which encompasses all parties and should occur throughout the life of mine.	
	A targets communication strategy should reflect the needs of the stakeholder groups and interested parties.	
	4. Adequate resources should be allocated to ensure the effectiveness of the consultation process.	
	Wherever practical, work with communities to manage the potential impacts of mine.	
Planning	Objective: To ensure the process of closure occurs in an orderly, cost-effective and timely manner.	This document and Final void and
	Principles:	Mine Closure Plan
	Mine closure should be integral to the whole of mine life plan.	· iuii
	A risk-based approach to planning should reduce both cost and uncertainty.	
	3. Closure plans should be developed to reflect the status of the project or operation.	



Principle	Description	Document Reference
	Closure planning is required to ensure that closure is technically, economically and socially feasible.	
	The dynamic natures of closure planning require regular and critical review to reflect changing circumstances	
Financial provision	Objective: To ensure the cost of closure is adequately represented in company accounts and that the community is not left with a liability.	Rehabilitation Cost Estimate process
	Principles:	
	A cost estimate for closure should be developed form the closure plan.	
	Closure cost estimates should be reviewed regularly to reflect changing circumstances.	
	The financial provisions for closure should reflect the real cost.	
	Accepted accounting standards should be the basis for the financial provision.	
	Adequate securities should protect the community from closure liabilities.	
Implementation	Objective: To ensure there is a clear accountability, and adequate resources, for the implementation of the closure plan.	Section 5.0, Section 9.0
	Principles:	
	The accountability for resourcing and implementing the closure plan should be clearly identified.	
	Adequate resources must be provided to assure conformance with the closure plan.	
	The on-going management and monitoring requirements after closure should be assessed and adequately provided for.	
	A closure business plan provides the basis for implementing the closure plan.	
	The implementation of the closure plan should reflect the status of the operation	
Standards	Objective: To establish a set of indications which will demonstrate the successful completion of the closure process	Section 2.0, Section 3.0,
	Principles:	Section 7.0, RMP and Final Void
	Legislation should provide a broad regulatory framework for the closure process.	and Mine Closure Plan
	It is in the interest of all stakeholders to develop standards that are both acceptable and achievable.	
	Completion criteria are specific to the mine being closed, and should reflect its unique set of environmental, social and economic circumstances.	
	An agreed set of indicators should be developed to demonstrate the successful rehabilitation of a site.	
	Targeted research will assist with both government and industry in making better and more informed decisions.	



Principle	Description	Document Reference
Relinquishment	Objective: To reach a point where the company has met agreed completion criteria to the satisfaction of the Responsible Authority. Principles: 1. A Responsible Authority should be identified and held accountable to make the final decision on accepting closure. 2. Once the completion criteria have been met, the company relinquish their interest.	This document, RMP and Final Void and Mine Closure Plan
	Records of the history of a closed site should be preserved to facilitate future land use planning	



3.0 REHABILITATION OBJECTIVES AND COMPLETION CRITERIA

3.1 Rehabilitation Objectives

The principal objective for rehabilitation at BCOP is to rehabilitate the disturbed mining areas to a condition where the landforms, soils, hydrology, flora and fauna are self-sustaining, and compatible with the surrounding environment.

The end land use for the BCM as approved in SSD 09_0182 is predominately biodiversity (particularly on land within the mining area). There are some areas at BCM which have been disturbed for the construction of mining infrastructure which will be rehabilitated to an agricultural land use and soil capability including Class 3 (high capability), Class 4 (moderate capability) and Class 5 (moderate-low capability) at mine closure.

The approved final land uses for BCM are compatible with adjoining lands, including the Leard State Forest and the agricultural lands of the Namoi River catchment. BCOP will consider the opportunities for a diverse post-mining landscape and land use where practical.

Rehabilitation strategies within the rehabilitated mining areas focus on the establishment of the vegetation communities conforming to the White Box, Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the Nandewar Bioregion (Box Gum Woodland) community which is listed as a Critically Endangered Ecological Community under the BC Act and EPBC Act. This includes the establishment of Box Gum Woodland on mine rehabilitated areas in conjunction with the restoration of the Box Gum Woodland community on extensive areas of derived native grassland on the neighbouring biodiversity offset properties held in respect of the BCM.

The mine site rehabilitation activities undertaken are integrated with the BCM Biodiversity Offset Strategy (BOS) which aims to establish a regional east west wildlife corridor. This regional wildlife corridor will create a linkage to remnant vegetation between Namoi River to the west of the BCM through the Leard State Forest to the Nandewar Range to the east.

Re-grading of overburden dumps has (to date) and will be undertaken to produce slope angles, lengths and shapes which are compatible with proposed land capability classifications suitable for the post mining land use and have a low potential to erode. The design profile and associated requirements are generally consistent with rehabilitation techniques previously employed on parts of the existing rehabilitated overburden dumps. A landform drainage design will also be established to appropriately convey runoff from the newly created catchments and integrate these with surrounding catchments by directing water towards natural drainage lines of associated ephemeral creeks.

Rehabilitation objectives, management goals and key actions have been developed with consideration of all planning approval and statutory requirements.

General rehabilitation objectives are identified within Schedule 3, Condition 69 of SSD 09_0182, with other rehabilitation objectives identified as part of the RMP documentation. A consolidated list of rehabilitation objectives is summarised in **Table 3-1**.



Table 3-1: BCM Rehabilitation Objectives

Feature	Rehabilitation Objective
Mine site (as a whole), including the final void.	 Safe, stable and non-polluting Minimise the size and depth of the final void as far as is reasonable and feasible and ensure the void contains no retained surface water (i.e. no pit lake) Constructed landforms drain to the natural environment
Surface Infrastructure	Decommission and remove, unless the Executive Director, Mineral Resources in Resources Regulator agrees otherwise
Waterways	 Water is managed to ensure that clean and dirty water systems are separated No pollution of waterways
Other land	 Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of: local native plant species (unless the Executive Director Mineral Resources in Resources Regulator agrees otherwise); a landform consistent with the surrounding environment; stable free draining landform able to support proposed vegetation, Ecological biodiversity is promoted
Community	 Ensure Public Safety Minimise the adverse socio-economic effects associated with mine closure Safety risks are eliminated as far as practical Ensure that cultural heritage is not impacted and is appropriately managed

Rehabilitation objectives have been further broken down into short, medium or long term. Each category is summarised as follows:

- Short term rehabilitation objectives:
 - Progressively reshape and stabilise disturbed areas.
 - Provide structural erosion control measures.
 - Ameliorate spoils and soils to address physical, chemical and biological constraints to revegetation and erosion stability.
 - Establish species which will out compete potential weed species and provide rapid soil surface cover.
 - Regularly review and refine rehabilitation methods.
- Medium term rehabilitation objectives:
 - Establishment of the structural dominant species from the relevant native vegetation communities.
 - Demonstrating rehabilitation succession in comparison with analogue sites.
 - Reducing reliance on structural drainage and erosion control methods.



- Long term rehabilitation objectives:
 - Monitoring rehabilitation areas to ensure stable and sustainable rehabilitation including succession of planted native vegetation toward analogue native vegetation communities.
 - Applying adaptive management measures if natural succession is not occurring.
 - Demonstrating rehabilitation performance.
 - Encouraging fauna movement across the Leard State Forest through the establishment of a regional wildlife corridor.

3.1.1 Rehabilitation Outcome Documents

The Rehabilitation Outcomes Documents (including the Proposed Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria) are to be submitted to the NSW Resources Regulator for approval (Clauses 9, 12 and 15(b) of Schedule 8A of the *Mining Regulation 2016*). The latest round of proposed rehabilitation objectives was submitted via the NSW Resources Regulator's online portal on the 6 October 2023. These rehabilitation objectives were approved by the Resources Regulator on 13 October 2023.

The approved rehabilitation objectives are included in Section 4 of the RMP.

3.1.2 Completion Criteria

The proposed rehabilitation completion criteria have not been submitted to the Resources Regulator to date. Completion criteria are objective target levels or values that can be measured to quantitatively demonstrate the progress and ultimate success of a biophysical process.

The proposed rehabilitation completion criteria have been presented with the recently approved rehabilitation objectives in Section 4 of the RMP.

3.2 Final Land Use Statement

The final landform and rehabilitation plan for the BCM will be undertaken to ensure consistency with the National Recovery Plan for White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (DECCW, 2010) (see **Figure 3-1**).

The Rehabilitation Strategy broadly includes:

- Rehabilitation of disturbed areas to form part of a regional east west wildlife corridor created as part of the BOS. This will create a linkage to remnant vegetation between the Namoi River to the west through the Leard State Forest to the Nandewar Range to the east;
- Revegetation of the post mine landscape with native vegetation, comprising a mixture of native grassy
 woodland, shrubby woodland/ open forest, riparian forest vegetation types and Box Gum Woodland with
 fauna habitat for Threatened species to encourage the re-establishment of pre-mining biodiversity
 values; and
- Ensuring the sustainability of the post mining ecological values of the landscape.

The long-term security and management of Leard State Forest will be subject to review and recommendations in the development of the Boggabri, Tarrawonga, Maules Creek (BTM) Complex Regional Biodiversity Strategy. Biodiversity is the focus of the final land uses within the BCM approved mine disturbance boundary.



The final land uses at the BCM will include the following:

- Native Ecosystem Areas, including three vegetation communities:
 - Grassy Woodland on fertile soils (Box Gum Woodland);
 - Riverine Woodland; and
 - Shrubby Woodland/Open Forest on skeletal soils;
- Agricultural grazing areas which will comprise grassland / pasture on land which has been rehabilitated to land capability classes III, IV and V;
- Water Management Areas including water drainage lines in the rehabilitated landform; and
- Final Void referring to the treated highwall areas.

The Water Storage Areas within the Final Landform Design are intended to be temporarily retained to assist in managing the runoff from the recently rehabilitated landforms. Once the upstream landform has been assessed to be stable and within acceptable erosion and contamination limits, the water management structures will be decommissioned and rehabilitated. Further consultation is required with FCNSW to ensure that this is an acceptable final land use.

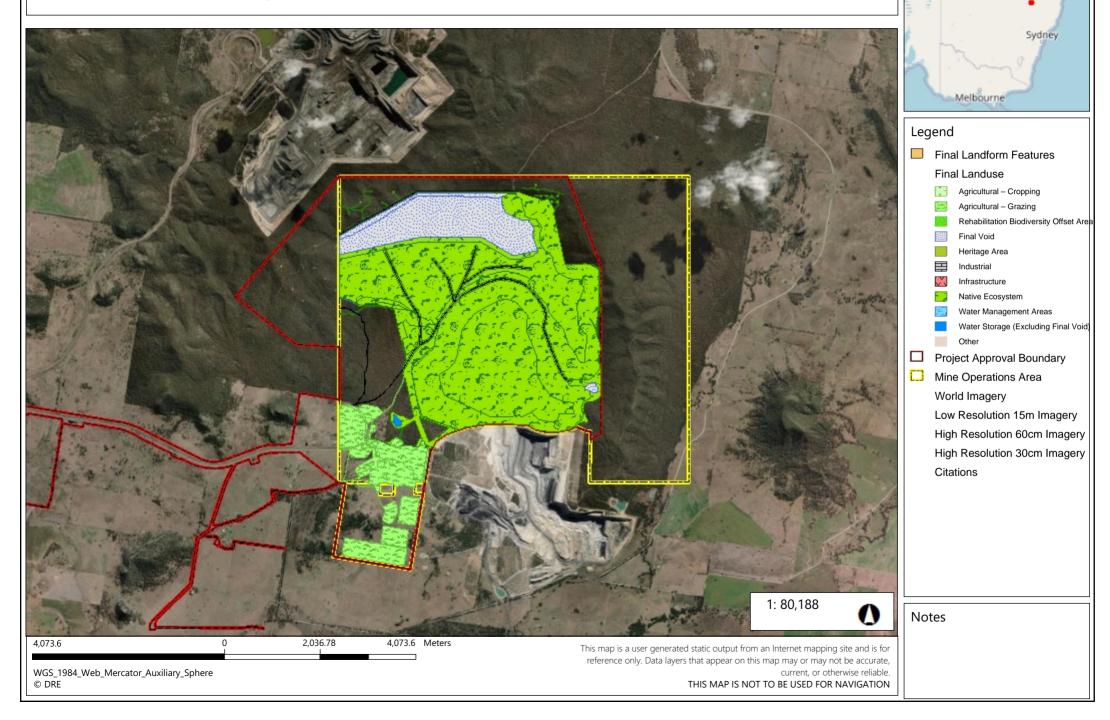
3.3 Final Landform and Post Mining Land Uses

The final land use domains for the BCM are detailed in **Table 3-2**. These final land use domains are illustrated on **Figure 3-1**.

Table 3-2: Final Land Use Domains

Referenc e	Final Land Use Domain
А	Native Ecosystem: Grassy Woodland on fertile soils (Box Gum Woodland)
А	Native Ecosystem: Riverine Woodland
А	Native Ecosystem: Shrubby Woodland/Open Forest on skeletal soils
В	Agricultural – grazing: Grassland / pasture with a mix of land capability classes III, IV and V for grazing pasture
G	Water Storage
J	Final Void

Figure 3-1 Final Landform and Rehabilitation Plan





4.0 REHABILITATION STRATEGY IMPLEMENTATION

4.1 Rehabilitation Schedule Overview

SSD 09_0182 currently allows for mining operations to continue until the end of 2036. However, additional coal resources are known to exist within the BCM mining authorities which may be subject to the relevant approvals under the EP&A Act at some time in the future. The mining of the additional coal resources within the existing mining authorities was contemplated within the Boggabri EA, which illustrated a Year 28 Mine Plan.

During the life of mine, rehabilitation is focused on the progressive rehabilitation of Overburden Emplacement Areas (OEAs) which have been developed generally in accordance with the approved Conceptual Final Landform design. Rehabilitation also focusses on the temporary rehabilitation of unused areas around infrastructure areas and the establishment of long-term water management structures. Simultaneously, rehabilitation programs are to be undertaken to supplement and enhance the habitat contained across BCOPs regional BOAs.

BCOP is committed to the implementation of this Rehabilitation Strategy. Rehabilitation will be undertaken progressively in accordance with the Strategy using the RMP and Forward Work Program. The RMP and Forward Work Program will be developed in accordance with this Rehabilitation Strategy and will include the detailed measures and schedules for all rehabilitation activities. The ongoing review and refinement of rehabilitation completion criteria will be undertaken as part of the RMP and rehabilitation reform processes.

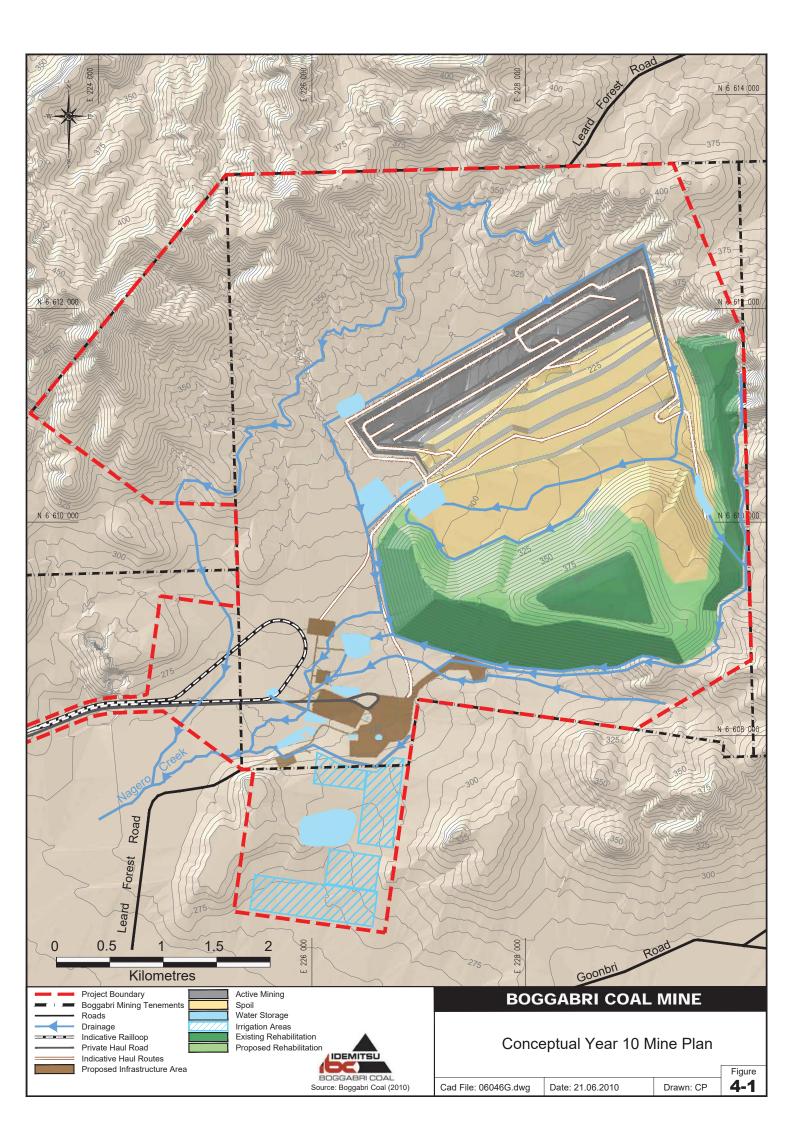
Consistent with the Resources Regulator's guidelines and policy, the RMP and Forward Work Program will identify rehabilitation domains for the site. This includes specific management and rehabilitation objectives for each domain area, at different stages of the development. The RMP developed for the mining authorisations held under the *Mining Act 1992* is also informed by the preparation of a Rehabilitation Risk Assessment to identify the key risks to rehabilitation achieving the Rehabilitation Objectives and Completion Criteria. BCOP takes a risk-based approach to achieving the required rehabilitation outcomes. A summary of the key risks identified to rehabilitation at BCM and the control measures to be implemented to manage these risks is provided within **Appendix D**. It is noted that the holder of a mining authorisation may also be directed by the Resources Regulator to implement further risk control measures required to achieve effective rehabilitation outcomes during the life of the mine.

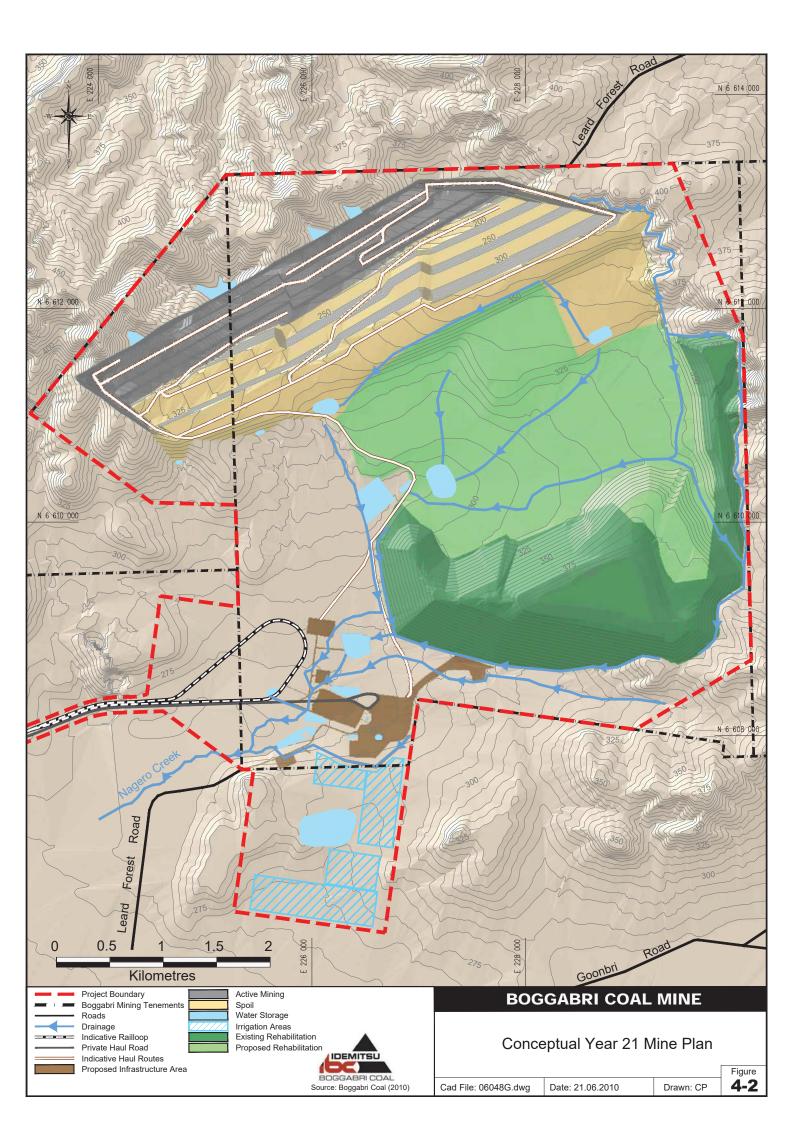
The monitoring of rehabilitation performance against the completion criteria will be reported in the Annual Rehabilitation Reports. A similar update will also continue to be included into the Annual Review.

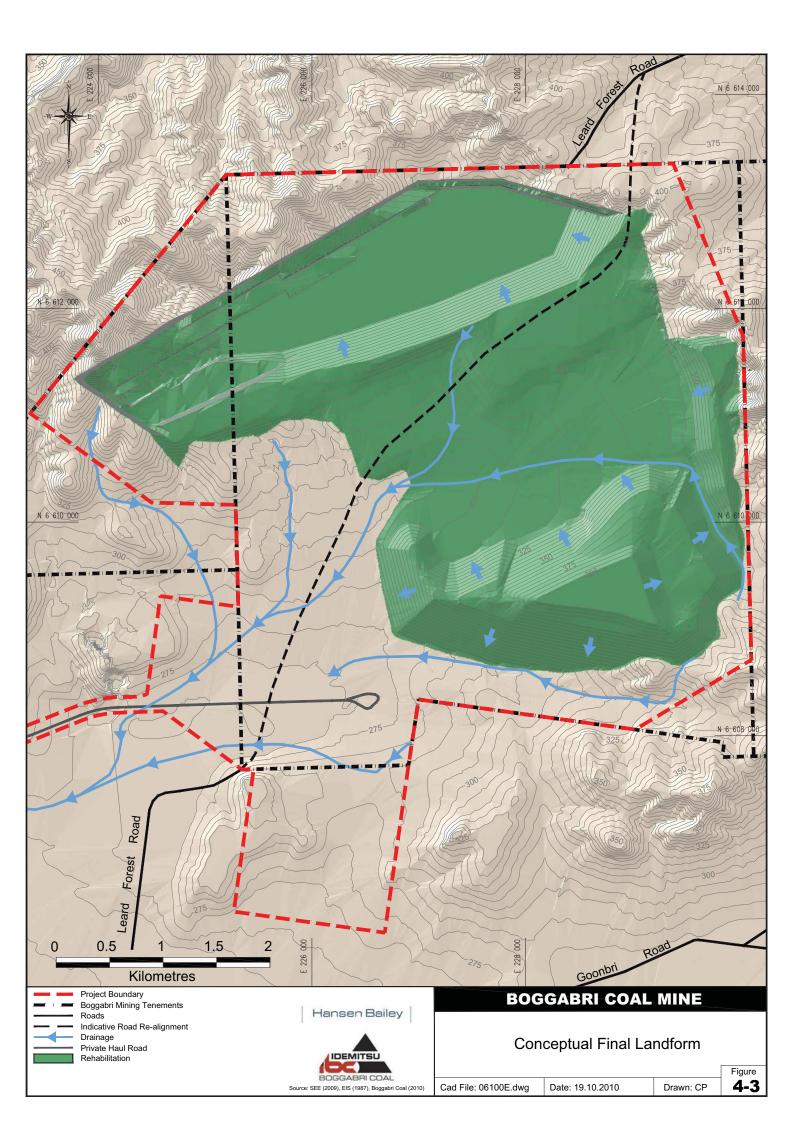
The existing mine infrastructure areas, CHPP and trainload out facilities will remain in place throughout the remainder of approved mining operations. The rail loop and other infrastructure at the former Boggabri Coal Terminal (BCT), adjacent to the Werris Creek to Mungindi Railway line currently remains in place and is intended to for the remainder of the approved mining operations. At the completion of mining, all related infrastructure within the Project Boundary will be decommissioned and removed in accordance with the relevant guidelines to enable these areas to be rehabilitated to the approved final land uses.

It is noted, that at the time of drafting this Rehabilitation Strategy, BCOP has received approval to modify SSD 09_0182 from the NSW Government to facilitate some changes to the approved mine plans, however EPBC Approvals remain pending (i.e. MOD 8). These mine plan changes involve increasing the depth of mining operations and results in adjustments to the approved Conceptual Final Landform design, see **Figure 4-3**. Upon the grant of the EPBC Approvals for MOD 8, this Rehabilitation Strategy will be revised to reflect changes made to the rehabilitation schedule, and to include all staged plans up until the end of approved mining operations.

Figure 4-1 and Figure 4-2 illustrate the conceptual staged plans from the Boggabri EA (2010) for Years 10 and 21.









4.2 Mine Planning Rehabilitation Stages

Stages of rehabilitation or rehabilitation phases relates to the actions required to rehabilitate disturbed areas to the desired final land use. The following sections outline the general rehabilitation phases that is coordinated with the rehabilitation objectives and completion criteria.

Table 4-1 describes the rehabilitation phases relative to the activities at BCM.

Table 4-1: Rehabilitation Stages

Stage	Description
Active Mining	The process of undertaking mining and associated activities including controls implemented to manage risks and enhance rehabilitation outcomes.
Decommissioning	The process of removing plant and equipment from active services and rendering the area safe including removal and/or remediation of contaminants and hazardous materials.
Landform Establishment	The process of shaping unformed rock of other sub-stratum material the approved final landform. This includes earthworks activities such as cut and fill, rock raking, water storage and drainage construction.
Growth Medium Development	The process of establishing and enhancing the physical structure, chemical properties and biological properties of a soil stratum suitable for plant growth. This includes contour ripping, placing and spreading soil and application of ameliorants.
Ecosystem and Land Use Establishment	The process of seeding, planting and transplanting plant species to establish the desired vegetation communities.
Ecosystem and Land Use Development	The process of applying management techniques to encourage an ecosystem to grow and develop towards a desired and sustainable post mining land use outcome and ensure they meet the Rehabilitation Objectives and Completion Criteria.
Rehabilitation Completion	When rehabilitation areas can be demonstrated that they achieve their Rehabilitation Objectives and Completion Criteria, an application will be submitted to the NSW Resources Regulator for final sign off.

The RMP further identifies the key risks to the progress of rehabilitation achieving the desired outcomes and associated controls and mitigation measures.

Further details on each stage of rehabilitation outlined in **Table 4-1**, including specific procedures and processes is provided in Sections 6.2.1 and 6.2.7 of the RMP.

4.2.1 Rehabilitation Completion

The completion of rehabilitation activities can be signed off by the NSW Resources Regulator when the final landform and associated final land use is achieved and is able to be relinquished from the mining lease(s).

The NSW Resources Regulator can only sign-off on rehabilitation completion if the approved Rehabilitation Completion Criteria for the particular area of rehabilitation has successfully been met and the proponent lodges an application with appropriate documentary evidence is submitted to the NSW Resources Regulator for assessment.



The NSW Resources Regulator has prepared a *Guideline Achieving Rehabilitation Completion (Sign-Off)* which aims to identify, track and verify achievement of regulatory obligations under the Mining Act 1992 to achieve rehabilitation completion progressively and before mining lease relinquishment.

BCOP ultimately seeks to achieve rehabilitation completion to enable the ultimate relinquishment of the mining lease. However, this phase is some years off to date. BCOP will finalise its Rehabilitation Completion Criteria (as proposed within **Section 3.0**) for NSW Resources Regulators approval to enable sign-off of rehabilitation activities to be achieved.

4.3 Water Management

Water management at the BCM is guided by the Water Management Plan (WMP) which has been prepared in accordance with Schedule 3, Condition 38 of SSD 09_0182. The WMP includes the following sub-plans:

- Surface Water Management Plan (SWMP);
- Groundwater Management Plan (GMP); and
- Site Water Balance (SWB).

In addition to the WMP and its associated sub-plans, the BTM Complex Water Management Strategy (WMS) has been prepared by the BTM Complex mines (i.e. Boggabri, Tarrawonga and Maules Creek mines).

Water management is essential factor to achieving a stable, vegetated and ecologically diverse post-mining landscape. Effective water management mitigates the risks and impacts associated with erosion and sedimentation. The RMP further outlines the control management measures to be implemented for surface water, clean water, dirty water, coal contact water and groundwater. The management measures transfer throughout the life of operations to the closure and rehabilitation works.

BCOP hold various water access licences to account for the take of water as a result of its activities from neighbouring water sources under the relevant Water Sharing Plans. One of the objectives of each Water Sharing Plan is to manage the use of water sources to ensure equitable sharing between all users. By holding adequate water licences to account for water takes from the water source, BCOP is effectively minimising its impacts to surrounding water users. BCOP periodically reviews its water takes and licencing requirements to ensure adequate water access licences are held to account for the takes from the water source.

Water management measures that are implemented during operations include:

4.3.1 Surface Water Management

- Segregate clean runoff, dirty runoff and coal contact water generated from rainfall events and mining operations;
- Minimise the volume of coal contact water (surface runoff draining to pit and groundwater seepage that
 has been in contact with coal) generated by the BCM. Maximise area for clean surface run off as far as
 practicable;
- Provide sufficient on-site storage to avoid releases of coal contact water that could affect the quality of downstream watercourses; and
- Treat all dirty runoff from non-rehabilitated overburden areas to settle coarse suspended solids.

4.3.1.1 Clean Water Management

- Implementing clean water diversion drains where necessary with design features of:
 - 3H:1V side slopes, with a maximum depth of 1 m;
 - Revegetated to minimise the risk of erosion and deterioration in water quality due to turbidity;



- Base and sides of drains may require gypsum stabilisation were constructed in dispersive clay; and
- Scour protection will be required where velocities exceed 2 m/s or diversion drains are constructed in highly erosive soil.

4.3.1.2 Dirty Water Management

- Dirty water catchments are planned to ensure surface runoff from disturbed areas is collected in sediment dams to facilitate settlement of suspended solids within runoff water;
- Dirty water diversion drains designed for the peak 100-year ARI time of concentration storm event for the contributing catchment;
- Dirty water sediment dams will be sized in accordance with the guidelines Managing Urban Stormwater
 Soils and Construction Volume 1 (Landcom, 2004) using a 90th percentile 5-day rainfall total of 38.4 mm and will be based on the 'Type F' design given the local soil conditions;
- Dirty water sediment dams will be sized in accordance with the guidelines Managing Urban Stormwater
 Soils and Construction Volume 1 (Landcom, 2004) using a 90th percentile 5-day rainfall total of 38.4 mm and will be based on the 'Type F' design given the local soil conditions; and
- Dirty runoff catchment areas are rehabilitated as soon as practicable following disturbance. The conveyance of clean surface run off downstream is diverted around disturbed areas where feasible.

4.3.1.3 Coal Contact Water Management

- Coal contact water may be captured in sediment dams or mine water dams for storage and reuse. This water will not be released to the receiving environment;
- The water management system will aim to reuse as much coal contact water as possible onsite, which will be used as a priority for dust suppression and coal washing. Surplus coal contact water will be stored in-pit or mine water dams;
- Coal contact water diversion drains will be designed for the peak 100-year ARI time of concentration storm event for the contributing catchment. The volume of a coal contact water sediment dam will be sufficient to contain the volume from a 100-year ARI 72-hour storm event with freeboard for the local contributing catchment, and an additional 20% allowance for sediment storage; and
- Mine water dams will be sized based on water balance modelling, so as not to overflow under recorded historical climate conditions.

4.3.2 Groundwater

- Groundwater resources within the vicinity of BCM are regulated under the *Water Management Act 2000* (WM Act) and Water Sharing Plans which have been developed under this Act, including:
 - Water Sharing Plan for the Namoi Alluvial Groundwater Sources 2020 (Namoi Groundwater WSP);
 and
 - Water Sharing Plan for the NSW Murray Darling Basin Porous Rock Groundwater Sources Order 2020 (MDB Porous Rock WSP).
- Conducting a groundwater monitoring program in accordance with the GMP and the Aquifer
 Interference Policy (EPA 2012), identifying any changes to the natural groundwater systems as a result
 of mining operations, including water quality, pore pressure and pit seepage; and
- Groundwater impacts from mining activities will be managed in accordance with the GMP. The GMP
 has been prepared as an integral part of the WMP, and should be read in conjunction with the SWMP,
 SWB and WMS.



4.3.3 Post Mining Surface Water Management

During the closure and rehabilitation phase of the project, erosion and sediment control management measures will aim to be implemented, where practicable, on a case-by-case basis, to minimise the potential for soil erosion and to control potential sediment and pollution impacts from all close and rehabilitation works.

This will include:

- Post disturbance regrading to produce slopes, angles, and dimensions that are compatible with the proposed land use and not prone to unacceptable rate of erosion;
- Where practicable contoured furrows or contour banks will be constructed post disturbance regarding at intervals down the slope – to divide a long slope into a series of short slopes preventing runoff from reaching a depth or velocity that would cause erosion;
- Intercepted runoff will be diverted via temporary engineered channel naks, slope drains and energy
 dissipaters in concentrated flow situations with the aim of reducing slope length and flow velocity until
 adequate vegetation cover is achieved;
- Amelioration of dispersive spoil will aim to minimize the risk of rill, gully and tunnel erosion and to allow infiltration of surface water:
- Post reshaping, contour scarification will be considered for compacted surfaces with the aim of encourage infiltration and surface roughness;
- Cover crops, including salt tolerant grasses and legumes will be used where required, with the aim to minimise raindrop and sheet erosion of reshaped areas;
- The Stockpiles will be designed with heights to minimise additional disturbance and have 1:4 (Vertical:Horizontal) batters;
- The surface of soil stockpiles will be shaped in a manner to promote infiltration and minimise erosion until vegetation is established; and
- Rehabilitated areas will be free draining following the successful rehabilitation and stabilisation of overburden emplacement areas.

4.3.3.1 Re-establishment of Drainage Lines

BCOP has committed to proving a conceptual final landform design that will be free draining and integrate with the surrounding catchments. Initial batter slope modelling indicates that the current design of a linear batter gradient of 10° (17.5%) and lift to a height of 20 m initially constructed with diversion banks (berms), which are removed once target vegetation cover levels, are possible to provide a stable landform.

The reinstatement of drainage lines within the rehabilitated areas of the site will follow the *Guidelines for Establishing Drainage Lines on Rehabilitated Minesites* (DLWC, 1999) and the *Rehabilitation Manual for Australian Streams* (LWRRDC 2000). This process will be harmonized with the existing topography and natural drainage.

Design parameters for soil conservation and erosion control structures such as graded banks, chutes, and flumes will adhere to the specifications outlined in SCS Technical Handbook No. 5, Design Manual for Soil Conservation Works. Additionally, all sediment and pollution control facilities will be crafted in accordance with Managing Urban Stormwater: Soils and Construction (Landcom 2004 and DECC 2008), Volume 1 and Volume 2E.

Approximately 52 ha of riverine woodland are proposed to be rehabilitated within the existing and proposed drainage lines in the final landform, as outlined in the RMP.



4.3.3.2 Final Landform Surface Water and Groundwater Interactions

Water courses surrounding the Leard State Forest are primarily ephemeral in nature and are recharged via surface water runoff following rainfall rather than being fed by groundwater flows from adjacent alluvial sequences. Some surface water within the ephemeral drainage lines seeps into the underlying and adjacent alluvial aguifers which generally remain at or below the stream levels.

The Namoi River is located approximately 10 km to the west of BCM. The section of the Namoi River nearest to the BTM Complex has been identified as a gaining stream, being fed by the surrounding alluvials (CSIRO (2007) Water availability in the Namoi, a report to the Australian government from the CSIRO Murray-Darling Basin Sustainable Yields Project).

The Groundwater Impact Assessment for the MOD 8 Amendment assessed the potential post-mining impacts on the groundwater regime, including a consideration of the surface water and groundwater interactions. The Conceptual Final Landform design for MOD 8 Amendment remained consistent with the Conceptual Final Landform originally approved for SSD 09_0182. MOD 8 also sought not to alter the rehabilitation objectives subject to SSD 09_0182. This includes ensuring that the landforms are constructed to drain to the natural environment. The size and depth of the final void has been minimised as far as is reasonable and feasible to ensure that the void contains no pit lake. These designs are required by condition 69, Schedule 3 of SSD 09_0182. In the northwest corner of BCM, the final landform includes an area where a partially infilled void at 285 mAHD is lower than the surrounding terrain.

The water table simulated for the MOD 8 Amendment indicated groundwater breakthrough in the partially infilled area was constrained by evapotranspiration, with both the final landform level and water table at or near 285 mAHD.

Recovery simulations completed for MOD 8 Amendment indicated the final landform will act as a rainfall recharged groundwater source for the area. Groundwater from the BCM spoil is predicted to largely report to the adjacent Maules Creek and Tarrawonga voids. A smaller component will move to the southwest, towards the adjacent tongue of alluvium associated with Nagero Creek. Rehabilitation works that relate to *Guideline:* Works that interfere with water in a watercourse for a resource activity (DNRME 2019) and Guidelines for Controlled Activities on Waterfront Land (DPE 2022).

Water courses surrounding the Leard State Forest are primarily ephemeral in nature. BCM as a recharge area for the groundwater will act similarly with rainfall infiltrating the landform. The only areas in which groundwater is predicted to resurface after infiltrating the BCM Final Landform is at the final voids associated with the Maules Creek and Tarrawonga mines.

4.4 Biodiversity Management

The BMP provides the practical instruction for managing and controlling risks to biodiversity associated with the Project and directs the implementation of the reviewed Biodiversity Offset Strategy (WSP 2017a).

The BMP outlines the integration of a biodiversity offset strategy into the overall rehabilitation for the BCM. It includes short, medium, and long-term measures for managing vegetation and habitat, performance criteria for evaluating the strategy, and procedures for enhancing existing habitat, restoring native vegetation, salvaging resources, seed collection, fauna impact mitigation, connectivity improvement, Aboriginal heritage protection, salinity, weed and pest control, erosion, grazing, agriculture, access control, bushfire management, and translocation of threatened flora. A seasonally based monitoring program is detailed, along with potential risks and contingency measures.

This Rehabilitation Strategy has been developed to aligned with the commitments outlined in the BMP. Further, the rehabilitation monitoring program outlined in the RMP has also been outlined in **Section 6.0**. Rehabilitation monitoring activities are coordinated with the ecological monitoring conducted as a part of the BMP.



This integrated approach aims to enhance the overall effectiveness and efficiency of the ecological and rehabilitation efforts.

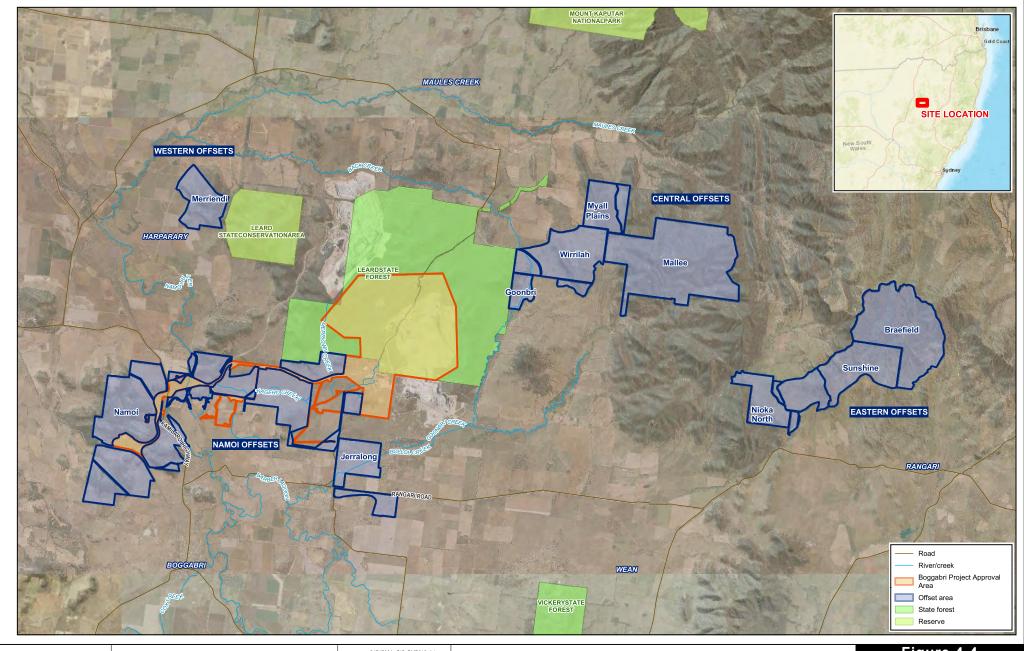
4.4.1 Biodiversity Offsets and Mine Rehabilitation

Historically, the regional area has been exposed to intensive agriculture land use, comprising primarily of sheep and wheat activities that dominate the project locality. These regional activities have led to the isolation of the Leard State Forest remnant from other isolated remnants within the locality and the region. Historically, the Nandewar Range, Leard State Forest and Namoi River floodplain were once linked by contiguous corridors of native vegetation.

The BCM Biodiversity Offset Strategy (BOS) was developed with the intention of recreating habitat linkages within this important environmental corridor, linking existing remnant patches of native vegetations and increasing the overall biodiversity value of the area. The re-establishment of the Regional East West Wildlife Corridor will facilitate the movement of threatened species throughout the region and provide for the conservation and restoration of large areas of threatened ecological communities, including Box Gum Woodland.

BCOP has acquired 10 biodiversity offset areas (BOAs) for inclusion into the revised BOS to recreate linkages within the Regional East West Wildlife Corridor. These properties have been selected based on their conservation values (commensurate with the impacts of the project) and their location within the Regional East West Wildlife Corridor.

Figure 4-4 illustrates the 10 BOAs and mine rehabilitation area forming the Regional East West Wildlife Corridor. **Table 4-2** details the BOA areas.





Imagery: BCPL (2018); Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri

OWSP Austesia Pig Ltd [YOSP] Copyright in the drawings, information and data secondal (The information) in the property of WSP. The document and the information was stall, but the use of the authorized recipient and this document of the property of WSP. The document and the information was stall, but the distribution of the property of the document of the information. Australia was distributed all careful property of the document of the information. South of the property of the document of the information. South of the property of the document of the information. South of the property of the document of the information of the property of the pr

BOGGABRI GOAL

MINE NAME. 2171706A_GIS_BMP018_A1

AUTHOR. SuansfiR

CHECKED BY. N.Cooper

DATE. 4/09/2018

Figure 4-4

PROJECT BOAs



Table 4-2: BOA Identification

Habitat Type	Grassland	Riverine Woodland	Grassy Woodland on Fertile Soils	Shrubby Woodlands on Open Skeletal Soils	Other Land (Intensive Agriculture	Total (Ha)
			Offset (Ha)			
Eastern Offset	ts					
Nioka North	269.9	115.1	176.4	278.6	17.9	857.9
Sunshine	248.8	171.5	81.2	151.8	84.7	738
Braefield	55.4	197.1	165.1	982.7	0.4	1,400.7
Central Offset	s					
Mallee	40.3	18.9	14.2	1,992.8	0	2,066.2
Myall Plains	62.0	0	66.5	300.9	43.9	473.3
Wirrilah	356.6	12.6	146.1	183.3	185.6	884.2
Goonbri	88.3	0	72.3	55.3	15.1	231
Namoi Offsets	,					
Namoi	1,368.9	81.1	567.6	939	258.3	3,214.9
Jerralong	300.8	0	209	13.4	46.9	570.1
Western Offsets						
Merriendi	154.9	0	177.7	150.6	0	483.2
Total (Ha)	2,945.90	596.30	1,676.10	5,048.40	652.80	10,919.5

To meet the Project's residual offset requirements under Schedule 3, Condition 43 of SSD 09_0182, BCOP has acquired five additional BOAs.

Each of the additional BOAs are within the study area of the Leard State Forest Regional Biodiversity Stage (2 – Strategy Report) (Umwelt (Australia) Pty Limited 2017), contribute to the Regional East West Wildlife Corridor and fulfil the BMP Approvals, which required offsetting an additional 1,000 ha of Box Gum Woodland. For further information refer to the BMP and BOS.

4.4.2 Biodiversity Completion Criteria

Under Schedule 3, Condition 49 of SSD_09_0182, completion criteria were developed for the BOAs. The criteria are directly linked to BBAM 2014 benchmarks and analogue sites from Leard State Forest sampled as part of the Biodiversity Monitoring Program. The completion criteria and performance indicators were incorporated into the RMP and Monitoring program outlined in **Section 6.0**. Refer the BMP for a summary of the BOA completion criteria.



4.4.3 BOA Management Zones

The BMP identifies four distinct management zones for the BOAs, including:

- Habitat management;
- Habitat restoration;
- Corridor restoration; and
- Other lands for agricultural zone.

The management of BOAs requires a combination of other passive (e.g. retaining fallen timber) and active (e.g. revegetation) measures. The type and extent of management differ between the offset management one as detailed in **Table 4-3**.

Management measures associated with the maintenance, enhancement and restoration of BOAs are described in detail in Appendix E of the BMP.

4.4.4 Integration of Biodiversity Offsets and Mine Rehabilitation

The RMP and the overarching rehabilitation strategy share the common objective of restoring and rehabilitating all areas impacted by mining activity. This involves revegetating the mine disturbance areas back to the native vegetation communities that existed prior to mining operations. This comprehensive revegetation effort not only emphasises biodiversity but will also contribute to the establishment of a regional biodiversity corridor from the Namoi River through to the Nandewar Ranges to the east of the BCM site.

The Rehabilitation Strategy, RMP, and BMP collectively align the final land use with the National Recovery Plan for White Box – Yellow Box – Blakely's Red Gum Woodland and Derived Native Grassland. This entails targeted revegetation to transition the post-mine landscape into natural vegetation communities and habitat for threatened species, all aimed at biodiversity conservation. Consequently, the BMP and RMP are closely integrated to address local and regional biodiversity goals.

Table 4-3: BOA Management Measures for Offset Zones

	Offset Management Zone			
Management Measure	Habitat Management Zone	Habitat Restoration Zone (Enhancement)	Corridor Enhancement Zone	
Fencing	Required	Required	Required	
Grazing Management for Conservation	Not required	Required	Required	
Weed and Pest Control	Required	Required	Required	
Fire Management for Conservation	Required	Required	Required	
Management of Human Access and Disturbance	Required	Required	Required	
Retention or Addition of Habitat Features	Required	Required	Required	
Nutrient Control	Not required	Required	Required	



	Offset Management Zone			
Management Measure	Habitat Management Zone	Habitat Restoration Zone (Enhancement)	Corridor Enhancement Zone	
Erosion Control	Not required	Required	Required	
Thinning (Pine and Native Shrub)	Required	Required	Required	
Natural Regeneration	Required	Required	Required	
Active Revegetation	Not required	Required	Required	

4.5 Final Void and Mine Closure Plan

Under Schedule 3, Condition 72 of SSD 09_0182, BCOP is required to prepare a Final Void and Mine Closure Plan by December 2025 which will be included as part of this Rehabilitation Strategy document.

The Final Void and Mine Closure Plan is discussed in detail in **Section 5.0**.

4.6 Opportunities and Improvement to Post Mining Land Uses

In accordance with Schedule 3, Condition 71 (g) of the SSD 09_0182, BCOP will investigate opportunities to refine and improve the final landform over time, including the configuration of the OEAs.

Annual rehabilitation reporting and activities required for the next three years will be reviewed and identified as part of the Annual Rehabilitation Report and Forward Work Plan which are to be prepared in accordance with the requirements of the *Mining Act 1992*. These annual reporting requirements will be used to identify matters where rehabilitation monitoring has indicated the need for additional works or improvements to mine rehabilitation activities are required.

The detailed technical assessments outlined in **Section 5.0** will be utilised to configure the OEAs, to ensure efficient mining operations to ensure that they are progressing towards the achievement of the Rehabilitation Objectives and Completion Criteria. The Final Void and Mine Closure Plan will assist in identifying an approach to ensure continuous improvement of the final landform design including final landform drainage outcomes.

4.7 Integrated Mine Planning

4.7.1 Tarrawonga Coal Mine Rehabilitation Integration

Tarrawonga Coal Mine holds approval PA 11_0047 to continue its mining operations immediately adjacent to the south of BCM's mine lease area. Tarrawonga Coal Mine modification (MOD 7) to PA 11_0047 in February 2021 provided approval for the development of a final landform design which generally integrates its post mining landform with the BCM Conceptual Final Landform, namely:

- Continued development of mining operations in the Maules Creek Formation, including to the north into the southern parts of BCM (now within ML 1685 and ML 1749) which adjoin Tarrawonga's ML 1579;
- Use of upgraded BCM MIA facilities for the handling and processing of up to 3 Mtpa ROM coal from Tarrawonga, and the loading of product coal to trains for transport on the BCM private rail spur to the port of Newcastle. Note: no commercial agreement has been reached and these activities are no longer proposed; and



• Expanded emplacement of waste rock in the Northern Emplacement as mining develops, ultimately integrating with the southern extent of the BCM OEA.

4.7.1.1 Common Boundary Integrated Management Plan

Integration of the Tarrawonga Northern Emplacement and the previously rehabilitated southern extent of the BCM OEA presents an opportunity to enhance connectivity between the post mining landforms of both mines. Detailed planning to optimise integration of the final rehabilitated landform has been undertaken and documented in the Common Boundary Integrated Management Plan (CBIMP).

The CBIMP was prepared in consultation with Resources Regulator and was formally endorsed/signed-off by BCPL (now BCOP) and TCPL in August 2015. It includes a definition of working areas and responsibilities, details of scheduling of emplacement area development, progressive rehabilitation activities, a nominal point of emplacement area integration and the conceptual integrated final landform. It also includes details on the integrated water management strategies for both the development and rehabilitation phases of the emplacement area integration and responsibilities for water management (including on-going maintenance). The CBIMP also outlines a process for the management of topsoil resources for placement on the final shaped emplacement area and identifies criteria and methodologies, to establish native woodland/forest communities that integrate across the mine lease boundary and with Leard State Forest.

The CBIMP is functionally implemented on site when BCOP hold monthly meetings with Tarrawonga and Maules Creek mine representatives (BTM Meeting) to discuss all issues and responsibilities that arise at an operational level. This is where cumulative risks and impacts are considered, actions raised, and minuted. Responsibility for on-going maintenance is defined by the lease boundaries, and it is conducted as required. Further to the above IA and WHC representatives meet formally on a monthly basis at a senior level. Work continues to finalise the common boundary integrated landform and a draft design is currently being reviewed by both organisations.

See **Section 4.3** which describes the BTM Water Management Strategy and the collective responsibilities of the BTM Complex.

4.7.1.2 Overburden Emplacement Integration – Timing

Relevant lease transfers for the southern portion of BCOPs CL 368 to enable Tarrawonga to undertake open cut pit and overburden emplacement area development in their northern extension area was completed in 2017. As at the end of 2020, BCOP completed the rehabilitation of the relevant sections of its landform design to integrate with the proposed landform at Tarrawonga. Tarrawonga is currently progressing mining operations along the common boundary. In accordance with the CBIMP, Tarrawonga will develop its final landform and associated drainage infrastructure. This will integrate with the landform which has previously been completed by BCM. BCOP regularly meet with Tarrawonga to discuss the required actions by both parties under the CBIMP.

4.7.1.3 Overburden Emplacement Integration – Rehabilitation

The lease boundary defines the area of prime responsibility between BCOP and TCPL. The CBIMP defines the rehabilitation goals for that area. The rehabilitation standard currently in place within the Leard State Forest area, as demonstrated by BCOP, has been adopted for the lease transfer area to ensure the landform and rehabilitation of both operations is consistently applied and an integrated landform is achieved. Further information regarding rehabilitation of the overburden integration area is provided in the CBIMP.



4.7.1.4 Vegetation Corridor

In accordance with Schedule 2, Condition 7 of SSD 09_0182, BCOP will maintain a 250 m wide barrier between the lease boundary for the BCM and the Maules Creek Coal Project to retain the vegetated buffer between the two mines. No mining related disturbance is permitted within this area.



5.0 FINAL VOID AND MINE CLOSURE PLAN

In accordance with Schedule 3, Condition 72 of the SSD 09_0182, a Final Void and Mine Closure Plan (FVMCP) will be developed and submitted to DPHI before the end of December 2025.

The development of this plan will entail an extensive work program which will consider various aspects in relation to the final landform, including the partially infilled final void area. This is likely to include technical studies in (at least) the following technical fields:

- Geochemistry;
- Geotechnical;
- Groundwater;
- Surface Water; and
- Landform Evolution Modelling.

Preliminary background work on this plan has been commenced with the collection of baseline environmental monitoring and geochemical information. The detailed work program is expected to continue over the next two years. The FVMCP will seek to confirm measures to be implemented to:

- Demonstrate the long-term final landform will not generate a pit lake;
- Emplaced spoil has the capacity to drain to the natural environment;
- Drained water from the final landform will not adversely affect the downstream environment;
- Demonstrate the long-term stability of the proposed final landforms; and
- Final void characterisation, including;
 - Groundwater recovery;
 - Void groundwater characteristics;
 - Hydrochemistry;
 - Hydrogeology; and
 - Hydrology.

The current proposed location of the final void will be located within the northern section of the BCM. BCOP has previously committed to partially infilling the final void area with overburden to RL 285 m, which was defined within the Boggabri EA (2010) as a level greater than the pre-mining groundwater levels within this area. The assessments undertaken as part of the Boggabri EA (2010) identified the final void would become a groundwater source rather than as a long-term groundwater sink. Further, as a result of the void becoming a groundwater source, it was considered that the seepage of groundwater from the final landform would not adversely affect downstream water quality. The work that is being undertaken as part of the FVMCP would seek to confirm that this assessment finding.

BCOP will also develop the high wall of the final void to ensure it is safe, stable, non-erosive and revegetated as is practical with the demonstration of long-term stability.

A final high wall landform will be developed following an assessment by geotechnical and erosion specialists to determine appropriate geotechnical and erosion parameters. This will be incorporated into the FVMCP to be prepared for submission to DPHI prior to the end of December 2025.

The work undertaken as part of the FVMCP will also seek to identify the water takes the final landform will continue to take from the various water sources to ensure that adequate water access licences are secured and held post mining in accordance with the requirements under the WM Act.

The Conceptual Final Landform design for MOD 8 was designed with the same objectives established for the BCM during the approvals process for SSD 09_0182. The partially infilled final void within the Conceptual Final



Landform design aims to minimise the long term takes of groundwater from Permian aquifers. The size of this partially infilled final void has also been minimised as far as reasonably practicable and surface water catchments have been diverted away from this area where this is feasibly possible. The purpose of the rehabilitation objectives relating to the final void is to ensure that impacts to water resources as a result of the final landform are minimised as far as reasonable and feasible.

BCOP will prepare the FVMCP in consultation with regulatory agencies including the Resources Regulator, Forestry Corporation of NSW, Biodiversity Conservation and Science, NSW Department of Climate Change, Energy the Environment and Water – Water (NSW DCCEEW – Water), North West Local Land Services, Narrabri Shire Council and the CCC.

5.1 Care and Maintenance

For unforeseen circumstances where BCOP must enter care and maintenance, a care and maintenance program will be implemented to ensure existing rehabilitation areas are appropriately maintained and are trending towards being sustainable into the longer term. The scope of a care and maintenance program will generally include:

- Weed and feral animal control on rehabilitation and mine disturbance areas;
- Erosion and drainage control works and maintenance works (i.e. dam desilting, repair of sediment structures, etc) across the rehabilitation and mine disturbance areas;
- Re-seeding/planting of rehabilitation areas that may have failed or require the establishment of later phase successional species;
- Maintenance watering and fertilising of rehabilitation areas as required; and
- General land management activities.

It is envisaged that this care and maintenance program will be continued (as required) until the decision has been made to place the mine into closure. At this time, the final landform design and closure criteria for the site will be determined in consultation with DPHI and the Resources Regulator to complete the necessary mine closure activities to achieve closure of the mine.

Where areas of the final landform have been identified to achieve the desired rehabilitation completion criteria to being signed off for the biodiversity conservation end land use, it will be the intention to manage these areas in accordance with their intended use as soon as practical after rehabilitation has become established.

In the event the premature closure of the mine is required, assessments will be undertaken in consultation with the relevant regulatory authorities to agree upon the final landform design. This may be identified to require modifications to SSD 09_0182 to ensure that the requirements of the EP&A Act are able to be addressed.



6.0 REHABILITATION MONITORING

BCOP will continue to undertake rehabilitation monitoring in accordance with that described within **Section 8** of the RMP. Rehabilitation monitoring results will be reported in the Annual Reviews and Annual Rehabilitation Reports, with any necessary remediation or repairs reported within the upcoming years Forward Work Program.

BCOP prepares and submits an Annual Review which outlines the environmental performance of the Project over the preceding calendar year. The Annual Review must be submitted within 90 days of the end of the reporting period in accordance with Schedule 5, Condition 4 of SSD 09_0182. BCOP undertakes annual rehabilitation monitoring that incorporate:

- Results of ongoing monitoring;
- A quantitative and qualitative assessment of the rehabilitation progress;
- Identification of and reporting on the progress of non-conformance issues and corrective action requests identified during periodic audits or from community complaints;
- The performance of rehabilitation;
- The implementation and effectiveness of the rehabilitation controls and conditions specifically relating to the development;
- Key trends in monitoring results and progression towards achievement of rehabilitation objectives and completion criteria
- Reporting on discrepancies between the predicted and actual results;
- Reporting of where the TARP, detailed in the ENV-RHB-PLN-001 Rehabilitation Management Plan (Section 10), has been implemented to counter poor/unpredicted rehabilitation results or environmental impacts;
- Results of the rehabilitation trials; and
- Details of any incidents and non-compliances.

The RMP further details how rehabilitation monitoring is incorporated into measuring the performance against the rehabilitation objectives and rehabilitation completion criteria.

Annual Reviews will be made publicly available on the BCOP website:

www.idemitsu.com.au/boggabri



7.0 STAKEHOLDER ENGAGEMENT PLAN

Under Schedule 3, Condition 71 (h) of SSD 09_0182, the rehabilitation strategy must include a stakeholder engagement plan to guide rehabilitation and mine closure planning processes and outcomes.

BCOP recognises the importance of community engagement in mine rehabilitation and is dedicated to transparently involving the community in both mine rehabilitation and closure planning processes. By conducting regular consultations, BCOP endeavours to address concerns, adhere to regulatory standards, integrate practical approaches, and foster collaborative outcomes that contribute to the effective rehabilitation of the Project.

BCOP has established and operates a CCC in the general accordance with the *Guidelines for Establishing* and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007).

The Rehabilitation Objectives, Completion Criteria and indicators were initially developed for inclusion within the latest version of the BCM Mining Operations Plan Amendment A (dated March 2020 (MOP)) which was approved by the Resources Regulator. This previous MOP was also prepared to address the requirements of the former Condition 71 of SSD 09_0182 (i.e. Rehabilitation Management Plan) which was recently amended with the approval of MOD 9 to SSD 09_0182 to require the preparation of this Rehabilitation Strategy. The previous MOP (or RMP) was prepared in consultation with DPHI, Forestry Corporation of NSW, DPHI - Water, DPHI - BCS, North West Local Land Services, Narrabri Council and the CCC.

Throughout the stakeholder engagement process, a set of expectations and agreements related to post-mining land use, rehabilitation objectives, and completion criteria were established. These elements have been incorporated into the development of the RMP and are integral components of this Rehabilitation Strategy. **Table 7-1** details the stakeholder engagement expectation responses regarding rehabilitation and closure of the mine.

In accordance with Schedule 3, Condition 71 of SSD 09_0182, this Rehabilitation Strategy will also be distributed to DPHI, Resources Regulator, FCNSW, BCS, DPHI - Water, North West Local Land Services, Council and the CCC for their review and input, see **Appendix C**. Comments from these stakeholders will be considered and the revised Rehabilitation Strategy will be submitted to DPHI for approval.

Table 7-1: Stakeholder Engagement Expectations

Stakeholder / Source	Concern	Comment
PAC Submissions (various) (2011)	The extent of the final void should be minimised as much as possible to reduce the long-term impacts on the landscape.	The nature and extent of the final void is addressed in the RMP
	The proponent should work with adjoining mines to minimise final landscape/ biodiversity impacts and enhance biodiversity and environmental management outcomes.	BCOP and Whitehaven Coal have developed regional strategies for environmental management, required as part of the SSD 09_0182. These include strategies for the sharing of environmental monitoring networks.
		An agreement is in place between BCM and Tarrawonga Coal Mine to ensure that an integrated final landform is established in accordance with relevant conditions of the SSD approvals for both mines.
	The ability to rehabilitate the forest to its pre-mining conditions is doubtful; Concern	The RMP outlines the approach that will be taken to rehabilitation, including topsoil



Stakeholder / Source	Concern	Comment
	that soil depths suggested are insufficient for establishment of rehabilitation.	management and placement. Topsoil depths have been researched as part of this and are considered adequate for sustaining proposed vegetation communities.
References to the former DPE comments on the RMP (received 2013)	The final mix and areas of natural vegetation communities will need to be in accordance with the approved Biodiversity Management Plan.	The final mix and areas of vegetation have been established based upon conditions of the SSD 09_0182, commitments in the EA and other requirements. This is addressed and documented in the BMP and the RMP.
	Investigations into proposed final landforms should be considered to start earlier to allow for alternative landform designs to be considered.	BCOP will consider accelerating studies into alternative final landform designs.
	Land zoning post closure will need to be considered and addressed.	A strategy for final land uses is included in the RMP. A rezoning application may be required to achieve final land uses.
	Need to ensure consistency between the RMP, the MOP and mine closure planning.	Mining Amendment (Standard Conditions of Mining Leases – Rehabilitation) Regulation 2021 introduces new standard mining lease conditions for mine rehabilitation including the requirement for a Rehabilitation Management Plan to replace the MOP, former RMP and mine closure planning.
	Final landforms should provide information on land capability and agricultural suitability.	Land capability and agricultural suitability is addressed in the RMP.
	Need to consider Commonwealth approval conditions in preparation of management plans.	The Commonwealth approval has been considered in the preparation of management plans. In particular, extensive changes have been made to the Biodiversity Management Plan, Site Water Balance, Surface Water Management Plan, Water Management Plan and Groundwater Management Plan in response to the Commonwealth approval.



Stakeholder / Source	Concern	Comment
Former DPE comments on the RMP (received February 2015)	Update references to approval conditions following granting of MOD 5. Update Soil Management Protocol (SMP) with domains consistent with target vegetation communities in RMP.	The previous version of the RMP and MOP, which has now been incorporated into this RMP was updated to address DPE review comments and issued to relevant agencies for consultation. Subsequent feedback from agencies has been addressed in the RMP.
North West Local Land Services, Council		Did not respond to request for comment.
ccc		

It should be noted that this version of the Rehabilitation Strategy, has relied upon post mining land use, rehabilitation objectives and completion criteria previously proposed within the MOP/RMP documents and will be subject to ongoing consultation throughout the life of the BCM.

BCOP has considered the comments received, and revised Rehabilitation Outcomes Documents will be submitted to the Resources Regulator for Approval.

Specific consultation undertaken by BCOP for the preparation of historical Mining Operations Plans is detailed in the RMP and included in **Appendix E**.

7.1 Community Consultation

BCOP has undertaken extensive community consultation as part of the development and operation of the BCM. This has included the establishment of the BCM CCC. BCOP also maintains ongoing communication with residents immediately neighbouring the BCM through direct correspondence. Where possible, BCOP has utilised local residents and contractors throughout the development and operation of the BCM.

BCOP also maintains a community enquiry and complaints hotline 1800 BOGGABRI (1800 2644 2274).

7.2 Aboriginal Consultation

Consultation with Aboriginal stakeholders has been undertaken on an ongoing basis as part of previous approvals processes and development of the site's Cultural Heritage Management Plan (CHMP). A representative of the Aboriginal stakeholder group is also part of BCOP's CCC.

To facilitate ongoing Aboriginal stakeholder consultation, an Aboriginal Stakeholder Consultative Forum (ASCF) has been initiated. The ASCF is open to all stakeholders involved in the various BCOP projects. The ASCF provides a platform for information exchange between BCOP, stakeholders and is a method of efficiently disseminating information to the Aboriginal community.

Key concerns from the ASCF have been mostly related to preservation of cultural heritage, access to land and employment opportunities.



7.3 Agency Consultation

BCOP has undertaken ongoing consultation with the agencies including:

- DPHI (formerly DPE);
- Department of Regional NSW Resources Regulator (Resources Regulator) & Mining Exploration and Geoscience (MEG) (formerly Dol);
- DPHI Biodiversity Conservation and Science Division (BCS) (formerly OEH);
- NSW DCCEEW Water (formerly DPE Water);
- Forestry Corporation of NSW;
- Narrabri Shire Council;
- Gunnedah Shire Council;
- North West LLS (formerly Namoi CMA);
- · Roads and Maritime Services; and
- Water NSW (formerly SWC).



8.0 REPORTING

8.1 Mining Lease Reporting Requirements

BCOP (on behalf of IA and its joint venture partners) is required to prepare:

- An Annual Rehabilitation Report which describes the progress of rehabilitation over the annual reporting period; and
- A Forward Program which includes the schedule of mining and rehabilitation activities for the next three years demonstrating how rehabilitation will occur as soon as reasonably practicable after disturbance.

BCOP has obtained approval from the Resources Regulator to align its reporting period and submission date to the same dates as the Annual Review (as discussed in **Section 8.2**). That is, the reporting period being from 1 January to 31 December and the reporting submission date being due on 31 March the following year.

The Annual Rehabilitation Report reports on the activities undertaken during the reporting period against the activities forecast within the Forward Program. It documents several aspects associated with mine rehabilitation and where has varied from the activities previously forecast within the Forward Program.

The Forward Program is required to be lodged annual and enables a forecast of rehabilitation activities to be identified for the upcoming three-year period. This includes a forecast of rehabilitation and disturbance, rehabilitation maintenance and monitoring, trials and research as well as an indication of progress towards specific key performance indicators. Should the activities within the upcoming three-year period for the Forward Program extend beyond the relevant Rehabilitation Cost Estimate period, then a revised Rehabilitation Cost Estimate is required to be lodged to the Resources Regulator for approval.

8.2 Annual Review

BCOPL prepares and submits an Annual Review, in accordance with Schedule 5, Condition 4 of SSD 09_0182, which outlines the monitoring, analysis and performance assessment for rehabilitation activities over the preceding calendar year.

The Annual Review is typically submitted to stakeholders by the end of March each year and will discuss the rehabilitation related activities, monitoring results and management measures of the previous calendar year.

The Annual Review will be submitted to the DPHI and be made publicly available on the BCM website.

8.3 Incident and Complaint Management

BCOPL will manage and report environment incidents, complaints, non-conformances with relevant statutory requirements and exceedances with performance criteria as outlined in the BCOPL Incident Management Standard, the site Incident Management Plan and the Pollution Incident Response Management Plan. All environment incidents will be managed in accordance with this process in these documents.

All environment incidents will be managed in accordance with BCOPL's Incident Management Procedure. Reporting of environment incidents by the contractor(s) to the BCOPL Environment Superintendent shall be undertaken as soon as practically possible, but not later than 24 hours following the incident. In accordance with the MP 09_0182, the EPL and Mining Lease conditions, BCOPL is required to provide verbal and written notification to the appropriate regulatory authorities of any incident that has caused, or threatens to cause, material harm to the environment. Relevant contractors will also be notified immediately of any non-compliant activities that present a risk of causing material environmental harm in the area that they are working.

Following an incident, corrective actions will be identified and agreed on with relevant personnel (and regulators if required) prior to implementation. Corrective actions may include a review of any relevant plans



and procedures following identification of a non-conformance. Where the non-conformance issue is associated with an inspection, audit or monitoring event, the actions will be linked to the record of the event. Incident reports will be reviewed on a regular basis to ensure actions are progressed appropriately.



9.0 ACCOUNTABILITIES AND RESPONSIBILITIES

9.1 Resources and Responsibilities

Key management personnel and their relevant roles and responsibilities with regard to implementation of this Rehabilitation Strategy are detailed below in **Table 9-1**.

Table 9-1: Roles and Responsibilities for Implementation of the Rehabilitation Strategy

Role	Responsibility
BCOP General Manager	Ensure that sufficient resources are allocated for the implementation of this Rehabilitation Strategy
BCOP Technical Services Manager	Ensure mining and rehabilitation activities are undertaken and completed in accordance with this Rehabilitation Strategy
BCOP Environment Superintendents	 Ensure sufficient time and resources are available to allow for the implementation of the Rehabilitation Strategy;
	 Allocate sufficient resources and time for the implementation of the rehabilitation monitoring program;
	 Ensure all reporting requirements are adhered to, including relevant records; and
	Conduct necessary revisions of the Rehabilitation Strategy where applicable
BCOP Environment & Community Manager	 Liaising with regulatory authorities regarding BCOP's mining and rehabilitation management obligations;
	Ensuring all employees and contractors are aware of their environment management obligations in accordance with Rehabilitation Strategy
Mine Personnel	Undertake activities directly in accordance with the requirements of the Rehabilitation Strategy

9.1.1 Rehabilitation Strategy Revision

Review of this Rehabilitation Strategy may be triggered by any of the following:

- Changes to the construction methodologies, mining operations, equipment or design;
- A hazard, near miss or incident report;
- An annual review;
- · Outcomes of an internal or external audit;
- Changes to legislation or guidelines;
- Modifications to the SSD 09_0182, mining leases, EPL or other relevant approvals; or
- A periodic review every three years.
- Full details of the document history are to be recorded and detailed in the document register, by version.
- A summary of the document changes is detailed in **Table 9-2**.



9.1.2 Publication

BCOP will upload the latest version of this Rehabilitation Strategy and the Rehabilitation Management Plan to the BCM Website.

Please visit https://www.idemitsu.com.au/mining/operations/boggabri-coal/ to see the current environmental management plans associated with BCM.

Table 9-2: Document and Data Control Amendments

Controlled electronic copies of all original and revised versions are retained as per BMS-SMS-STD-003 Document and Data Control

Version	Amendments, Reviews and/or Comments	Author	Reviewed By	Approved By	Approval Date
5.0	Initial issue	DH/NC JBE	ТМ	LT	21/03/24
5.1	Consultation integrated into the strategy	JBE	TM	LT	11/06/24
5.2	Final approved in consultation and including comments from Department of Planning and Environment	JBE now Xenith	LT	SD	23/10/24

The description of each change must be specific enough to make clear where the revision is located and what the revision means. Identification of a page changed is not sufficient. Descriptions of multiple changes within the same revision must be tabulated separately.



10.0 ABBREVIATIONS

Abbreviation	Definition
ARI	Average Recurrence Interval
ASCF	Aboriginal Stakeholder Consultation Forum
всм	Boggabri Coal Mine
ВСОР	Boggabri Coal Operations Pty Ltd
BCSD	Department of Planning and Environment – Biodiversity Conservation and Science Division
ВСТ	Boggabri Coal Terminal
ВМР	Biodiversity Management Plan
ВОА	Biodiversity Offset Areas
втм	Boggabri, Tarrawonga, Maules Creek
СВІМР	Common Boundary Integration Management Plan
ccc	Community Consultative Committee
CEC	Cation Exchange Capacity
CFMP	Clearing and Fauna Management Protocol
СНМР	Cultural Heritage Management Plan
СНРР	Coal Handling and Preparation Plant, including By-pass crusher
CL	Coal Lease
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DA	Development Application
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
DECC	Former Department of Environment and Climate Change
DECCW	Former Department of Environment, Climate Change and Water
DPI	NSW Department of Primary Industries
DPE	Former Department of Planning and Environment (now Department of Planning Housing and Infrastructure (DPHI))
DPHI	Department of Planning Housing and Infrastructure
DRE	Former NSW Department of Trade and Investment - Division of Resources and Energy



Abbreviation	Definition
DRG	Former Department of Planning and Environment – Division of Resources and Geoscience
DTIRIS	Former NSW Department of Trade and Investments, Regional Infrastructure and Services
EA	Environmental Assessment
EC	Electrical Conductivity
EMPs	Environment Management Plans
EP&A Act	Environmental Planning and Assessment Act, 1979
EPBC Act	Environment Protection and Biodiversity Conservation Act, 1999
EPL	Environment Protection Licence
FCNSW	Forestry Corporation of NSW
GMP	Groundwater Management Plan
GSC	Gunnedah Shire Council
IA	Idemitsu Australia Pty Ltd
Km	Kilometre
MCA	Minerals Council of Australia
MEG	Department of Regional NSW – Mining, Exploration and Geoscience
MIA	Mine Infrastructure Area
ML	Mining Lease
Mt	Million Tonnes
Mtpa	Million Tonnes Per Annum
NOW	Former NSW Office of Water
NSC	Narrabri Shire Council
NSW	New South Wales
NWLLS	North West Local Land Council
OEA	Overburden Emplacement Area
ОЕН	Former NSW Office of Environment and Heritage
PAC	Former NSW Planning and Assessment Commission
PAF	Potentially Acid Forming



Abbreviation	Definition
POEO Act	Protection of the Environment (Operations) Act, 1997
Resources Regulator	Department of Regional NSW – Resources Regulator
RMP	Rehabilitation Management Plan
RL	Relative Level
RMS	NSW Roads and Maritime Services
ROM	Run of Mine
SCMP	Spontaneous Combustion Management Plan
SD	Sediment Dam
SWB	Site Water Balance
SMP	Soil Management Protocol
swc	State Water Corporation
SWMP	Surface Water Management Plan
t	Tonne
TARP	Trigger Action Response Plan
TCPL	Tarrawonga Coal Pty Limited
TSS	Total Suspended Solids
WMP	Water Management Plan
WMS	Water Management Strategy



Appendix AAuthor Endorsement

Department of Planning and Environment



Ms Alex Williams Environmental Compliance Superintendent Boggabri Coal Operations Pty Limited

Subject: Preparation of the Boggabri Coal rehabilitation strategy

Dear Ms Williams

23/11/2023

I acknowledge your advice dated 10 November 2023 that you propose to use Mr Nathan Cooper of James Bailey and Associates and Mr Daniel Hamilton of Xenith Consulting as suitably qualfied and experienced persons to prepare the Rehabilitation Strategy for the Boggabri Coal Mine.

If you wish to discuss the matter further, please contact Rose-Anne Hawkeswood on 9274 6324.

Yours sincerely

Stephen O'Donoghue

Director

Resource Assessments



Appendix BSSD and EPBC Approval Conditions



Table B-1: SSD 09_0182 Rehabilitation Requirements

Applicable condition	Requirement	Document Reference
SSD 09_0182		
Schedule 3	The Proponent shall:	SMP
Condition 36	a. Develop a detailed soil management protocol that identifies procedures for	
	 Comprehensive soil surveys prior to soil stripping; 	
	 Assessment of top-soil and sub-soil suitability for mine rehabilitation; and 	
	 Annual soil balances to manage soil handling including direct respreading and stockpiling; 	
	b. Maximise the salvage of suitable top-soils and sub-soils and biodiversity habitat components such a bush rocks, tree hollows and fallen timber for rehabilitation of disturbed areas within the site and for enhancement of biodiversity offset areas;	RMP
	c. Ensure that coal reject or any potentially acid forming Interburden materials must not be emplaced at elevations within the Boggabri pit shell where they may promote acid or sulphate species generation and migration beyond the pit shell;	
	d. Ensure that any coal barrier between the final void and any future surrounding mining operations must remain intact in order to impede exchange of any contaminated groundwaters in the Boggabri pit shell.	
Schedule 3 Condition 44	For the White Box - Yellow Box - Blakeley's Red Gum Grassy Woodland Endangered Ecological Community the Proponent shall:	RMP
Condition 44	a. Ensure that the Biodiversity Offset Strategy and Rehabilitation Strategy are focused on protection, rehabilitation, re-establishment and long-term maintenance of viable stands of this community	
	b. Investigate in consultation with BCS and the North West LLS, all factors likely to enhance or impede the effective long-term restoration of degraded remnants of this EEC in offset areas or regeneration of this EEC on disturbed areas (both offset areas and the site)	ВМР
	c. Within 24 months of the date of this approval (and if possible in conjunction with Stage 2 of the Leard Forest Mining Precinct regional Biodiversity Strategy), submit a report of this investigation and provide an implementation plan to maximise the prospects for rehabilitation and regeneration of this EEC on the offset areas and the site, for approval by the Secretary, and	
	d. Incorporate the approved implementation plan into the revised Biodiversity Management Plan, required under condition 50.	



Applicable condition	Requirement	Document Reference
Schedule 3 Condition 45	For all threatened species on site, the proponent shall ensure that the Biodiversity Offset Strategy and Rehabilitation Strategy are focussed on protection, rehabilitation and long-term maintenance of viable stands of suitable habitat for these species.	RMP
Schedule 3 Condition 46	 The Proponent shall: a. Investigate, in consultation with BCS and the North West LLS, all factors likely to enhance or impede the effective long-term provision of suitable habitat(s) for the following species: Brown Treecreeper, Hooded Robin, Black-chinned Honeyeater, Painted Honeyeater, Pied Honeyeater, Grey-crowned Babbler, Speckled Warbler, Diamond Firetail, Varied Sittella, Regent Honeyeater, Eastern False Pipistrelle, Greater Long-eared Bat, Yellow-bellied Sheath Tail Bat 	RMP
	b. Within 24 months of the date of this approval (and if possible, in conjunction with Stage 2 of the Leard Forest Mining Precinct Regional Biodiversity Strategy), submit a report of this investigation and provide an implementation plan to ensure delivery of suitable areas of viable habitat for the species included in (a) above, for approval by the Secretary, and	ВМР
	c. Incorporate the approved implementation plan into the revised Biodiversity Management Plan, required under condition 50.	
Schedule 3 Condition 69	The Proponent must rehabilitate the site in accordance with the conditions imposed on the mining lease(s) associated with the development under the Mining Act 1992. This rehabilitation must be generally consistent with the proposed Rehabilitation Strategy described in the EA (and depicted conceptually in Appendix 9) and comply with the objectives in Table 16.	RMP
Schedule 3 Condition 70	The Proponent shall rehabilitate the site progressively, that is, as soon is reasonably practical following disturbance. All reasonable and feasible measures must be taken to minimise the total area exposed for dust generation at any time. Interim rehabilitation strategies shall be employed when areas prone to dust generation cannot yet be permanently rehabilitated.	RMP
Schedule 3 Condition 71	The Applicant must prepare a Rehabilitation Strategy for all land disturbed by the development to the satisfaction of the Secretary. This plan must: a. Be prepared by a suitably qualified and experienced person/s;	This document
		Appendix A
	b. Be prepared in consultation with the Resources Regulator, FCNSW, BCS, DPE Water, North West Local Land Services, Council and the CCC;	Section 1.5
	c. Be submitted to the Secretary for approval within one year of the date of the approval of MOD 9, unless otherwise agreed by the Secretary;	Approval Date : Table 2-2
		Strategy Lodged



Applicable condition	Requirement	Document Reference
		11/6/2024
	d. Build upon the Rehabilitation Objectives in Table 16, describe the overall rehabilitation outcomes for the site, and address all aspects of rehabilitation including mine closure, final landform, final void outcomes, post-mining land use/s and water management;	Section 3.0
	e. Align with strategic rehabilitation and mine closure objectives and address the principles of the Strategic Framework for Mine Closure (ANZMEC and MCA, 2000);	Section 2.3
	f. Describe how rehabilitation will be integrated with the mine planning process, including a plan to address premature or temporary mine closure;	Section 4.0 and Section 5.1
	g. Describe how the rehabilitation measures would be integrated with the measures in the Biodiversity Management Plan required under condition 49;	Section 4.4
	h. Investigate opportunities to refine and improve the final landform over time, including the configuration of the waste rock emplacement areas;	Section 4.6
	Include a stakeholder engagement plan to guide rehabilitation and mine closure planning processes and outcomes;	Section 7.0
	j. Detail on how rehabilitation will be integrated with the adjoining Tarrawonga Coal; and	Section 4.7.1
	k. Include a program to periodically review and update this strategy at least every three years.	Section 9.1.1
Schedule 3 Condition 71A	The applicant must implement the Rehabilitation Strategy approved by the Planning Secretary.	This document.
	Note: The applicant must prepare and implement a Rehabilitation Management Plan in accordance with the conditions imposed on the mining lease(s) associated with the development under the Mining Act 1992.	Section 4 describes the implementati on of the strategy.
Schedule 3 Condition 72	The Proponent shall prepare and implement an updated Final Void and Mine Closure Plan as part of the Rehabilitation Strategy required under Schedule 3 Condition 71. This plan must:	Section 5.0
	 Be submitted to the Resources Regulator and the Department by the end of December 2025; 	
	b. Address future stability of the proposed landforms, long term groundwater recovery and void groundwater quality characteristics;	Section 5.0
	c. Include a detailed assessment of the hydrochemistry, hydrogeology and hydrology components of the final void and landform design that has been subject to independent review and verification by suitably qualified, experienced and independent person/s whose appointment has been approved by the Secretary.	Section 5.0



Applicable condition	Requirement	Document Reference
	d. Demonstrate that: — The long term landform will not generate a pit lake; — Emplaced spoil has the capacity to drain to the natural environment; — Drained waters do not adversely affect the downstream environment; and e. Identify opportunities for integrated mine planning with adjoining mines to minimise environmental impacts of the final landform.	Section 5.0
Schedule 5 Condition 8 Incident Reporting	The Proponent shall notify, at the earliest opportunity, the Secretary and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the project, the Proponent shall notify the Secretary and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	Section 8
Schedule 5 Condition 12 Access to Information	f. within 3 months of the date of this approval, make the following information publicly available on its website: - the EA; - all current statutory approvals for the project; - approved strategies, plans and programs required under the conditions of this consent; - a comprehensive summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this consent; - a complaints register, which is to be updated on a monthly basis; - minutes of CCC meetings; - the last five annual reviews; - any independent environmental audit, and the Proponent's response to the recommendations in any audit; - any other matter required by the Secretary; and g. (b) keep this information up to date, to the satisfaction of the Secretary.	Section 8
Schedule 5 Condition 14 Incident Notification	The Applicant must immediately notify the Department and any other relevant agencies after it becomes aware of an incident. The notification must be in writing via the Department's Major Projects Website and identify the development (including the application number and name) and set out the location and nature of the incident.	Section 8



Applicable condition	Requirement	Document Reference
Schedule 5 Condition 15 Non- Compliance Notification	Within seven days of becoming aware of a non-compliance, the Applicant must notify the Department of the non-compliance. The notification must be in writing via the Department's Major Projects Website and identify the development (including the application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the noncompliance (if known) and what actions have been, or will be, undertaken to address the noncompliance.	Section 8

Table B-2: EPBC 2009/5256 Rehabilitation Requirements

Applicable condition	Requirement	Document Reference
Condition 21	To mitigate the impacts to the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and derived Native Grassland and the habitat of the regent honeyeater, swift parrot and greater long-eared bat, the person taking the action must, within 12 months of commencement of the new mining activities, submit to the Minister for approval a Mine site rehabilitation plan for the progressive rehabilitation and revegetation of no less than 650ha (less the portion included in the biodiversity corridor identified in condition 2) in the Boggabri extension mine site using species consistent with a White Box-Yellow Box-Blakely's red Gum Grassy Woodland and Derived Native Grassland Ecological Community. This approved Mine site rehabilitation plan must be implemented.	Section 4.2 and Section 4.4.1
Condition 22	The person taking the action must: a. Rehabilitate the site to be consistent with the proposed rehabilitation strategy as provided in the Environment Assessment and, as required under the NSW state government Project Approval dated 18 July 2012 (application number 09_0182); and	Section 4.2
	 b. Not replace top soil and sub soil layers at a depth less than the minimum depths determined through pre-stripping soil surveys as described in condition 23c. Note: the NSW state government Project Approval dated 18 July 2012 (application number 09_0182) conditions require pre-stripping soil surveys and inventories to inform the availability, rehandling, stockpiling and management of soils, and maximising the salvaging of soil to be used, in the rehabilitation of the site. 	Section 4.2
Condition 23	The Mine site rehabilitation plan must include, at a minimum, the following information: a. Targets and performance indicators to achieve effective restoration of native forest and woodlands.	Section 3.0
	b. Details of the vegetation communities to be rehabilitated and the timing of progressive rehabilitation (commencing as soon as practicable following disturbance).	Section 4.1



Applicable condition	Requirement	Document Reference
	c. Detailed soil depth surveys and analysis to inform the effective placement and restoration of soils underlying the proposed rehabilitation sites; including mapping of soils across the disturbance sites and soil sampling at no less than one sample point per 20ha of each soil types identified. Sampling must identify; type, depth, water holding capacity, structure and physiochemical properties of each of the soil and subsoil layers.	Section 4.2
	 d. Processes and methodologies for the removal, storage and relayering of the top soil and sub soil layers underlying the disturbed sites being prepared for rehabilitation. These processes and methodologies must ensure the replacement of top soil and sub soil layers: i. Meet the minimum depth requirements determined from 	Section 4.2
	sampling outcomes as identified in condition 23c; and ii. Replicates the other existing soil parameters including, but not limited to, soil type, water holding capacity, structure and physio-chemical properties.	
	e. Criteria to determine success of rehabilitation of native vegetation.	Section 3.0 and BMP
	f. A process to progressively report to the department the rehabilitation management actions undertaken and the outcomes of those actions, and the mechanisms to be used to identify the need for improved management.	Section 6.0 and Section □
	g. A description of the potential risks to successful management and rehabilitation on the project site, and a description of the contingency measures that would be implemented to mitigate these risks.	Appendix D
	h. Details of long-term management and protection of the mine site.	Section 6.0 and Section 9.0
	Note: for consistency, the person taking the action may develop a single mine rehabilitation plan to align with the requirements including timing of reports of the NSW state government Project Approval dated 18 July 2012 (application number 09_0182) requirements and this approval. The Offset management plan and the Mine site rehabilitation plan need to be substantially integrated for achieving biodiversity objectives for the rehabilitated mine-site.	
Condition 24	The person taking the action must rehabilitate the site consistent with the proposed Rehabilitation Strategy as required under conditions 69, 70, 71 and 72 of the NSW state government Project Approval dated 18 July 2012 (application 09_0182) such that the final landform provides the optimum opportunity for the successful restoration of native forest and woodland including the critically endangered White Box-Yellow Box-Blakely's Red gum Grassy Woodland and Derived Native Grassland Ecological Community.	Section 3.0, Section 4.0, Section 5.0 and Section 6.0.
Condition 25	The person taking the action must undertake rehabilitation to ensure the final landform minimises the extent of any resulting pit lake, avoids	Section 4.5 and Section 5.0.



Applicable condition	Requirement	Document Reference
	salt scalding and ensures that drained waters do not adversely affect the downstream environment and avoids any impacts on matters of national environmental significance.	
	Note: the NSW state government Project Approval dated 18 July 2012 (application 09_0182) approval conditions require the preparation and implementation of an updated Final Void and Mine Closure Plan that considers interactions with the adjoining mines, including interaction between final voids, opportunities for integrated mine planning with adjoining mines to minimise environmental impacts, all reasonable and feasible landform options for the final void (including filling) and predicted hydrochemistry and hydrogeology (including long-term groundwater recovery and void groundwater quality).	



Appendix CResponse to Regulatory Consultation



Table C1 Regulatory Considerations

Stakeholder/Name	Considerations Response		Section
	agement Plan is recommended to be reviewed to er cy and water management requirements, the Narral		
Department of Climate Change, Energy, the Environment and Water	Sharing of water must protect the water source, its dependent ecosystems and basic landholder rights.	BCOP has added a paragraph to note the use of the legislated water licencing regime to manage its water takes and ensure no water user is not adversely affected. This section explains that BCOP currently hold sufficient water allocations for its water take.	Addressed in Section 4.3
	Water sources, floodplains and dependent ecosystems are protected and restored	This had already been addressed.	Addressed in Section 3.1
	Activities within a water source should avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, and where possible land should be rehabilitated.	This had already been addressed.	Addressed in Section 4.3 and 5 and Appendix D
	The final Rehabilitation Management Plan is made electronically available on a public accessible website.	BCOP has included a link to the BCM website in which all Environmental Management Plans are available.	Addressed in Section 9.1.2
	A conceptual model/diagram clearly presents how the groundwater and surface water system interact with the final landform. This is to be informed by recent environmental assessments/modelling reviews.	BCOP has included a brief section based on the Groundwater Impact Assessment completed as part of Mod 8. This section outlines the predicted post mining interactions between surface water and groundwater as it is currently understood. Further details on this interaction will be considered within the FVMCP.	Addressed in Section 4.3.3.2
	The final design and location of surface drainage features achieves a stable landform	Details of the conceptual Final Landform Design drainage an interaction with Nagero	Addressed in Section 5



Stakeholder/Name	Considerations	Response	Section
	and maintains or improves riparian corridor functioning. This is to be completed with reference to industry guidelines such as "Rehabilitation Manual for Australian Streams (LWRRDC 2000)", "Guideline: Works that interfere with water in a watercourse for a resource activity (DNRME 2019)" and "Guidelines for Controlled Activities on Waterfront Land (DPE 2022)" or their latest versions.	Creek will be constructed in accordance with the Rehabilitation Manual for Australian Streams (LWRRDC 2000)", "Guideline: Works that interfere with water in a watercourse for a resource activity (DNRME 2019)" and "Guidelines for Controlled Activities on Waterfront Land (DPE 2022)" or their latest versions. Further details on this will be considered within the FVMCP.	
	Dirty runoff catchment areas are rehabilitated, and the conveyance of clean surface run off downstream is maximised.	BCM have diversion drains surrounding a portion of the disturbed areas to the east and west. These diversion drains direct runoff from the clean water catchments upstream around the mining operations at BCM. Rehabilitation of mining areas progresses as soon as practicable at BCM. Once rehabilitated areas are assessed as meeting rehabilitation completion criteria it will be signed off with the Resources Regulators. These areas will then flow to the environment maximising the amount of clean surface runoff.	Addressed Section 4.3.3
	Decommissioning of groundwater boreholes is in accordance with the "Minimum Construction Requirements for Water Bores in Australia (2020)".	The specific reference to decommissioning of groundwater boreholes has been removed. The main purpose of this is to reduce the duplication between the Rehabilitation Strategy and the RMP. The rehabilitation objective to decommission bores is outlined in the RMP.	Addressed in Section 4.2
	Ongoing water take by the final landform via interception, storage or diversion is quantified and complies with relevant approvals and licenses under the <i>Water Management Act 2000</i> or a relevant exemption.	BCOP is to prepare a Final Void and Mine Closure Plan (FVMCP) or provision to DPHI by the end of December 2025. A commitment has been included to ensure water takes from the final landform are adequately quantified for	Addressed in Section 5



Stakeholder/Name	Considerations	Response	Section
	Please note exemptions from the requirement to hold approvals under s.go and g1 of the Water Management 2000 for approved SSD/SSI projects will not apply once the project approval ceases. Therefore, any relevant water management works that are to be retained will need to obtain an approval prior to the development consent lapsing.	water access licences to be secured and held for post mining conditions.	
	Aquifer interference activities are designed to minimise ongoing water take and water quality impacts and meet the requirements of the NSW Aquifer Interference Policy.	The Groundwater management Plan addresses the ongoing requirements to meet the requirements of the NSW Aquifer Interference Policy.	Addressed in Section 4.3.2 – reference to GMP Also Addressed in Section 5
	Final voids do not present a risk to important groundwater ecosystems and assets (groundwater dependent ecosystems, alluvial aquifers, and landholder bores).	The Final Landform Design approved as part of MOD 8 will be expanded on in the FVMCP. This will describe how the void has been designed to minimise impacts to water resources as far as reasonable and feasible.	Addressed in Section 5
	Final voids are designed to be sinks or to flow through the local groundwater system and need to be confirmed by a post-mining groundwater model.	This had already been addressed.	Addressed in Section 5
	Residual risk to water sources is clearly understood and minimised. This is to include relevant assessment documentation and updated risk assessments to meet the requirements of the NSW Aquifer Interference Policy. Further detail can be found in Fact Sheet 5 in Appendix C of the "Guidelines for Groundwater Documentation for SSD/SSI Projects. Technical guideline (DPE 2022)".	This had already been addressed.	Addressed in Section 4.3.2 – reference to WMP Also addressed in Section 5.
	A monitoring and review program is included to ensure the rehabilitation outcomes are met.	This had already been addressed.	Addressed in Section 4.3.2 – reference to WMP



Stakeholder/Name	Considerations	Response	Section
Narrabri Shire	The Rehabilitation Management Plan should be reviewed/updated in accordance with the Rehabilitation Strategy and identify rehabilitation domains for the site including specific management and rehabilitation objectives for each domain area, at different stages of the development.	This had already been addressed.	Addressed in Section 4.1
	BCM should continue to undertake rehabilitation progressively in accordance with the Rehabilitation Management Plan with consideration to the detailed measures and schedules for all rehabilitation activities.	This had already been addressed.	Addressed in Section 4.1
	The rehabilitation strategy should be reviewed and revised as required to ensure it remains consistent with any ongoing modifications proposed to SSD 09_0182.	This had already been addressed.	Addressed in Section 9.1.1
	Mitigation measures, in accordance with the Surface Water Management Plan, should be implemented to ensure erosion and sedimentation does not pose a risk to the successful rehabilitation.	This had already been addressed.	Addressed in Section 4.3.1
	Rehabilitation monitoring and maintenance activities should continue to be carried out in accordance with the RMP	This had already been addressed.	Addressed in Section 6
	The final landform should be consistent with the Conceptual Final Landform Design as detailed within the Rehabilitation Strategy	BCOPL intends to create a final landform consistent with the Conceptual Final Landform Design approved as part of MOD 8.	Addressed in Section 3.3 and Figure 3-1
	Boggabri Coal Operations should continue to work closely and in collaboration with surrounding operations, including Whitehaven Coal Limited, to ensure cumulative impacts are proactively managed.	This had already been addressed.	Addressed in Section 4.7



Stakeholder/Name	Considerations	Response	Section	
Resources Regulator	Under the conditions of a mining authorisation granted under the Mining Act 1992, the Resources Regulator requires the holder to adopt a risk-based approach to achieving the required rehabilitation outcomes. The applicability of the controls to achieve effective and sustainable rehabilitation is to be determined based on site-specific risk assessments conducted by the authorisation holder. An authorisation holder may also be directed by the Resources Regulator to implement further risk control measures required to achieve effective rehabilitation outcomes during the life of the mine.	BCOP has conducted a risk assessment as part of the rehabilitation reforms. This risk assessment is reviewed periodically in accordance with the Form and Way guidelines. Once the risks were known appropriate controls were identified. These will continue to be reviewed and updated periodically till mine closure.	Addressed in Section 4.1 and Appendix D	
	There is significant duplication with the Rehabilitation Management Plan as regulated by the Resources Regulator under Schedule 8A of the Mining Regulation. Specifically in Section 4.2 of the Rehabilitation Strategy. This may cause compliance issues for Boggabri Coal where potential changes required to the Rehabilitation Management Plan under schedule 8A (as noted above) may lead to inconsistencies with the Rehabilitation Strategy approved by the Department of Planning, Housing and Infrastructure (DPHI).	Section 4.2 of the Rehabilitation Strategy has been summarised to reduce duplication. BCOP has added a reference to the relevant section of the RMP.	Addressed see Section 4.2	
	Requirement of Schedule 4 Condition 72 of SSD o9_0182 to submit a Final Void and Mine Closure Plan as part of the Rehabilitation Strategy to the Resources Regulator and DPHI by end of December 2025. It is the expectation that well in advance of the development of this document, Boggabri Coal liaises with both agencies to discuss expectations and confirm requirements for the content of the	BCOP is preparing the Final Void and Mine Closure Plan (FVMCP) for provision to DPHI by the end of December 2025 in accordance with the conditions of SSD 09_0182. BCOP has noted in the rehabilitation Strategy the Resources Regulators will be consulted with during the preparation of the FVMCP.	Addressed in Section 5	



Stakeholder/Name	Considerations	Response	Section
	Rehabilitation Strategy under the development consent and the Rehabilitation Management Plan under Schedule 8A of the Mining Regulation.		
	In regard to Appendix B, amendments are required to the title page to reflect that the appendix contains requirements from both the development consent and the EPBC approval. Furthermore, the title of Table B1 needs to be amended to reflect that the table contains the conditions of the EPBC approval rather than the development consent.	BCOP has updated both the table of contents and Appendix B to reference EPBC 2009/5256 and SSD 09_0182.	Addressed in Appendix B and table of contents
	In regard to Appendix C, it is recommended that a reference be provided for where these are published as part of the Rehabilitation Management Plan on the company's website as required by Schedule 8A of the Mining Regulation. This will avoid the need to update the Rehabilitation Strategy where changes occur to the Rehabilitation Objectives and Rehabilitation Completion Criteria statements.	BCOP has included a reference to the relevant section of the RMP.	Addressed in Sections 3.1.1 and 3.1.2
FCNSW	Table 3.1 & Table 4.4 Would like to know more about the purpose of condition 69 Schedule 3. FCNSW will object to the abandonment of surface infrastructure on State Forest if FCNSW were to inherit a liability. Perhaps this is a question to be asked in consultation with the Resources Regulator?	BCOP do not intend to retain or 'abandon' any infrastructure post mining. Section 4.1 of the Rehabilitation Strategy states, 'At the completion of mining, all related infrastructure within the Project Boundary will be decommissioned and removed in accordance with the relevant guidelines.'	Table 3.1 includes BCM rehabilitation objectives from SSD 09_0182. Addressed in Section 4.1
	Section 3.1.2 Please forward Appendix C when drafted for FCNSW consideration (rehabilitation completion criteria).	BCOP has included a reference to the relevant section of the RMP. BCOP will consult with FCNSW in relation to the proposed completion criteria.	Addressed in Sections 3.1.1 and 3.1.2



Stakeholder/Name	Considerations	Response	Section
	 What details can you share about the establishment of long-term water management structures? Are these dams, drainage lines, pipelines/networks etc? Are these works which BCPL propose to relinquish to the landholder? Is there likely to be ongoing maintenance to ensure their effectiveness? If so FCNSW and BCPL will need to discuss the long-term management / liabilities of such infrastructure. 	 BCOP has responded to each of the 4 dot points consecutively below: Section 3.2 has been amended to better reflect the Final Landform Design see Appendix 9 of SSD 09_0182 as modified by MOD 8. The current final landform is proposing to retain two water containment dams for the interim final landuse which will be removed once the landform has been agreed to be stable. There will also be various drainage lines within the final landform to safely convey runoff to the downstream environment. The Figure 3-1 provides indicative drainage lines for runoff and water storages to be retained on the Final Landform Design. A drain is proposed, flowing east to west through the landform. This is to assist BCOP in meeting its rehabilitation objective to have 'Constructed landforms drain to the natural environment.' This objective is noted in Table 16 of SSD og_0182. Prior to the relinquishment of BCM to landholders, BCOP will need to satisfy the Resources Regulators they have met the Rehabilitation Objectives and Completion Criteria. These are outlined in Section 4 of the RMP. Key objectives for rehabilitation at BCM are long-term stable landforms and self-sustaining ecosystems. Accordingly, BCOP will not be allowed to relinquish the site until the Resources Regulator is satisfied these objectives have been met. 	BCOP has addressed each of the 4 dot points consecutively below: Section 3.2; Figure 3-1; Section 4.2.1; and Table 3-1.



Stakeholder/Name	Considerations	Response	Section
BCS	BCS notes that Appendix C: Approved Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria of the RMP does not contain quantitative completion and performance criteria to guide the satisfactory progress of actions, or a Trigger Action Response Plan (TARP) that describes actions that will be conducted in the event that performance criteria are not being met. BCS recommends that the RMP be amended to include targets and triggers that are quantitative, unambiguous and relate to performance or completion criteria.	The approved Rehabilitation Objectives and proposed Rehabilitation Completion Criteria are beyond the scope of the Rehabilitation Strategy. The Rehabilitation Objectives have been accepted by the Resources Regulator and have been included within the RMP. The Rehabilitation Completion Criteria are to be submitted 5 years prior to Mine Closure.	Addressed in Section 3.1
	Successful management plans include tailored, quantitative performance measures and targets, completion criteria, monitoring and trigger points for corrective action which adhere to the SMART principles (specific, measurable, achievable, realistic, timely). Management targets must be measurable and expressed in a manner that assists in the evaluation of progress toward the strategic goals that define the completion criteria.	Rehabilitation Monitoring is completed in accordance with Section 8 the RMP. Results are reported annually in the Annual Review and Annual Rehabilitation Report. Rehabilitation Monitoring is not a requirement to be described within the Rehabilitation Strategy as listed under Condition 71 of Schedule 3 of SSD 09_0182.	Addressed in Section 6.



Appendix DRehabilitation Risks and Controls



Table D-1: SSD 09_0182 Rehabilitation Requirements

Risk/Cause/Consequence	Summary of Control Measures to be Implemented
Rehabilitation Materials and Biological Reso	urces
Lack of Storage Space for Topsoil and other salvaged materials	 LOM planning system identifies requires stockpile locations for inclusion into Forward Program. Soil Management Protocol describes current knowledge of soil material properties to assist in LOM planning. Methods for soil stripping activities are reviewed annually. Register of stripped topsoil/subsoils is maintained by mine planning team (as per SMP).
Stripping and stockpiling methods results in contamination or loss of resources	 Soil Management Protocol describes soil stripping, stockpiling and amelioration application methodology. Soil Management Protocol requires soil testing during stripping to ensure stripping depths consider the depth of the seedbank. Methods and protocols are revised frequently as per the topsoil recovery procedure. Operators are appropriately experienced and trained at conducting stripping activities in accordance with BCOP requirements. Appropriate equipment is utilised for stripping and stockpiling activities. Register of stripped topsoil/subsoils is maintained by mine planning team (as per SMP).
Topsoil weed contamination	 Soil Management Protocol describes measures to control and manage weeds. Pre-clearing inspections identify the requirement for weed control prior to stripping activities being completed. Weeds are scalped from surface of topsoil or from stockpile prior to salvaging for rehabilitation activities.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
	 Topsoil stockpiles are seeded with a prolific low maintenance species that does not contaminate or remove nutrients from the soil, where temporarily stored. Species used similarly needs to be easily neutralised before using topsoil on rehabilitation.
	Weed monitoring, maintenance and control of topsoil stockpiles.
Inadequate or insufficient topsoil/subsoil is available to create/enhance the desired ecological communities.	 Soil Management Protocol incorporates an estimate of salvageable soils within the approved Mine Disturbance Boundary and the required soil resources required for effective rehabilitation of the final landform. These estimates are reviewed and updated on an annual basis, with the review of alternative growth mediums in the event that available resources are insufficient.
	LOM planning considers storage locations for final closure activities.
	Mine Closure and Final Void Management Plan to be prepared.
	Rehabilitation TARP.
Failure to characterise soils (and identify if	Soil Management Protocol requires soil testing to identify qualities of soil materials being stripped.
ameliorants are required).	Appropriate stockpiling of separate soil types.
	Revision of methods and protocols frequently.
	Survey of stockpile locations, volumes and qualities, including whether ameliorants may be required prior to use.
Failure to recover suitable habitat features	Pre-clearing inspection process to identify suitable habitat features to recover and reuse on rehabilitation.
(i.e. hollow bearing trees, bush rock, logs, etc) to support final land use	LOM Planning considers location for temporary storage of habitat features.
Lack of suitable rock and substrate available on site (grading, size and competency) to	 Pre-clearing inspection process requires suitable rock materials to be identified for recovery and reuse on rehabilitation areas;
enable key structures to be built.	Existing external supplier for suitable rock materials for use in drainage structures.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
	LOM planning considers requirement for rock and substrate for water management structures.
	Rock testing undertaken to ensure rock/substrate materials are suitable for use in water management structures.
	Rock and substrate materials balance and stockpile inventory to be developed and maintained.
	Implement tailored rock management practices – rock testing, storage and mixed sizes.
Poor quality seed (i.e. poor germination/success of revegetation).	Rehabilitation Management Plan and Biodiversity Management Plan identifies the requirement to collect seed from the region for propagation.
	Pre-clearing inspections identify potential seed resources for collection prior to clearing.
	Storage of seed collected onsite and surrounding areas.
	Seed purchased from reputable supplier.
	Visual inspection of seed prior to use on rehabilitation.
	Utilise qualified and experienced personnel to collect and store seed.
	Certification from seed supplier.
Insufficient quantity of seed/tubestock available to achieve effective rehabilitation.	 Rehabilitation Management Plan and Biodiversity Management Plan identifies the requirement to collect seed from the region for propagation.
	Pre-clearing inspections identify potential seed resources for collection prior to clearing.
	Suitably qualified personnel employed to appropriately collect seed onsite and surrounds.
	Appropriate storage of seed (utilise external specialists for storage).
	Seed purchased from reputable supplier.
	Notify seed supplier of requirements well in advance to ensure suitable supply.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
	Tubestock purchased from reputable supplier.
	Notify tubestock suppliers of requirements well in advance to ensure suitable supply.
Equipment and skills not available to appropriately salvage rehabilitation materials.	Access to experienced contractors and suitable equipment.
Problematic materials (PAF, carbonaceous materials, sodic materials, etc) are used on	Approved final landform design is incorporated into mine planning to ensure problematic materials are not emplaced near the final surface.
outer slopes of rehabilitation areas.	Mine Planning Standard No. 38 provides detailed procedures for the management and placement of problematic materials.
	Regular land survey to identify locations where problematic materials cannot be dumped.
	Regular testing of soil qualities for final rehabilitation activities and any requirement for amelioration.
	Ground and Strata Management Plan.
	Reject Management Plan identifies appropriate measures to be implemented during disposal of reject materials.
Insufficient knowledge of available biological resources within the disturbance area.	Biodiversity Management Plan and Rehabilitation Management Plan identifies pre-existing biological resources for salvage and use within rehabilitation activities.
	Pre-Clearing Inspections are undertaken by suitably qualified persons to identify available biological resources.
Adequacy of Final Landform	
Inadequate consideration of achieving a	Landform design criteria and landform design process has been identified.
safe, stable and non-polluting final landform.	 Conceptual Final Landform Study (Landloch, 2012) provides indicative erosional/geotechnical assessment with recommendations for implementation.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
	 Refinements to Conceptual Final Landform design are subject to geotechnical/erosional modelling to determine areas of erosion potential and requirement for landform treatments (e.g. rock armouring, blankets, etc).
	Geotechnical and engineering design for drainage drop structures, etc.
	Post construction landform survey to verify landform is constructed to design.
	Post construction erosion and landform stability monitoring.
Inadequate landform design and sustainable	MOP Conceptual Final Landform design.
construction.	Mine plan design software utilised to build Conceptual Final Landform Design
	GPS on key equipment
	As built landform surveys
Not meeting the approved Conceptual Final	Mine Planning utilises Conceptual Final Landform Design.
Landform Design profiles (i.e. max OEA heights, water catchments, surface water	Availability/Surplus of materials to develop Conceptual Final Landform design.
drainage, free draining landform)	Post construction landform survey to verify landform is constructed to design.
Premature closure of mine means that the	Seek modification to SSD Approval to adjust Conceptual Final Landform design.
approved final landform cannot be achieved.	Mine closure planning adjusted to accommodate required changes from premature closure.
Infrastructure not decommissioned and/or contamination not remediated in accordance with the SSD Approval OR Mining Lease requirements	Rehabilitation Management Plan describes the decommissioning process required to achieve closure.
	Development of Final Void and Mine Closure Plan by end 2025 as required by SSD Approval.
	Approval to utilise infrastructure for future uses.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
Saline leachates expressing from the final landform.	 Mine Planning for emplacement of hostile materials to be in accordance with the Reject Management Plan. Water Monitoring Program includes sampling of water from the OEA landforms.
Unplanned ponding and slumping in landforms.	 Independent rehabilitation specialist review of rehabilitation plans. Temporary landform surface water drainage. Final landform surface water management design Landform design developed to be free draining. Post construction survey to verify landform construction is to design.
Large scale landform failure (geotechnical event).	 Landform design criteria and landform design process has been identified. Conceptual Final Landform Study (Landloch, 2012) provides indicative erosional/geotechnical assessment with recommendations for implementation. Refinements to Conceptual Final Landform design are subject to geotechnical/erosional modelling to determine areas of erosion potential and requirement for landform treatments (e.g. rock armouring, blankets, etc). Geotechnical and engineering design for drainage drop structures, etc. Post construction survey to verify landform construction is to design. Post construction erosion and landform stability monitoring.
Groundwater recovery in the partially infilled final void results in void retaining surface water.	 Final landform designed to remain higher than the predicted steady state groundwater level. Development of Final Void and Mine Closure Plan by end 2025 as required by SSD Approval. BTM Complex Groundwater model every 3 years. Surface water modelling for the final void to be undertaken for Mine Closure Plan.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
Landform design has not adequately considered changing climate variations.	 Conceptual Final Landform Study (Landloch, 2012) provides indicative erosional/geotechnical assessment with recommendations for implementation.
	Consideration of landform evolution modelling.
Landform design has not considered the	Existing agreement in place since 2014 for the establishment of Integrated Landform.
integration with Tarrawonga landform.	Regular liaison with Tarrawonga / Whitehaven in relation to the establishment of integrated landform.
Adequacy of Growth Media	
Topsoil depth is unsuitable to sustain final	Soil Management Protocol describes the topsoil depth to be utilised in rehabilitation areas.
land use	Post construction landform survey to verify landform constructed to design.
	Topsoil balance provides the availability of topsoil resources.
	Knowledge of optimal topsoil depth for final land use (i.e. vegetation types).
Sub-soil depth is unsuitable (where it is	Rehabilitation Management Plan describes the optimal sub-soil depths to be adopted.
required) to sustain final land use.	Post construction landform survey to verify landform constructed to design.
	Sub-soil balance provides the availability of topsoil resources.
	Knowledge of optimal sub-soil depth for final land use (i.e. vegetation types).
Inadequate amelioration of growth media resulting in sodicity, surface crusting and long-term erosion.	Soil Management Protocol describes soil testing and amelioration required to growth media.
	Selective handling and storage strategies implemented.
	Timing of growth media application and seed bed preparation.
	Application of ameliorants (as required) during placement of materials onto rehabilitation areas.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
Handling practices damage physical properties / soil structure.	 Soil Management Protocol describes soil stripping and stockpiling requirements to be implemented. Minimise rehandling through adequate mine planning. Proven handling methods and equipment and dedicated training systems for personnel. Stockpile management (reduce compositional changes).
Adverse geochemical properties of media (i.e. salinity, acidity, sodicity, etc).	 Soil Management Protocol describes growth media testing and amelioration required. Identification of adverse materials which are not suitable for use in rehabilitation activities. Implement selective handling and storage strategies.
Biologically depleted growth media.	 Soil Management Protocol describes soil stripping and stockpiling methodologies to implement. Reintroduction of organic materials and/or habitat features to encourage insect colonisation (as required). Minimise rehandle of topsoil materials. Maintain topsoil register to identify opportunities to utilise viable topsoil on rehabilitation.
Inadequate consideration to erosion potential.	 Sediment controls implemented as required. Overburden slope design. Application of growth media in favourable weather conditions. Frequent inspection of areas with higher potential for erosion.
Physical and structural properties of substrate.	 Soil Management Protocol describes soil stripping and stockpiling methods to be implemented to minimise impacts to growth media. Fit for purpose equipment fleet and experienced operators for optimal stripping and reapplication.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
	Implement erosion and sediment controls (where relevant).
Seed bed preparation is inadequate for native vegetation ecosystem land uses	Adequate planning and review of seed bed plans to suit projected final land use.
Than to regeration coordinate acco	Geochemical testing of soils to achieve optimal seed beds.
Unseasonal adverse weather	Schedule revegetation in optimal seasons.
	Temporary soil stabilisation with temporary cover crop species when revegetation is delayed.
	Installation of temporary sediment control structures.
Tubestock planting methodology is	Proven methods and equipment and dedicated training systems for personnel.
unsuitable.	Tubestock installation timing is appropriate (May to July).
	Watering of tubestock (when required).
Native vegetation establishment from seed within growth media (topsoil, subsoil, mulch) is unsuitable.	Soil Management Protocol describes soil stripping and stockpiling methods to be implemented to minimise impacts to seed resource within growth media.
	Topsoil and mulch respreading.
	Monitoring of seed germination (post application).
	Apply native vegetation seeding for ground cover species.
	Thinning of canopy species to facilitate establishment of ground cover.
Tubestock quality and viability.	Viability testing.
	Germination testing.
	Certification from suppliers.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
Predation of juvenile vegetation.	 Biodiversity Management Plan includes pest management controls. Monitoring and control (as required) of feral animal populations. Exclusion fencing installed (where required). Vertebrate pest culling programs.
Damage to rehabilitation areas including bushfire damage.	 Demarcate and control access to rehabilitation areas. Use appropriate plant and equipment to avoid damage. Management of bushfire through Bushfire Management Plan. Active encouragement of staff involvement with the Rural Fire Services Access paths for firefighting. Fire breaks. Tree guards.
Rehabilitation areas are not on trajectory to meet the approved completion criteria for final land use.	 Rehabilitation Management Plan describes the required monitoring, management and Trigger Action Response Plan to implement. Annual monitoring and reporting of rehabilitation performance against the completion criteria. General rehabilitation inspections undertaken to identify areas for potential maintenance and repair. Review of aerial photography.
Competitive exclusion of native flora due to exotic weed species and noxious weed.	 Rehabilitation Management Plan includes details of weed management within the rehabilitation areas. Routine ecology monitoring to detect changes in biodiversity and presence of weeds.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
	Weed spraying and maintenance.
Competitive exclusion of native fauna due to feral animals.	Rehabilitation monitoring includes monitoring of presence of feral animals and required control.
Total ariimalo.	Feral animal control (as required).
Inadequate habitat and resources for native fauna.	Rehabilitation monitoring (including camera monitoring).
iauria.	Installation of nest boxes on rehabilitation areas.
	Installation of salvaged habitat features (i.e. tree stags, hollows and rocks).
	Installation of tree troughs.
Adverse surface water and groundwater	Hydrogeological assessments completed to characterise surface water and groundwater resources.
quantity and quality.	Design and implement groundwater and surface water management strategy.
	Water monitoring and reporting.
Integration of Rehabilitation into LOM Planning	
Inadequate resources to complete the	Budget – allocation of funds to execute required rehabilitation activities.
rehabilitation required.	Annual review of the rehabilitation budget requirements.
	Dedicated rehabilitation planning team available to conduct rehabilitation activities.
	External suppliers and contractors available (as required).
Misalignment of long-term conceptual and short term implementation (internal) – operational constraints mean long-term plans are not achieved.	Review similarities between plans to recognise commonality.
	Pause some works until any conflicts are resolved.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
Inadequate records to demonstrate rehabilitation success and that risks are being managed.	 Evidence of implementation and records of management to be maintained. Development of quality assurance processes. Ongoing rehabilitation inspections and post closure monitoring. Independent rehabilitation audit. Verification records, including 'as built' surveys in GIS. Rehabilitation completion and maintenance records.
Ineffective scheduling of rehabilitation inside mine planning systems.	 LOM planning provides scheduling for rehabilitation. Three-year plan and annual budgets allow for rehabilitation. Review plans on a frequent basis to refine (as required).
Rehabilitation execution.	 Mine Design Standard No. 38; Landform Establishment QAP. Annual Rehabilitation Budget. Three Monthly Plan. Monthly Plan. Weekly Plan. Annual Review Reporting.
Lack of governance around mine closure and related financial obligations (i.e. corporate standards).	 SSD Approvals are in place that prescribes mine closure timing. Boggabri EA (2010) provides figures illustrating progressive rehabilitation.



Risk/Cause/Consequence	Summary of Control Measures to be Implemented
	EPBC Approval requires progressive rehabilitation according to an approved Rehabilitation Plan.
	 Rehabilitation Management Plan and Forward Program outlines the timing and amount of rehabilitation that is to be completed annually for the three-year term.
	Rehabilitation Bond is held with the NSW Government.
	 Final Void and Mine Closure Plan to be prepared by end 2025 in accordance with SSD approval.
	Corporate Mine Planning Standard (Idemitsu).
	Corporate Site Closure Standard (Idemitsu).
Inadequate risk assessment (i.e. not all risks and controls are identified relevant to current status of operations).	Frequent revision of Rehabilitation Risk Assessment.
	 Input from a suitably qualified team of appropriately skilled people representing a cross-section of the workforce and activities currently being conducted.



Appendix ERehabilitation Strategy Consultation



Table E-1: Summary of Agency Consultation Undertaken Over the Life of the Project

Issues
Consultation in relation to the 1989 Development Consent (DA 36/88), the current SSD 09_0182 and various compliance issues.
Consultation in relation to licences required under the <i>Water Act 1912</i> , consent under the <i>Water Management Act 2000</i> , associated Water Environmental Management Plans (EMPs) and water modelling undertaken.
Consultation in relation to Part 3A licence applications.
Consultation with ENSIS, a joint venture of CSIRO and SCION in relation to the development of the Rehabilitation Management Plan (RMP).
State Water Corporation (SWC) in relation to licence details under the <i>Water Act</i> 1912 and the <i>Water Management Act</i> 2000.
Former Department of Lands (now Dol – Lands & Water) (Soil Conservation Service) in relation to the assessment of Rural Land Capability and development of the RMP.
Former NSW Department of Industry, Dol (Fisheries) in relation to Part 3A licence applications.
Former NSW Department of Industry, DoI (Agriculture) in relation to the RMP.
Former NSW Office of Environment and Heritage (OEH) in relation to flora and fauna, archaeology, EPL application, mine rehabilitation and green offsets.
Forestry Corporation of NSW (Forests NSW) in relation to the Project property management and the RMP.
Resources Regulator within the Department of Regional NSW in relation to EMP requirements, historical MOP requirements, lease issues and rehabilitation objectives.
NSW Roads and Maritime Services (RMS) in relation to traffic and transport requirements, particularly with regard to the intersections and bridges over the Kamilaroi Highway.
Narrabri Shire Council (NSC). Presentation to the NSC Development Committee and on-site field days. Various planning and engineering staff have been consulted with respect to roads and planning issues. A member of NSC is also a member of the BCM CCC.
Gunnedah Shire Council (GSC) in relation to planning and transport issues.
North West Local Land Services (LLS) in relation to the development of the previous version of the RMP (which has now been incorporated into this RMP). North West LLS did not respond to request for comment on this Strategy.



Agency	Issues
ccc	15/2/2024 The minutes show the Strategy was presented at the CCC and no issues were raised.
	16/5/24 The minutes show the Strategy was announced as being submitted.
	29/8/24 The minutes mentions the rehab strategy final was being prepared for submission.

Department of Planning, Housing & Infrastructure



MP09_0182-PA-64

Alex Williams
Environmental Superintendent
Boggabri Coal Pty Limited
1/11/2024

Boggabri Coal – Rehabilitation Strategy

Dear Ms Williams

Thank you for submitting the Rehabilitation Strategy in accordance with Condition 71, Schedule 2 of the consent for the Boggabri Coal (MP09_0182-PA-64). I also acknowledge your response to the Department's review comments and request for additional information.

I note the Rehabilitation Strategy has been prepared in consultation with the Resources Regulator, FCNSW, council, BCS and DPE Water; and contains the information required by the conditions of approval. The Department notes that while a copy of the strategy was provided to North West Local Land Services (LLS), you are yet to receive feedback.

Accordingly, I conditionally approve the revised Rehabilitation Strategy (Revision V01.02, June 2024). Within six weeks of receiving any feedback from LLS, the Department requires you to review and (if necessary) revise the Rehabilitation Strategy to reflect that feedback and resubmit to the Department for review and approval via the Major Projects portal.

You are reminded that if there are any inconsistencies between the Strategy and the conditions of approval, the conditions prevail. Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Charissa Pillay on 02 99955944.

Yours sincerely

Stephen O'Donoghue

Director Resource Assessments

As nominee of the Planning Secretary

1