

4. Rehabilitation Objectives and Rehabilitation Completion Criteria

4.1 Rehabilitation Objectives and Rehabilitation Completion Criteria

Table 12 presents the rehabilitation objectives and rehabilitation completion criteria for individual final land use domains at the Mine Site. Final land use domains are shown on **Figure 7** and current Mining Domains are shown on **Figure 8**.

4.2 Rehabilitation Objectives and Rehabilitation Completion Criteria – Stakeholder Consultation

Table 11 presents a summary of consultation undertaken with relevant stakeholders with regards to the rehabilitation objectives, rehabilitation completion criteria and proposed final land uses and landforms presented in this Plan. This table will be updated with each revision to this Plan to include details of further consultation with relevant and interested stakeholders.

Table 11
Community Consultation Activities

Page 1 of 2

Stakeholder	Consultation Activities
Bogan Shire Council	<ul style="list-style-type: none"> Form of Consultation: Letter (email transmission).¹ Date: XX Matters Subject to Consultation: Rehabilitation Objectives and Rehabilitation Completion Criteria, and Final Land Use Domain Plans. Outcomes: XX.
Heritage NSW	<ul style="list-style-type: none"> Form of Consultation: Letter (email transmission).¹ Date: 30 November 2022. Matters Subject to Consultation: Rehabilitation Objectives and Rehabilitation Completion Criteria, and Final Land Use Domain Plans. Outcomes: Response received 5 December 2022. No comments provided. Request to ensure consultation regarding heritage is maintained where relevant.
NSW Biodiversity, Conservation and Science Directorate	<ul style="list-style-type: none"> Form of Consultation: Letter (email transmission).¹ Date: 30 November 2022. Matters Subject to Consultation: Rehabilitation Objectives and Rehabilitation Completion Criteria, and Final Land Use Domain Plans. Outcomes: Response received 5 December 2022. No comments or actions required.

Table 11 (Cont'd)
Community Consultation Activities

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Stakeholder	Consultation Activities
NSW DPE Water	<ul style="list-style-type: none"> • Form of Consultation: Letter (email transmission).¹ • Date: 30 November 2022. • Matters Subject to Consultation: Rehabilitation Objectives and Rehabilitation Completion Criteria, and Final Land Use Domain Plans. • Outcomes: XX
Nyngan Local Aboriginal Land Council	<ul style="list-style-type: none"> • Form of Consultation: Letter (email transmission).¹ • Date: 30 November 2022. • Matters Subject to Consultation: Rehabilitation Objectives and Rehabilitation Completion Criteria, and Final Land Use Domain Plans. • Outcomes: Response received 21 December 2022. No actions required. General comment to ensure consideration of <i>Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales</i> (NSW DECCW 2010)
Crown Lands	<ul style="list-style-type: none"> • Form of Consultation: Letter (email transmission).¹ • Date: 30 November 2022. • Matters Subject to Consultation: Rehabilitation Objectives and Rehabilitation Completion Criteria, and Final Land Use Domain Plans. • Outcomes: Response received 10 January 2023. No comments or actions required.
<p>Note 1: An example of this consultation letter is provided as Appendix XX</p>	

Table 12
Proposed Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria

Reference	Proposed Rehabilitation Objective	Indicator	Proposed Rehabilitation Completion Criteria	Validation Method
Final Land Use Domain Infrastructure Area Mining Domain Infrastructure Area Spatial Reference ¹ 11	Decommissioning Phase			
	All infrastructure and services not required for the final land use are removed.	Presence of services	All relevant services disconnected.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified).
		Presence of Infrastructure	All relevant infrastructure removed.	
	Domain is free from hazardous materials and contaminants.	Presence of contaminated land	Contaminated land identified and remediated. Assessment indicates contamination within established NEPM criteria (applicable to final land use).	Contamination report prepared by qualified person following decommissioning with follow up validation testing, as required.
		Presence of hazardous materials.	All hazardous materials removed.	Assessment, identification and removal of hazardous materials (such as asbestos, radiation devices, chemicals, etc). Documented report by suitably qualified person verifying all materials removed.
		Presence of waste	All rubbish and waste materials are removed from site or disposed of in areas designated in this plan.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified). Waste tracking documentation for required waste streams removed from site.
	Landform Establishment Phase			
	Roads/tracks to be retained for a lawful final land use reduced in width / size to that suitable for final land use.	Retained access road is in suitable condition.	Roads not required for final land use rehabilitated unless specified to be retained.	Single occurrence relinquishment inspection and report, including photographs and post closure plans
			Road to be retained are reduced in width to 4m suitable for final land use.	
	Free draining, stable and permanent landform established and suitable for a lawful final land use.	Visual evidence of erosion.	Erosion within the landscape is not limiting final land use. Erosion does not exceed the natural erosion rate.	Visual inspections undertaken and documented on a quarterly basis until site relinquishment. Records of any required corrective actions undertaken. Visual inspections undertaken following significant rainfall events. (i.e. ≥25mm of rainfall within 24 hours).

Table 12 (Cont'd)
Proposed Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria

Reference	Proposed Rehabilitation Objective	Indicator	Proposed Rehabilitation Completion Criteria	Validation Method
Rehabilitation Completion / Relinquishment Phase				
	Relinquish lease and return of rehabilitation security.	Demonstrated compliance with all performance indicators.	Demonstrated compliance with all completion criteria.	Relinquishment report prepared by suitably qualified or experienced person(s).
Final Land Use Domain				
Water Storage Area	Decommissioning Phase			
	All infrastructure not suitable for lawful final land use will be removed.	Presence of infrastructure.	All infrastructure not required for final land use removed.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified).
Mining Domain	Contamination is not limiting final land use.	Presence of contaminated land.	Contaminated land identified and remediated. Assessment indicates contamination within established NEPM criteria (applicable to final land use).	Contamination report prepared by qualified person following decommissioning with follow up validation testing, as required.
	Landform Establishment Phase			
Water Management Area – Clean Water, Water Management Area – Contaminated Water	Retained water management structures are stable and permanent overflow drainage is constructed.	Presence of suitable water management structures.	Water management structures are capable of retaining and conveying water without causing pollution.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified).
		Maintenance requirements (cost and frequency of works).	After 5 years maintenance levels for retained water management structures are commensurate with maintenance requirements for farm dams.	Review of dam maintenance recorded in annual reporting and comparison against local farm dam maintenance requirements (determined through interview with local landholders).
	Retained water management structures are not a source of pollution.	Domain is non-polluting.	Monitoring of water discharged from the Mine Site indicates that water quality is suitable for final land use through compliance with the ANZECC (2000) trigger values for slightly-moderately disturbed ecosystems or is consistent with ambient water quality.	Water quality testing, as per the <i>Water Management Plan 2016 (or its latest version)</i> , occurring monthly during and immediately following operations with frequency to be reduced progressively post-closure. Comparison (and documentation) of results against completion criteria
Rehabilitation Completion / Relinquishment Phase				
	Relinquish lease and return of rehabilitation security.	Demonstrated compliance with all performance indicators.	Demonstrated compliance with all completion criteria.	Relinquishment report prepared by suitably qualified or experienced person(s).

Table 12 (Cont'd)
Proposed Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria

Reference	Proposed Rehabilitation Objective	Indicator	Proposed Rehabilitation Completion Criteria	Validation Method	
Final Land Use Domain Native Ecosystem Area	Decommissioning Phase				
	All infrastructure not suitable for lawful final land use will be removed and domain made safe	Presence of infrastructure.	All exposed pipework and associated infrastructure removed, where it is safe to do so.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified).	
Mining Domain Tailings Storage Facility	Contamination is not limiting final land use.	Presence of waste.	All rubbish and waste materials are removed from site or disposed of in areas designated within this Plan.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning. Waste tracking documentation for required waste streams removed from site.	
Spatial Reference¹ A2	Landform Establishment Phase				
	Free-draining, stable and non-polluting landform is established.	Landform is non-polluting.	All runoff is diverted towards a southern spillway to be constructed at the southern perimeter of the Tailings Storage Facility. No pooling of water on upper surface of TSF is observed. Water management structures in place to limit erosion potential and pooling of water of the surface.	Landform as presented in as constructed (as built) survey plans is consistent with engineering design specifications.	
			Construction of overlying store and release cover of TSF with appropriate geochemical and geotechnical composition of surface materials for final land use.		The surface of the TSF is covered with approximately 400mm NAF waste rock and profiled to be water shedding. TSF is capped in accordance with engineered design specifications ¹ .
			Landform suitable for growth media establishment.		Tailings Storage Facility embankment approximately to 19m in height, in accordance with the approved design.
	Tailings Storage Facility would remain geotechnically stable post-closure.	Relinquishment inspection and report, including photographs, prepared by a qualified person, during development of embankments and placement of capping layers.			

¹ In preparation, refer Section XX.

Table 12 (Cont'd)
Proposed Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria

Reference	Proposed Rehabilitation Objective	Indicator	Proposed Rehabilitation Completion Criteria	Validation Method
<i>Growth Medium Development Phase</i>				
	Establish soil / growing medium suitable for grassland establishment.	Growth medium depth.	Minimum growth medium depth of 100mm spread over domain.	Photographs included in a relinquishment report following growth medium spreading.
		Key soil characteristics.	Analysis of growth medium indicates suitability for optimum vegetation growth of target communities. Satisfaction of the following parameters ² . <ul style="list-style-type: none"> • pH between 5.6 and 7.3 • Organic matter levels at 4.5% • Available Phosphorous is 50mg/kg Or, analysis of representative soil samples indicates these parameter are within 20% of analogue sites.	Soil testing program and report, undertaken every year (or as specified by soil scientist) as part of regular rehabilitation revegetation reporting, until criteria achieved.
<i>Ecosystem and Land Use Establishment and Development Phase</i>				
	Soils, hydrology, and shallow-rooted grassland ecosystem has established with maintenance needs no greater than those of surrounding, non-mine disturbed land.	Vegetation establishment.	Revegetation monitoring reports confirm that the mix of species spread/planted in revegetated areas can provide a minimum of 50% perennial ground cover and is capable of supporting the store and release cover system	Monitoring of revegetation success will involve a combination of quarterly visual assessments of plant establishment, groundcover and erosion by site personnel.
		Vegetation is self-sustaining	Revegetation monitoring reports confirm that revegetated areas achieve the following vegetation community characteristics ² . <ul style="list-style-type: none"> • Landscape function analysis indices for landscape organisation, stability, infiltration and nutrient recycling are within 25% of analogue grassland sites or consistently trending towards them. • Perennial plant cover is at a minimum of 50% to support store and release function of landform cover. 	Rehabilitation monitoring and reporting prepared by a suitably qualified person on rehabilitation condition, with results reported on in the Annual Rehabilitation Report, every year and for a minimum of 5 years post-closure or otherwise until site relinquishment.

² Primary performance indicators have been established through previous rehabilitation monitoring and sampling at analogue sites. See DnA Environmental 2020 Rehabilitation Monitoring Report. Secondary performance indicators are monitored to inform remediation requirements. See section XXXX for more information.

Table 12 (Cont'd)
Proposed Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria

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Reference	Proposed Rehabilitation Objective	Indicator	Proposed Rehabilitation Completion Criteria	Validation Method
		Vegetation is self-sustaining (Cont'd)	<ul style="list-style-type: none"> The presence of reproductive structures provides evidence that the ecosystem is maturing, capable of recruitment and is self-sustaining 	
	Vegetation dominated by shallow rooted grassland species.	Presence of weeds	Foliage cover of non-native and non-target species (weeds) is equivalent to surrounding vegetation / analogue sites not disturbed by mining activities or impacting rehabilitated area.	Biannual weed inspection report (and subsequent control program, if required) included in annual rehabilitation revegetation reporting.
		Presence of domestic grazing animals or pest species	Access by domestic grazing animals is limited to ensure only controlled grazing may occur in rehabilitated area. Feral and native animal control programs implemented. Pest species actively managed in consultation with neighbours.	Annual pest species inspection report (and subsequent control program, if required) included in annual rehabilitation revegetation reporting.
Rehabilitation Completion / Relinquishment Phase				
	Relinquish lease and return of rehabilitation security.	Demonstrated compliance with all performance indicators.	Demonstrated compliance with all completion criteria.	Relinquishment report prepared by suitably qualified or experienced person(s).

Table 12 (Cont'd)
Proposed Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria

Reference	Proposed Rehabilitation Objective	Indicator	Proposed Rehabilitation Completion Criteria	Validation Method
Final Land Use Domain				
Decommissioning Phase				
Agricultural Area – Grazing	All infrastructure not suitable for lawful final land use will be removed and domain made safe	Presence of infrastructure.	All exposed pipework and associated infrastructure removed, where it is safe to do so.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified).
Mining Domain Infrastructure Area, Water Management Area – Clean Water, Water Management Area – Contaminated Water, Overburden Emplacement Area, Mining-related Disturbance Area, Topsoil Stockpile Area, Landfill Area	Contamination is not limiting final land use.	Presence of waste.	All rubbish and waste materials are removed from site or disposed of in areas designated in this plan.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified). Waste tracking documentation for required waste streams removed from site.
		Presence of contaminated land.	Contaminated land identified and remediated. Assessment indicates contamination within established NEPM criteria (applicable to final land use).	Contamination report prepared by qualified person following decommissioning with follow up validation testing, as required.
Landform Establishment Phase				
Spatial Reference¹ B1, B3, B8a, B8b, B8c	Free-draining, stable and non-polluting landform is established.	Landform suitable for growth media application.	Landform profiled to be consistent with final land use and surrounding landscape.	Single occurrence relinquishment inspection and report, including photographs (of rehabilitated landforms and surrounding landscapes), prepared by a qualified person, following decommissioning (unless follow up actions identified).
		Presence of stockpiled material.	All stockpiled material used in rehabilitation activities, where feasible, or placed within Tailings Storage Facility, and surface appropriately profiled.	
		Construction of final landform	Landform established to integrate with the surrounding topography / cropping land. Erosion and sediment controls are installed and operating effectively.	

Table 12 (Cont'd)
Proposed Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria

Reference	Proposed Rehabilitation Objective	Indicator	Proposed Rehabilitation Completion Criteria	Validation Method
<i>Growth Medium Development Phase</i>				
	Establish soil / growing medium suitable for minor grazing use.	Compacted surfaces.	Compacted surfaces deep ripped along contour.	Photographs included in a relinquishment report following deep ripping.
		Growth medium depth.	Minimum growth medium depth of 100mm spread over domain.	Photographs included in a relinquishment report following growth medium spreading.
		Key soil characteristics.	Analysis of growth medium indicates suitability for optimum vegetation growth of target communities. Satisfaction of the following primary performance criteria ³ . <ul style="list-style-type: none"> pH between 5.6 and 7.3 Organic matter levels at 4.5% Available Phosphorous is 50mg/kg Or, analysis of representative soil samples indicates these parameter are within 20% of analogue sites.	Photographs included in a relinquishment report following growth medium spreading annually until site relinquishment. Soil testing program and report, undertaken every year (or as specified by soil scientist) as part of regular rehabilitation revegetation reporting, until criteria achieved.
<i>Ecosystem and Land Use Establishment and Development Phase</i>				
	Establishment of vegetation communities with a species composition conducive to grazing land use.	Revegetation species mix applied in accordance with species listed in Table 19 .	Revegetation monitoring reports confirm that revegetated areas achieve the following vegetation community characteristics ³ . <ul style="list-style-type: none"> Landscape function analysis indices for stability and landscape organisation are within 25% of the woodland analogue sites or are trending in that direction Diversity of species is within 25% of woodland analogue sites. The composition of species comprising the vegetation community is within 25% of analogue sites (ecosystem composition). The density of species is within 25% of the woodland analogue sites. 	Monitoring of revegetation success will involve a combination of quarterly visual assessments of groundcover, biomass and Landscape Function Analysis completed by site personnel. Rehabilitation revegetation reporting prepared by a suitably qualified person on rehabilitation condition, with results reported on in the Annual Rehabilitation Report, every year and for a minimum of 5 years post-closure or otherwise until site relinquishment.

³ Primary performance indicators have been established through previous rehabilitation monitoring and sampling at analogue sites. See DnA Environmental 2020 Rehabilitation Monitoring Report. Secondary performance indicators are monitored to inform remediation requirements. See section 6.2.5 for more information.

Table 12 (Cont'd)
Proposed Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria

Reference	Proposed Rehabilitation Objective	Indicator	Proposed Rehabilitation Completion Criteria	Validation Method
	Establishment of vegetation communities with a species composition conducive to grazing land use. (Cont'd)	Vegetation is self-sustaining	<p>Revegetation monitoring reports confirm that revegetated areas achieve the following vegetation community characteristics³.</p> <ul style="list-style-type: none"> • Landscape function analysis indices for infiltration and nutrient recycling are within 25% of the woodland analogue sites or trending in that direction. • Perennial plant cover, total groundcover and groundcover diversity are within 25% of the woodland analogue sites • Vegetation structure, composition and tree density and diversity are within 25% of the woodland analogue sites • The presence of reproductive structures such as buds, flowers or fruit provides evidence that the ecosystem is maturing, capable of recruitment and can provide habitat resources comparable to the local remnant vegetation. 	
		Presence of weeds	Rehabilitation monitoring of rehabilitation area confirms the diversity and foliage cover of non-native and non-target species (weeds) is equivalent to or less than surrounding vegetation / analogue sites not disturbed by mining activities or impacting rehabilitated area.	Biannual weed inspection report (and subsequent control program, if required) included in annual rehabilitation revegetation reporting.
		Presence of domestic grazing animals or pest species	<p>Domestic grazing animals are excluded from the rehabilitation areas via protective fencing.</p> <p>Feral and native animal control programs implemented in consultation with neighbours.</p> <p>Revegetation monitoring reports confirm grazing pressures are consistent with analogue sites not disturbed by mining. Monitoring confirms that, after 2 years pest species and abundance consistent with analogue sites.</p>	Annual pest species inspection report (and subsequent control program, if required) included in annual rehabilitation revegetation reporting.

Table 12 (Cont'd)
Proposed Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria

Reference	Proposed Rehabilitation Objective	Indicator	Proposed Rehabilitation Completion Criteria	Validation Method
	Land capability similar to pre-mining capability (Class V or Class VI).	Land capability	Land capability, assessed in accordance with OEH 2012, of Class V or Class VI.	Assessment report, included in relinquishment report, prepared by suitably qualified consultant.
		Agricultural productivity.	Agricultural productivity trending towards analogue sites and consistent with Land Capability Class established in OEH, 2012.	Single occurrence production report, prepared a suitable independent person, post closure (unless further activities required).
	Rehabilitation Completion / Relinquishment Phase			
	Relinquish lease and return of rehabilitation security.	Demonstrated compliance with all performance indicators.	Demonstrated compliance with all completion criteria.	Relinquishment report prepared by suitably qualified or experienced person(s).
Final Land Use Domain Final Void Area Mining Domain Void Spatial Reference¹ J5	Decommissioning Phase			
	All infrastructure not suitable for lawful final land use will be removed.	Presence of infrastructure	All infrastructure removed.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified).
		Presence of waste.	All rubbish and waste materials are removed from site or disposed of in areas designated in this plan.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified). Waste tracking documentation for required waste streams removed from site.
	Landform Establishment Phase			
Stable and permanent landform established.	Geotechnical stability of terminal benches.	Geotechnical assessment, by suitability qualified geotechnical engineer, based on site specific review, determines that the retained slopes are not likely to actively erode or 'slip' to an extent requiring further earthworks and profiling.	Single occurrence geotechnical review / report plan(s) prepared by a suitability qualified geotechnical engineer and photographs included in relinquishment report, following completion of final landform establishment (unless further earthworks required).	

Table 12 (Cont'd)
Proposed Rehabilitation Objectives and Proposed Rehabilitation Completion Criteria

Reference	Proposed Rehabilitation Objective	Indicator	Proposed Rehabilitation Completion Criteria	Validation Method
	Safe landform established.	Access to box cut.	Access to open cut, portal and decline sealed.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified).
		Presence of safety bunds.	Final void perimeter safety bund and fencing constructed to provide appropriate exclusion of access.	Visual inspection completed by site personnel, as part of regular site operation. Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified).
	Minimisation of final void catchments.	Presence of water management infrastructure	Final void perimeter safety bund and other water diversion structures constructed to minimise the catchment entering the void.	Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified).
	Non-polluting landform established.	Residual void does not risk serious environmental harm to land, surface waters groundwater, other than the environmental harm constituted by the existence of the residual void itself.	Surrounding landholders ability to use groundwater resources is not compromised.	Monthly water quality testing, as per the <i>Water Management Plan 2016</i> , during and immediately following operations with frequency to be reduced progressively post-closure based on performance.
			Safety bunding of the final void limits ingress of clean water to the void.	Visual inspection completed by site personnel, as part of regular site operation. Single occurrence relinquishment inspection and report, including photographs, following decommissioning (unless follow up actions are identified).
	Rehabilitation Completion / Relinquishment Phase			
	Relinquish lease and return of rehabilitation security.	Demonstrated compliance with all performance indicators.	Demonstrated compliance with all completion criteria.	Relinquishment report prepared by suitably qualified or experienced person(s).

Note 1: Refer to **Plan 1**

5. Final Landform and Rehabilitation Plan

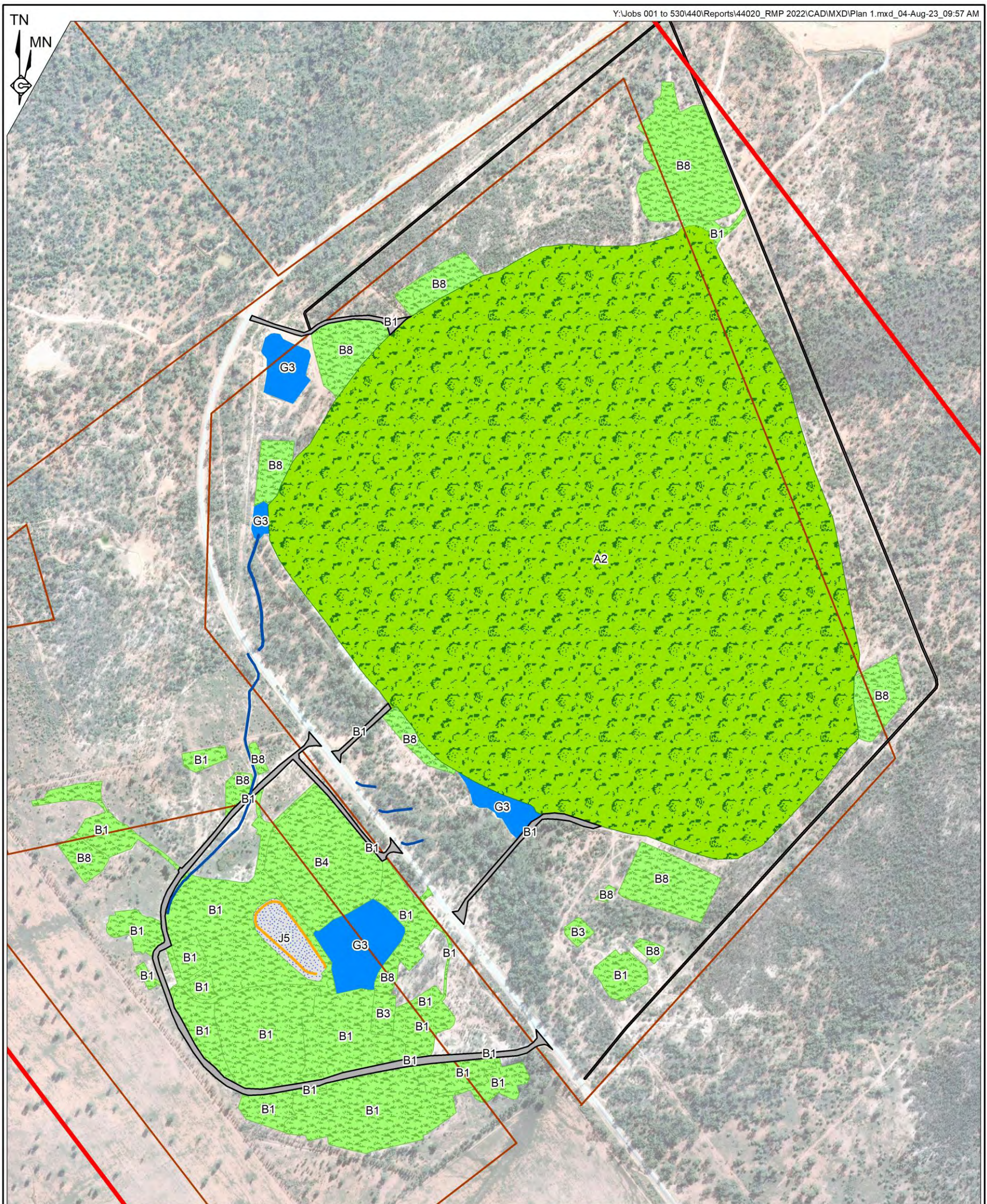
5.1 Final Landform and Rehabilitation Plan

Plan 1 presents the final landform features for the Mine Site and **Plan 2** presents the final landform contours for the Mine Site.

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REFERENCE

- Project Approval Boundary / ML1544

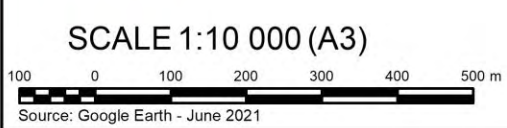
Final Landuse Domains

- Agricultural – Grazing
- Final Void
- Native Ecosystem
- Water Storage (Excluding Final Void)

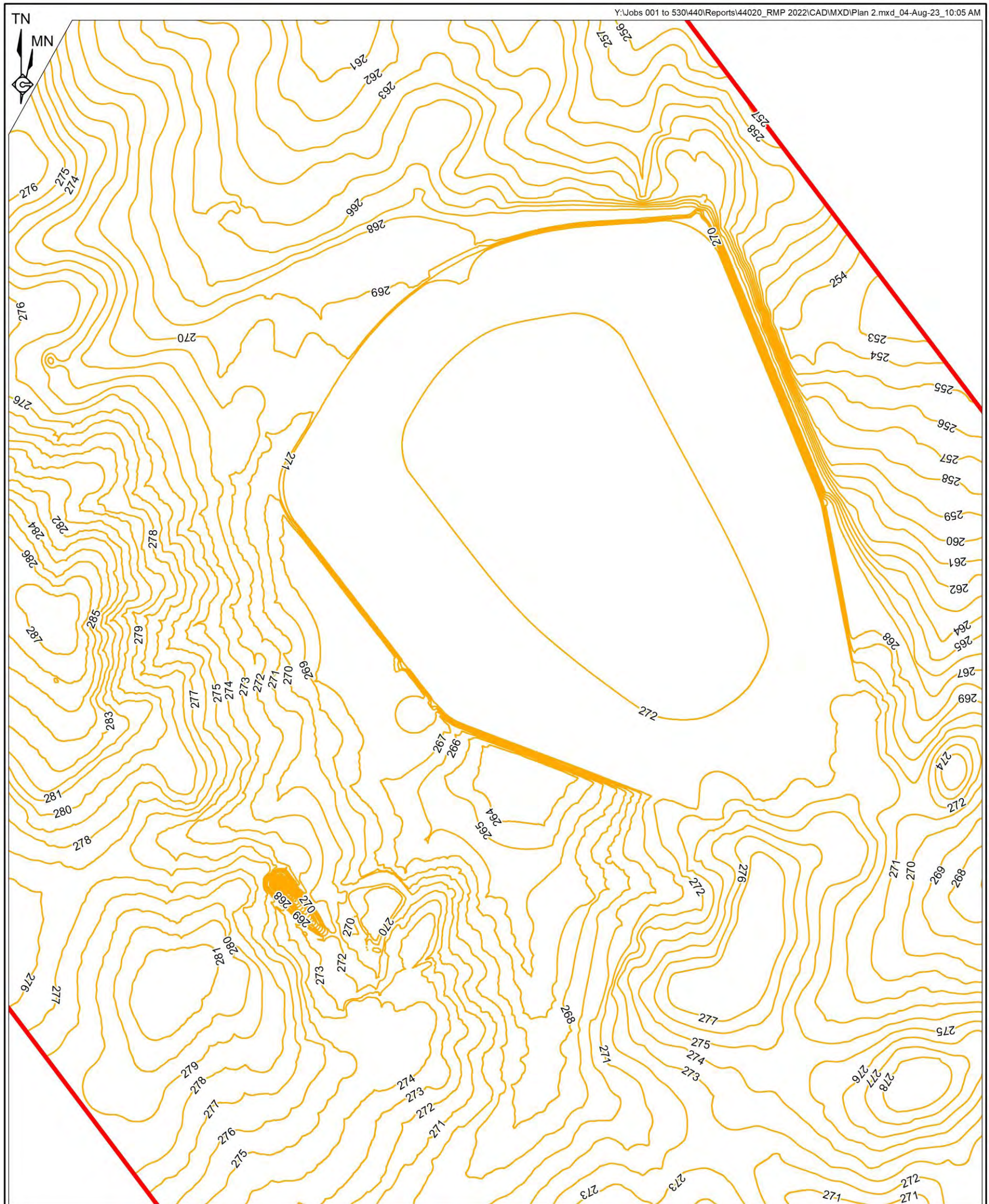
Final Landform Features

- Road
- Drain
- Safety Bund
- Fence

Mine Name	Tritton Copper Mine
Plan Name	Plan 1 Final Landuse
Anticipated Year of Relinquishment	2039
Date Plan Created	4 August 2023
Data Theme Submission ID Numbers	

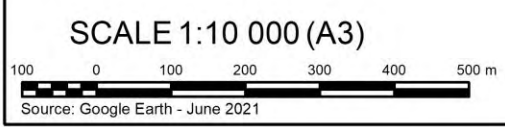


Plan 1
FINAL LANDFORM FEATURES



REFERENCE	
—	Project Approval Boundary
—	Final Landform Contour (mAHd) (Interval = 1m)

Mine Name	Tritton Copper Mine
Plan Name	Plan 2 Final Landform Contours
Anticipated Year of Relinquishment	2039
Date Plan Created	4 August 2023
Data Theme Submission ID Numbers	



Plan 2
FINAL LANDFORM CONTOURS