PEMBROKE

Olive Downs Coking Coal Project

Additional Information to the
Environmental Impact Statement

Section 4

Rehabilitation

4 REHABILITATION

1. Clearly describe the intended land use for each mine domain. The proposed post-mining land use must be clearly specified using terms such as grazing (up to a particular intensity), cropping (including type of crop), forestry plantation (for a specified type of wood), habitat (for a nominated species), or return to native vegetation.

Pembroke has considered potential post-mining land uses for each mine domain (e.g. agriculture, nature conservation) taking into account the rehabilitation hierarchy described in the *Rehabilitation Requirements for Mining Resource Activities Guideline* (Department of Environment and Heritage Protection [DEHP], 2014), relevant strategic land use objectives of the area in the vicinity of the Project and the potential benefits of the post-mining land use to the environment, future landholders and the community.

The proposed post-mining land uses for the Project are to reinstate land to:

- agriculture (low intensity cattle grazing);
- native vegetation (woodland); and
- fauna habitat.

Table 4-1 lists the proposed post-mining land uses for each rehabilitation domain. Figures 4-1a and 4-1b shows the proposed post-mining land uses and rehabilitation domains.

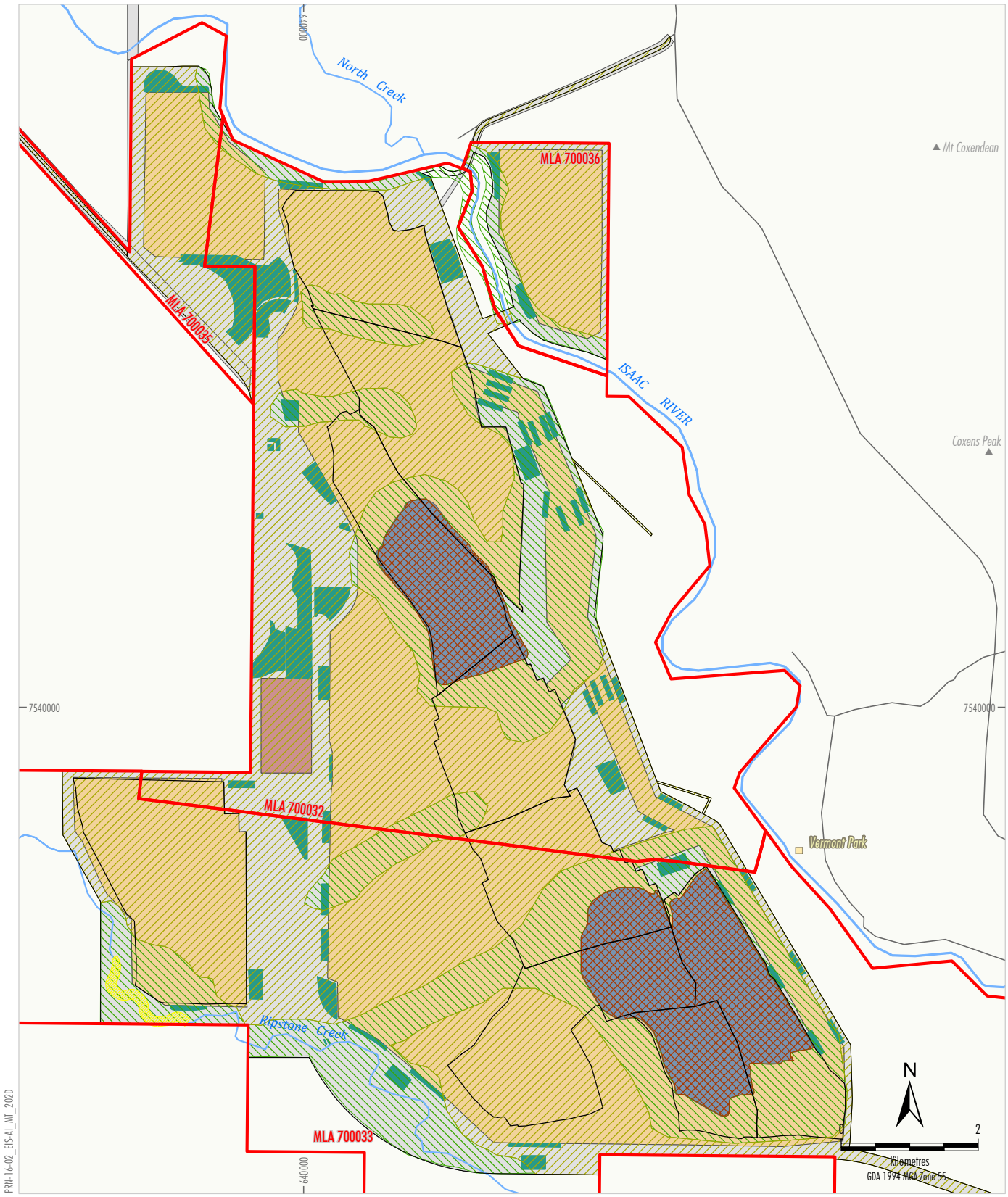
Table 4-1
Rehabilitation Domains and Post-mining Land Use

Rehabilitation Domain	Proposed Post-mining Land Use		
	Agriculture (Low Intensity Cattle Grazing)	Native Vegetation (Woodland)	Fauna Habitat
Waste Rock Emplacements	✓	✓	
Final Voids			✓
Infrastructure Areas	✓	✓	
Water Management Infrastructure	✓	✓	
ILF Cells	✓		
Ripstone Creek Diversion		✓	

A detailed description of the proposed post-mining land use for each rehabilitation domain is provided in Section 3 of the *Additional Information to the EIS – Rehabilitation Strategy* which is provided in Appendix D of this document.

2. If establishing native vegetation is one of the rehabilitation objectives for the mine site, specify the ecosystem(s) or habitats that are intended to be developed on the rehabilitated domains.

As described in Table 4-1, some of the Project rehabilitation domains would be rehabilitated to a native vegetation (woodland) post-mining land use, as described below.



LEGEND

Mining Lease Application Boundary

Dwelling

Post-mining Landuse

Agriculture (Low Intensity Cattle Grazing)

Nature Conservation (Fauna Habitat)

Nature Conservation (Woodland)

Rehabilitation Domains

Final Void

Infrastructure Area

Waste Rock Emplacement

ILF Cells

Water Management Infrastructure

Ripstone Creek Diversion

Source: Pembroke (2018)

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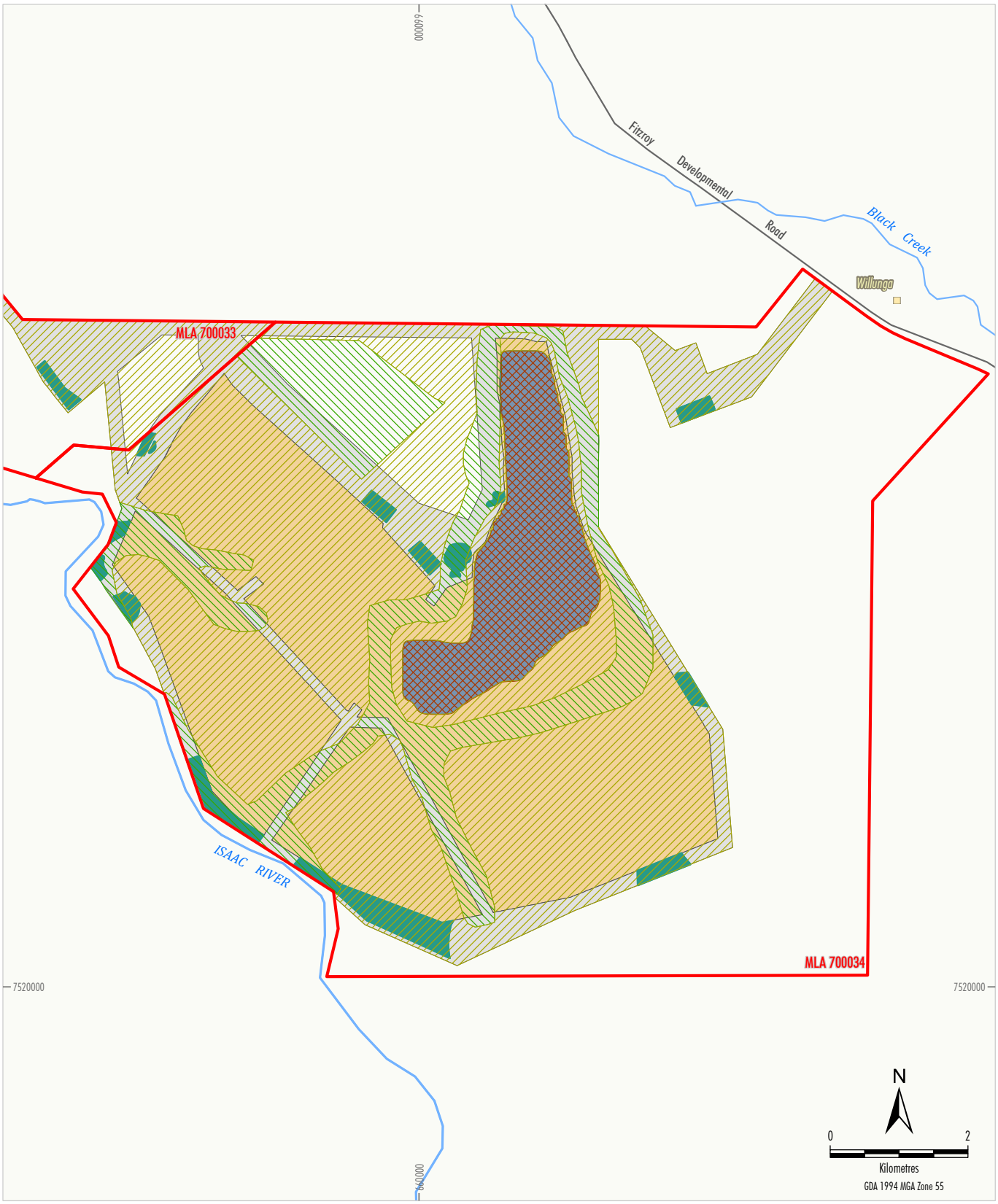
OLIVE DOWNS COKING COAL PROJECT

Conceptual Post-mining Land Use

Olive Downs South Domain

Figure 4-1a



LEGEND

Mining Lease Application Boundary

Dwelling

Post-mining Landuse

Agriculture (Low Intensity Cattle Grazing)

Nature Conservation (Fauna Habitat)

Nature Conservation (Woodland)

Rehabilitation Domains

Final Void

Infrastructure Area

Waste Rock Emplacement

ILF Cells

Water Management Infrastructure

Source: Pembroke (2018)

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OLIVE DOWNS COKING COAL PROJECT

Conceptual Post-mining Land Use
Willunga Domain

Figure 4-1b

Remnant native vegetation in the Project area largely comprises woodland ecosystems adapted to alluvial and sand plains. Regional Ecosystems (RE) 11.5.3 (*Poplar Box [Eucalyptus populnea] +/- Silver-leaved Ironbark [E. melanophloia] +/- Clarkson's Bloodwood [Corymbia clarksoniana] woodland on Cainozoic sand plains and / or remnant surfaces*) and RE 11.3.2 (*Poplar box [Eucalyptus populnea] woodland on alluvial plains*). Changes in the landform and substrate characteristics post-mining mean that RE 11.5.3 and RE 11.3.2 are not able to be recreated. However, framework species from these RE's (Poplar Box, Silver-leaved Ironbark and Clarkson's Bloodwood) and from RE's occurring on analogous elevated landforms in the region would be established in the woodland post-mining land use area.

For the native vegetation (woodland) post-mining land use areas surrounding the Ripstone Creek diversion, it is proposed to be rehabilitated using framework species from RE 11.3.2, RE 11.5.3 and RE 11.3.25 (*Queensland Blue Gum [Eucalyptus tereticornis] or River Red Gum [E. camaldulensis] woodland fringing drainage lines*).

These areas of riparian vegetation would provide suitable habitat for a range of native fauna, including species recorded within the Project area by DPM Envirosciences (2018), such as the Eastern Snapping Frog (*Cyclorana novaehollandiae*), Broad-palmed Rocket Frog (*Litoria latopalmata*), Blue-winged Kookaburra (*Dacelo leachii*) and Brown Falcon (*Falco berigora*).

Further information regarding the riparian vegetation features within the Ripstone Creek diversion (including a detailed Revegetation and Vegetation Management Plan) would be presented in the detailed design plan which would be provided to DES prior to construction of the diversion in accordance with the *Guideline: Works that Interfere with Water in a Watercourse – Watercourse Diversions* (Department of Natural Resources and Mines, 2014).

The final void rehabilitation domain at the Project would be rehabilitated to a fauna habitat post-mining land use (Table 4-1).

The final voids would comprise of low wall, highwall and a void water body landform components. Pembroke has investigated the likelihood that the final void would provide suitable native fauna habitat (Table 4-2). The final voids would provide suitable habitat for a range of native fauna, including species recorded within the Project site by DPM Envirosciences (2018) such as the Strip-faced Dunnart (*Sminthopsis macroura*), Hoary Wattled Bat (*Chalinolobus nigrogriseus*) and Australian Grey Teal (*Anas gracilis*) (Table 4-2).

The final void salinity balance presented in the draft EIS Surface Water Assessment (Hatch, 2018a) conservatively assumed that groundwater inflow to the floor of the final voids would be through a coal layer. To improve water quality within the final void water bodies by reducing salinity levels, Pembroke commits to removing basement coal from the floor of the ODS3, ODS7/8 and WIL5 open cut pits at the end of mining.

The final void salinity balance presented in the draft EIS has been revised incorporating the commitment to remove basement coal. The simulated long-term salinity levels in the final voids based on the revised modelling are shown in Appendix D. The results indicate that the rate of salinity increase is significantly lower if all coal is removed from the final void floor at the end of mining. For example, under the revised balance, the salinity of the ODS7/8 and WIL5 final void water bodies are predicted to remain brackish (i.e. <5,000 mg/L TDS) for approximately 300 to 550 years. The ODS3 final void water body is predicted to remain brackish for approximately 150 to 200 years.

As described in Table 4-2, water bodies with salinity levels <4,000 mg/L TDS are able to provide habitat for a variety of freshwater aquatic plants and invertebrates. Some ducks, such as the Australian Grey Teal (recorded onsite as part of the EIS Ecology Assessment [DPM, 2018]) are known to use permanent brackish and saline habitats.

Although the final void water bodies are not predicted to reach hypersaline conditions (i.e. >35,000 mg/L TDS) for at least the modelling period (i.e. 600 years), it is recognised that some ducks are also known to live in hypersaline environments by also drinking freshwater from elsewhere (Hart et al, 1991). Halophytic plants grow around the edges of water bodies under hypersaline conditions (after Hart et al, 1991).

Table 4-2
Final Void Native Fauna Habitat Resources

Final Void Landform Component	Native Fauna Habitat Resources
Low Wall	• Native vegetation (predominantly native grasses) which would provide habitat for native ground-dwelling fauna (e.g. the Strip-faced Dunnart - recorded within the Project area by DPM Envirosciences).
High Wall	• Native vegetation in the upper shallow slope areas (slopes < 20 degrees). • Cliff habitat in the high walls can be used by nesting native birds and cave-dwelling bats. For example, Peregrine Falcon have a wide distribution across Qld (DES, 2018) and have been previously recorded nesting in mine pit walls (Potts and Donato, 2008; CBC, 2011; DeBeers Group, 2017) and other man-made structures (DES, 2018). Various cave dwelling microbats (such as the Hoary Wattled Bat [*Chalinolobus nigrogriceus*] recorded on site by DPM Envirosciences [DPM] [2018a]) can roost in rock fissures and crevices (Churchill, 2008).
Void Water Body	• The air space above the final void water bodies can be used by native insectivorous microbats for foraging on aerial flying insects. Studies have found multiple bat species foraging over made-made saline and hypersaline environments at mine sites (Griffiths et al. 2014; Griffiths, 2013). It is also possible that some bats drink brackish water (Griffiths et al. 2014). • The final void water bodies will increase in salinity over time. A water body with a salinity level <4,000 mg/L TDS is able to provide habitat for a variety of freshwater aquatic plants and invertebrates in shallower edge areas (after Hart et al, 1991, Proctor and Grigg, 2006 and Richardson, 2012). The WIL5, ODS7/8 and ODS3 water bodies are predicted to remain below 4,000 mg/L TDS for approximately 420, 280 and 140 years respectively. Based on simulations by WRM (pers. comm. 2019), the salinity of the ODS3 final void water body is expected to remain brackish <5,000 mg/L TDS) for at least the first 150 years. The ODS7/8 and WIL5 final void water bodies will remain brackish for an even longer time (300 and 550 years). Some plants (such as the Common Reed [*Phragmites australis*] recorded on site by DPM [2018b]) can grow in brackish water (Hart et al, 1991). Brackish water is potable to most (if not all) terrestrial wildlife (Griffiths et al. 2014). Some ducks, such as the Australian Grey Teal recorded on site by DPM (2018), are known to use permanent brackish and saline habitats, particularly as a dry season refuge (Lavery, 1972). • Although the final void water bodies are not predicted to become hypersaline for at least the duration of the modelling exercise (600 years), it is known that ducks are able to live in hypersaline environments by also drinking fresh water from elsewhere (Hart et al, 1991). Halophytic plants grow around the edges of water bodies under hypersaline conditions (after Hart et al, 1991).

Further information on the post-mining land uses for each domain are shown in Table 4 of Appendix D.

3. In consideration of the proposed final land use for each domain, update the proposed performance indicators to include the following:

a) state what objective(s) the indicator relates to;

b) justify the selection of the indicator, including how the relationship between the indicator and the objective has been established (supported by references to authoritative sources or relevant monitoring data);

c) state how the indicator is to be measured;

d) state how the results will be reported and interpreted.

Disturbed areas would be progressively rehabilitated to achieve the rehabilitation objectives established for each domain. The progress of the rehabilitation would be monitored against indicators, and ultimately against completion criteria to demonstrate successful rehabilitation of the domains.

Revised rehabilitation goals, objectives, performance indicators and completion criteria specific to each rehabilitation domain are presented in Table 4-3.

Table 4-3
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Waste Rock Emplacements	Long-term safety	Waste rock emplacement final landforms are geotechnically stable and safe.	Geotechnical assessment of the waste rock emplacement final landforms (slope angle and length) prepared by a suitably qualified person. The geotechnical assessment would be reported and interpreted in the Final Rehabilitation Report.	• Geotechnical assessments of final landforms are recommended by the *Planning for Integrated Min Closure: Toolkit* (international Council on Mining and Metals, 2008).	• The geotechnical assessment concludes: ▪ Waste rock emplacement final landform slopes are approximately 7 degrees (1V:8H) or lower. ▪ The toe of out-of-pit waste rock emplacements standoff the crest of the final voids by at least 50 metres (m). ▪ The geotechnical assessment concludes the waste rock emplacement final landforms are stable and safe.
		Potentially contaminated areas are remediated and are safe.	Contaminated land assessment prepared in accordance with the *Queensland auditor handbook for contaminated land* (DES, 2018) by a suitably qualified person. The contaminated land assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 7, Part 8 of the EP Act.	• The contaminated land assessment concludes that the domain site is suitable for the proposed post-mining land use.
		Other potential safety risks (e.g. falls from height) are identified and appropriately addressed so the site is safe.	Safety assessment (including risk assessment) prepared by a suitably qualified person. The safety assessment would be reported and interpreted in the Final Rehabilitation Report.	• Post-mining safety assessment is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• The safety assessment concludes that the risks associated with other potential safety risks are low.
	Non-polluting	Runoff and seepage from waste rock emplacements are a low risk of causing environmental harm.	Surface and groundwater quality (e.g. sediment load, pH, heavy metal content, etc) monitoring data. Surface and groundwater quality monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Water quality monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Receiving water quality monitoring results comply with Environmental Authority surface and groundwater quality criteria, for a period of at least two years post-mining.
			Environmental risk assessment prepared by a suitably qualified team. The environmental risk assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 5, Part 10 of the EP Act.	• The environmental risk assessment concludes that there is a low risk of environmental harm.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Waste Rock Emplacements (cont.)	Stable	Waste rock emplacement final landforms are geotechnically stable.	Geotechnical assessment of the waste rock emplacement final landforms (slope angle and length) prepared by a suitably qualified person. The geotechnical assessment would be reported and interpreted in the Final Rehabilitation Report.	• Geotechnical assessments of final landforms are recommended by the *Planning for Integrated Min Closure: Toolkit* (international Council on Mining and Metals, 2008).	• The geotechnical assessment concludes: ▪ Waste rock emplacement final landform slopes are approximately 7 degrees (1V:8H) or lower. ▪ The toe of out-of-pit waste rock emplacements standoff the crest of the final voids by at least 50 m. ▪ The waste rock emplacement final landforms are stable and safe.
		Landform achieves appropriate erosion rates.	Erosion (erosion rates and sheets, rills and gully formation) monitoring data. Erosion monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Erosion monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Erosion monitoring data demonstrates the following for two years post-mining: ▪ No active gully erosion observed. ▪ Erosion maintenance requirements are comparable to relevant rehabilitation monitoring reference sites.
			Surface water quality (e.g. pH, heavy metal content, etc) monitoring data. Surface water quality monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Water quality monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Receiving water quality monitoring results comply with Environmental Authority surface water quality criteria, for a period of at least two years post-mining.
		Self-sustaining vegetative cover established.	Landscape function analysis (LFA) (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• LFA is a Commonwealth Scientific and Industrial Research Organisation (CSIRO) developed method used to provide indicators of rehabilitation success and allows the assessment of landscape processes. LFA aims to measure the progression of rehabilitation towards a self-sustaining ecosystem through the assessment of landscape function.	• LFA monitoring demonstrates that vegetation cover, types and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Waste Rock Emplacements (cont.)	Sustainable Land Use	Establish agriculture (low intensity cattle grazing) land use.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates: ▪ Physical, chemical and biological properties of the growth media are similar to relevant rehabilitation monitoring reference sites. ▪ Vegetation consistent with grass species suitable for grazing (e.g. including Buffel Grass (*Cenchrus ciliaris*), Wiregrass (*Aristida* sp) and Kangaroo Grass (*Themeda triandra*) comparable to relevant rehabilitation monitoring reference sites. ▪ Vegetation cover and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining. ▪ Weed diversity and abundance is comparable to relevant rehabilitation monitoring reference sites. ▪ Pests do not occur in substantial numbers or visibly affect the development of with pasture grass species.
			Cattle stocking rate. Cattle stocking rate monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Agricultural productivity is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Cattle stocking rate monitoring demonstrates a stocking rate of 0.22 adult equivalents per hectare.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Waste Rock Emplacements (cont.)	Sustainable Land Use (cont.)	Establish self-sustaining nature conservation (woodland) land use.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates: ▪ Physical, chemical and biological properties of the growth media are similar to relevant rehabilitation monitoring reference sites. ▪ Woodland vegetation contains a species diversity comparable to relevant rehabilitation monitoring reference sites (e.g. Poplar Box [*Eucalyptus populnea*] +/- Silver-leaved Ironbark [*E. melanophloia*] +/- Clarkson's Bloodwood [*Corymbia clarksoniana*]). ▪ Vegetation cover and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining. ▪ Generational succession of trees and shrubs. ▪ Weed diversity and abundance is comparable to relevant rehabilitation monitoring reference sites. ▪ Pests do not occur in substantial numbers or visibly affect the development of native plant species.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Final Voids	Long-term safety	Final void final landforms are geotechnically stable and safe.	Geotechnical assessment of the final void final landforms (slope angle and length) prepared by a suitably qualified person. The geotechnical assessment would be reported and interpreted in the Final Rehabilitation Report.	• Geotechnical assessments of final landforms are recommended by the *Planning for Integrated Min Closure: Toolkit* (international Council on Mining and Metals, 2008).	• The geotechnical assessment concludes: ▪ Final void highwalls slopes are 20º or lower where located within alluvium and tertiary clays (known as the Cenozoic overburden) to achieve a factor of safety of 1.5. ▪ Final void highwall slopes are 45º or lower where located within a fault fractured zone, and 55º where they are located away from fault zones. An overall angle of 55º is achieved by 50 m high batters at 65º incorporating 10 m wide intermediate benches. ▪ Low wall slopes are stable. ▪ The toe of out-of-pit waste rock emplacements standoff the crest of the final voids by at least 50 m. ▪ Perimeter bunding formed and security fencing installed. ▪ The final void final landforms are stable and safe.
		Potentially contaminated areas are remediated and are safe.	Contaminated land assessment prepared in accordance with the *Queensland auditor handbook for contaminated land* (DES, 2018) by a suitably qualified person. The contaminated land assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 7, Part 8 of the EP Act.	• The contaminated land assessment concludes that the Project site is suitable for the proposed post-mining land use.
		Other potential safety risks (e.g. falls from height) are identified and appropriately addressed so the site is safe.	Safety assessment (including risk assessment) prepared by a suitably qualified person. The safety assessment would be reported and interpreted in the Final Rehabilitation Report.	• Post-mining safety assessment is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• The safety assessment concludes that the risks associated with other potential safety risks are low.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Final Voids (cont.)	Non-polluting	Final voids are isolated from the Isaac River.	Flood assessment prepared by a suitably qualified person. The flood assessment would be reported and interpreted in the Final Rehabilitation Report.	• Hydrological studies are recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• The flood assessment concludes that the final voids are isolated from all flood events, up to and including a PMF event.
		Final voids are a low risk of causing environmental harm.	Groundwater assessment prepared by a suitably qualified person. The groundwater assessment would be reported and interpreted in the Final Rehabilitation Report.		• The groundwater assessment concludes that the final voids are acting as groundwater sinks, preventing the migration of potentially saline water into adjacent aquifers and watercourses.
			Final void balance prepared by a suitably qualified person. The final void balance would be reported and interpreted in the Final Rehabilitation Report.		• The final void balance concludes that the final void water bodies would equilibrate well below the point at which they would spill to the surrounding environment.
			Surface and groundwater quality (e.g. pH, heavy metal content, etc) monitoring data. Surface and groundwater quality monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Water quality monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Receiving water quality monitoring results comply with Environmental Authority surface and groundwater quality criteria, for a period of at least two years post-mining.
			Environmental risk assessment prepared by a suitably qualified team. The environmental risk assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 5, Part 10 of the EP Act.	• The environmental risk assessment concludes that there is a low risk of environmental harm.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Final Voids (cont.)	Stable	Final void final landforms are geotechnically stable and safe.	Geotechnical assessment of the final void final landforms (slope angle and length) prepared by a suitably qualified person. The geotechnical assessment would be reported and interpreted in the Final Rehabilitation Report.	• Geotechnical assessments of final landforms are recommended by the *Planning for Integrated Min Closure: Toolkit* (international Council on Mining and Metals, 2008).	• The geotechnical assessment concludes: ▪ Final void highwalls slopes are 20º or lower where located within alluvium and tertiary clays (known as the Cenozoic overburden) to achieve a factor of safety of 1.5. ▪ Final void highwall slopes are 45º or lower where located within a fault fractured zone, and 55º where they are located away from fault zones. An overall angle of 55º is achieved by 50 m high batters at 65º incorporating 10 m wide intermediate benches. ▪ The toe of out-of-pit waste rock emplacements standoff the crest of the final voids by at least 50 m. ▪ Perimeter bunding formed and security fencing installed. ▪ The final void final landforms are stable and safe.
	Sustainable Land Use	Establish self-sustaining (fauna habitat) land use.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates: ▪ Sustainable fauna usage (e.g. Strip-faced Dunnart, Hoary Wattled Bat and Australian Grey Teal) of the final voids. ▪ Weed diversity and abundance is comparable to relevant rehabilitation monitoring reference sites. ▪ Pests do not occur in substantial numbers.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Infrastructure Areas	Long-term safety	Potentially contaminated areas are remediated and are safe.	Contaminated land assessment prepared in accordance with the *Queensland auditor handbook for contaminated land* (DES, 2018) by a suitably qualified person. The contaminated land assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 7, Part 8 of the EP Act.	• The contaminated land assessment concludes that the Project site is suitable for the proposed post-mining land use.
		Other potential safety risks (e.g. risks associated with retained infrastructure) are identified and appropriately addressed so the site is safe.	Safety assessment (including risk assessment) prepared by a suitably qualified person. The safety assessment would be reported and interpreted in the Final Rehabilitation Report.	• Post-mining safety assessment is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• The safety assessment concludes that the risks associated with other potential safety risks are low.
	Non-polluting	Potentially contaminated areas are remediated and are safe.	Contaminated land assessment prepared in accordance with the *Queensland auditor handbook for contaminated land* (DES, 2018) by a suitably qualified person. The contaminated land assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 7, Part 8 of the EP Act.	• The contaminated land assessment concludes that the Project site is suitable for the proposed post-mining land use.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Infrastructure Areas (cont.)	Stable	Landform achieves appropriate erosion rates.	Erosion (erosion rates and sheets, rills and gully formation) monitoring data. Erosion monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Erosion monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Erosion monitoring data demonstrates the following for two years post-mining: ▪ Limited erosion (presence of sheets, rills and gullies) observed. ▪ Soil loss rates are comparable to relevant rehabilitation monitoring reference sites. ▪ Erosion maintenance requirements are comparable to relevant rehabilitation monitoring reference sites.
			Surface water quality (e.g. pH, heavy metal content, etc) monitoring data. Surface water quality monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Water quality monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Receiving water quality monitoring results comply with Environmental Authority surface water quality criteria, for a period of at least two years post-mining.
		Self-sustaining vegetative cover established.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates that vegetation cover, types and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Infrastructure Areas (cont.)	Sustainable Land Use	Establish agriculture (low intensity cattle grazing) land use.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates: ▪ Physical, chemical and biological properties of the growth media are similar to relevant rehabilitation monitoring reference sites. ▪ Vegetation consistent with grass species suitable for grazing (e.g. including Buffel Grass (*Cenchrus ciliaris*), Wiregrass (*Aristida* sp) and Kangaroo Grass (*Themeda triandra*) comparable to relevant rehabilitation monitoring reference sites. ▪ Vegetation cover and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining. ▪ Weed diversity and abundance is comparable to relevant rehabilitation monitoring reference sites. ▪ Pests do not occur in substantial numbers or visibly affect the development of with pasture grass species.
			Cattle stocking rate. Cattle stocking rate monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Agricultural productivity is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Cattle stocking rate monitoring demonstrates a stocking rate of 0.22 adult equivalents per hectare.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Infrastructure Areas (cont.)	Sustainable Land Use (cont.)	Establish self-sustaining nature conservation (woodland) land use.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates: ▪ Physical, chemical and biological properties of the growth media are similar to relevant rehabilitation monitoring reference sites. ▪ Woodland vegetation contains a species diversity comparable to relevant rehabilitation monitoring reference sites (e.g. Poplar Box [*Eucalyptus populnea*] +/- Silver-leaved Ironbark [*E. melanophloia*] +/- Clarkson's Bloodwood [*Corymbia clarksoniana*]). ▪ Vegetation cover and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining. ▪ Generational succession of trees and shrubs. ▪ Weed diversity and abundance is comparable to relevant rehabilitation monitoring reference sites. ▪ Pests do not occur in substantial numbers or visibly affect the development of native plant species.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Water Management Infrastructure	Long-term safety	Retained management infrastructure is appropriately designed.	Geotechnical assessment of retained water infrastructure prepared by a suitably qualified person. The geotechnical assessment would be reported and interpreted in the Final Rehabilitation Report.	• Geotechnical assessments of final landforms are recommended by the *Planning for Integrated Min Closure: Toolkit* (international Council on Mining and Metals, 2008).	• A geotechnical assessment concludes that the retained water management infrastructure is stable and safe.
		Potentially contaminated areas are remediated and are safe.	Contaminated land assessment prepared in accordance with the *Queensland auditor handbook for contaminated land* (DES, 2018) by a suitably qualified person. The contaminated land assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 7, Part 8 of the EP Act.	• The contaminated land assessment concludes that the Project site is suitable for the proposed post-mining land use.
		Other potential safety risks (e.g. risks associated with retained infrastructure) are identified and appropriately addressed so the site is safe.	Safety assessment (including risk assessment) prepared by a suitably qualified person. The safety assessment would be reported and interpreted in the Final Rehabilitation Report.	• Post-mining safety assessment is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• The safety assessment concludes that the risks associated with other potential safety risks are low.
	Non-polluting	Retained water infrastructure is a low risk of causing environmental harm.	Surface water quality (e.g. pH, heavy metal content, etc) monitoring data. Surface water quality monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Water quality monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Receiving water quality monitoring results comply with Environmental Authority surface water quality criteria, for a period of at least two years post-mining.
			Environmental risk assessment prepared by a suitably qualified team. The environmental risk assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 5, Part 10 of the EP Act.	• The environmental risk assessment concludes that there is a low risk of environmental harm.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Water Management Infrastructure (cont.)	Non-polluting (cont.)	Potentially contaminated areas are remediated and are safe.	Contaminated land assessment prepared in accordance with the *Queensland auditor handbook for contaminated land* (DES, 2018) by a suitably qualified person. The contaminated land assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 7, Part 8 of the EP Act.	• The contaminated land assessment concludes that the Project site is suitable for the proposed post-mining land use.
	Stable	Landform achieves appropriate erosion rates.	Erosion (erosion rates and sheets, rills and gully formation) monitoring data. Erosion monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Erosion monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Erosion monitoring data demonstrates the following for two years post-mining: ▪ Limited erosion (presence of sheets, rills and gullies) observed. ▪ Soil loss rates are comparable to relevant rehabilitation monitoring reference sites. ▪ Erosion maintenance requirements are comparable to relevant rehabilitation monitoring reference sites.
			Surface water quality (e.g. sediment load, pH, heavy metal content, etc) monitoring data. Surface water quality monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Water quality monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Receiving water quality monitoring results comply with Environmental Authority surface water quality criteria, for a period of at least two years post-mining.
		Self-sustaining vegetative cover established.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates that vegetation cover, types and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Water Management Infrastructure (cont.)	Sustainable Land Use	Establish agriculture (low intensity cattle grazing) land use.	Surface water quality (e.g. pH, heavy metal content, etc) monitoring data. Surface water quality monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Water quality monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Receiving water quality monitoring results comply with Environmental Authority surface water quality criteria, for a period of at least two years post-mining.
			LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates: ▪ Physical, chemical and biological properties of the growth media are similar to relevant rehabilitation monitoring reference sites. ▪ Vegetation consistent with grass species suitable for grazing (e.g. including Buffel Grass (*Cenchrus ciliaris*), Wiregrass (*Aristida* sp) and Kangaroo Grass (*Themeda triandra*) comparable to relevant rehabilitation monitoring reference sites. ▪ Vegetation cover and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining. ▪ Weed diversity and abundance is comparable to relevant rehabilitation monitoring reference sites. ▪ Pests do not occur in substantial numbers or visibly affect the development of with pasture grass species.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Water Management Infrastructure (cont.)	Sustainable Land Use (cont.)	Establish self-sustaining nature conservation (woodland) land use.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates: ▪ Physical, chemical and biological properties of the growth media are similar to relevant rehabilitation monitoring reference sites. ▪ Woodland vegetation contains a species diversity comparable to relevant rehabilitation monitoring reference sites (e.g. Poplar Box [*Eucalyptus populnea*] +/- Silver-leaved Ironbark [*E. melanophloia*] +/- Clarkson's Bloodwood [*Corymbia clarksoniana*]). ▪ Vegetation cover and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining. ▪ Generational succession of trees and shrubs. ▪ Weed diversity and abundance is comparable to relevant rehabilitation monitoring reference sites. ▪ Pests do not occur in substantial numbers or visibly affect the development of native plant species.
In-line Flocculation Cells	Long-term safety	Potentially contaminated areas are remediated and are safe.	Contaminated land assessment prepared in accordance with the *Queensland auditor handbook for contaminated land* (DES, 2018) by a suitably qualified person. The contaminated land assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 7, Part 8 of the EP Act.	• The contaminated land assessment concludes that the Project site is suitable for the proposed post-mining land use.
		Other potential safety risks are identified and appropriately addressed so the site is safe.	Safety assessment (including risk assessment) prepared by a suitably qualified person. The safety assessment would be reported and interpreted in the Final Rehabilitation Report.	• Post-mining safety assessment is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• The safety assessment concludes that the risks associated with other potential safety risks are low.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
In-line Flocculation Cells (cont.)	Non-polluting	Potentially contaminated areas are remediated and are safe.	Contaminated land assessment prepared in accordance with the *Queensland auditor handbook for contaminated land* (DES, 2018) by a suitably qualified person. The contaminated land assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 7, Part 8 of the EP Act.	• The contaminated land assessment concludes that the Project site is suitable for the proposed post-mining land use.
	Stable	Landform achieves appropriate erosion rates.	Erosion (erosion rates and sheets, rills and gully formation) monitoring data. Erosion monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Erosion monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Erosion monitoring data demonstrates the following for two years post-mining: ▪ Limited erosion (presence of sheets, rills and gullies) observed. ▪ Soil loss rates are comparable to relevant rehabilitation monitoring reference sites. ▪ Erosion maintenance requirements are comparable to relevant rehabilitation monitoring reference sites.
			Surface water quality (e.g. pH, heavy metal content, etc) monitoring data. Surface water quality monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Water quality monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Receiving water quality monitoring results comply with Environmental Authority surface water quality criteria, for a period of at least two years post-mining.
		Self-sustaining vegetative cover established.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates that vegetation cover, types and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
In-line Flocculation Cells (cont.)	Sustainable Land Use	Establish agriculture (low intensity cattle grazing) land use.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates: ▪ Physical, chemical and biological properties of the growth media are similar to relevant rehabilitation monitoring reference sites. ▪ Vegetation consistent with grass species suitable for grazing (e.g. including Buffel Grass (*Cenchrus ciliaris*), Wiregrass (*Aristida* sp) and Kangaroo Grass (*Themeda triandra*) comparable to relevant rehabilitation monitoring reference sites. ▪ Vegetation cover and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining. ▪ Weed diversity and abundance is comparable to relevant rehabilitation monitoring reference sites. ▪ Pests do not occur in substantial numbers or visibly affect the development of with pasture grass species.
			Cattle stocking rate. Cattle stocking rate monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Agricultural productivity is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Cattle stocking rate monitoring demonstrates a stocking rate of 0.22 adult equivalents per hectare.
Ripstone Creek Diversion	Long-term safety	Potentially contaminated areas are remediated and are safe.	Contaminated land assessment prepared in accordance with the *Queensland auditor handbook for contaminated land* (DES, 2018) by a suitably qualified person. The contaminated land assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 7, Part 8 of the EP Act.	• The contaminated land assessment concludes that the Project site is suitable for the proposed post-mining land use.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Ripstone Creek Diversion (cont.)	Long-term safety (cont.)	Other potential safety risks are identified and appropriately addressed so the site is safe.	Safety assessment (including risk assessment) prepared by a suitably qualified person. The safety assessment would be reported and interpreted in the Final Rehabilitation Report.	• Post-mining safety assessment is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• The safety assessment concludes that the risks associated with other potential safety risks are low.
	Non-polluting	Ripstone Creek diversion is a low risk of causing environmental harm.	Surface water quality (e.g. pH, heavy metal content, etc) monitoring data. Surface water quality monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Water quality monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Receiving water quality monitoring results comply with Environmental Authority surface water quality criteria, for a period of at least two years post-mining.
			Environmental risk assessment prepared by a suitably qualified team. The environmental risk assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 5, Part 10 of the EP Act.	• The environmental risk assessment concludes that there is a low risk of environmental harm.
		Potentially contaminated areas are remediated and are safe.	Contaminated land assessment prepared in accordance with the *Queensland auditor handbook for contaminated land* (DES, 2018) by a suitably qualified person. The contaminated land assessment would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the requirements of Chapter 7, Part 8 of the EP Act.	• The contaminated land assessment concludes that the Project site is suitable for the proposed post-mining land use.
	Stable	Ripstone Creek diversion is appropriately designed and constructed.	Detailed Design Plan for the Ripstone Creek diversion prepared by a suitably qualified person. The Detailed Design Plan would be reported and interpreted in the Final Rehabilitation Report.	• Consistent with the *Guideline: Works that Interfere with Water with Water in a Watercourse – Watercourse Diversions* (Department of Natural Resources and Mines, 2014).	• The Ripstone Creek diversion has been constructed and rehabilitated in accordance with the Detailed Design Plan.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Ripstone Creek Diversion (cont.)	Stable (cont.)	Landform achieves appropriate erosion rates.	Erosion (erosion rates and sheets, rills and gully formation) monitoring data. Erosion monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Erosion monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Erosion monitoring data demonstrates the following for two years post-mining: ▪ Limited erosion (presence of sheets, rills and gullies) observed. ▪ Soil loss rates are comparable to relevant rehabilitation monitoring reference sites. ▪ Erosion maintenance requirements are comparable to relevant rehabilitation monitoring reference sites.
			Surface and groundwater quality (e.g. sediment load, pH, heavy metal content, etc) monitoring data. Surface and groundwater quality monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• Water quality monitoring is recommended by *Rehabilitation Requirements for Mining Resource Activities Guideline* (DEHP, 2014).	• Receiving water quality monitoring results comply with Environmental Authority surface water quality criteria, for a period of at least two years post-mining.
		Self-sustaining vegetative cover established.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates that vegetation cover, types and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining.

Table 4-3 (Continued)
Preliminary Rehabilitation Requirements

Domain	Goals	Objectives	Performance Indicators	Selection of Performance Indicator	Completion Criteria
Ripstone Creek Diversion (cont.)	Sustainable Land Use	Establish self-sustaining nature conservation (woodland) land use.	LFA (e.g. erosion, soil physical parameters, organic matter and nutrient content and cycling, vegetation dynamics, habitat complexity and habitat quality) monitoring. LFA monitoring data would be reported and interpreted in the Final Rehabilitation Report.	• CSIRO.	• LFA monitoring demonstrates: ▪ Physical, chemical and biological properties of the growth media are similar to relevant rehabilitation monitoring reference sites. ▪ Woodland vegetation contains a species diversity comparable to relevant rehabilitation monitoring reference sites (e.g. Queensland Blue Gum or River Red Gum woodland fringing drainage lines]). ▪ Vegetation cover and densities are comparable to relevant rehabilitation monitoring reference sites, for a period of at least two years post-mining. ▪ Generational succession of trees and shrubs. ▪ Weed diversity and abundance is comparable to relevant rehabilitation monitoring reference sites. ▪ Pests do not occur in substantial numbers or visibly affect the development of native plant species.

4. Provide revised completion criteria for each performance indicator. The completion criteria must provide a clear definition of successful rehabilitation for each domain at the mine site in the form of a set of measurable benchmarks against which the rehabilitation indicators can be compared to determine whether the objectives are being met. At least one completion criterion must be developed for each indicator. Example indicators are provided in Appendix A of the Rehabilitation requirements for mining resource activities guideline.

Revised completion criteria have been developed for each rehabilitation objective and performance indicator. These are provided in Table 4-3.

5. Include progressive rehabilitation completion criteria for each mine domain. Include progressive rehabilitation mapping and scheduling at 5-year intervals.

The Project would be progressively rehabilitated to achieve the rehabilitation objectives established for each domain (Table 4-1). As described in Table 4-3, the progress of the rehabilitation would be monitored against indicators, and ultimately against completion criteria to demonstrate successful rehabilitation of the Project.

Progressive rehabilitation snapshots of the Project at five yearly intervals are provided in Appendix D. These areas of progressive rehabilitation show the parts of the rehabilitation domains that have reached their ultimate profile and where rehabilitation activities have commenced.

Table 4-4 presents the indicative progressive rehabilitation schedule.

Table 4-4
Indicative Progressive Rehabilitation Schedule

Year	Rehabilitation Domain (ha)					
	Waste Rock Emplacements	Final Voids	Infrastructure Areas	Water Management Infrastructure	ILF Cells	Ripstone Creek Diversion
2027	625	0	0	0	0	0
2030	1,280	0	0	0	0	0
2035	2,203	0	0	0	0	0
2040	3,125	0	0	0	0	0
2045	4,115	0	0	0	0	0
2050	5,110	0	0	0	0	0
2055	5,700	0	0	0	0	0
2060	6,480	0	0	0	0	0
2065	7,300	0	0	0	0	0
2072	8,098	155	0	0	0	0
2078	8,500	155	0	0	0	0
2085	8,921	155	0	0	0	0
2092	9,330	155	0	0	0	0
2098	9,725	650	430	0	0	0
2100	9,955	1,105	4,120	570	145	26

Further description of the progressive rehabilitation process proposed by Pembroke is provided in Section 5 of Appendix D.

6. Include Ripstone Creek diversion as a mine domain and develop rehabilitation objectives, performance indicators and completion criteria for this domain as part of the project's Rehabilitation Strategy.

A new rehabilitation domain for the Ripstone Creek diversion has been added to the existing Project rehabilitation domains. The revised Project rehabilitation domains are described in Table 4-1 and shown on Figures 4-1a and 4-1b.

Rehabilitation objectives, performance indicators and completion criteria for the Ripstone Creek Diversion have been included in Table 4-3.

7. Describe how final voids will achieve a sustainable post-mining land use, including the suitability of final voids as wildlife habitat, taking into consideration the anticipated increase in salinity of the void waterbodies and accessibility to native fauna.

The response to Item 2 above provides a description of how the final voids will achieve a sustainable post-mining land use, including the suitability of final voids as wildlife habitat, taking into consideration the anticipated increase in salinity of the void waterbodies and accessibility to native fauna. In particular, Table 4-2 outlines how the final voids will provide native fauna habitat resources.

8. Clearly set out rehabilitation timeframes for all disturbed areas noting that planting should occur within 3 months (no longer than 6 months) of the completion of landform surface preparation.

Section 5 of Appendix D states (emphasis added):

> *…*
>
> *Unless in declared drought conditions, after the placement of growth media on profiled landforms, each domain would be revegetated in accordance with the nominated post-mining land use* within six months of the growth media development phase being completed.

Further detailed description of progressive rehabilitation proposed by Pembroke is provided in Section 5 of Appendix D.