RioTinto

Conceptual Mine Closure Plan

Winu Project

Winu Services Pty Ltd

June 2026

RioTinto

Document Number: XXXXX

Status	Name	Position	Signature
Final	Edmond Meka	Acting Project Director	

Revision	Date	Comments	Originator	Reviewed	Approved
A	31 January 2024	Draft for stakeholder comment	PW	GD and CE	Jaco Hugo
B	23 March 2025	Draft for stakeholder comment	J Heyes	GD and CE	
C	20 August 2025	Draft for stakeholder comment	J Heyes	CE and BH	
1	17 October 2025	For ERD Submission	J Heyes	CE and BH	Damian Rogers
2	26 June 2026	Response to ERD comments	J Heyes		

Corporate endorsement:

I hereby certify that to the best of my knowledge, the information within this Winu Closure Plan is true and correct and addresses the relevant requirements of the *Statutory Guidelines for Mine Closure Plans* approved by the Director General of Mines, Energy, Industry Regulation and Safety.

Edmond Meka

Acting Project Director - Winu

Date: XXXXX

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Acknowledgement of Country

Rio Tinto acknowledges the Nyangumarta People and the Martu People as the Traditional Custodians of the Country upon which the Winu is located.

We pay our respects to their Elders past and present.

Rio Tinto is committed to working in collaboration with the Nyangumarta People and Martu People and their representatives towards a closure strategy that minimises impacts to the environment, social, and cultural heritage values.

EXECUTIVE SUMMARY

Winu Services Pty Ltd (the Proponent) plans to develop a new copper-gold open cut mine, known as the Winu Project. It is approximately 300km south of Broome and 320km east of Port Hedland in the Northern Pilbara region of Western Australia (WA).

The Proponent is a wholly owned subsidiary of Rio Tinto Limited (Rio Tinto). The key contact person for this document is:

- Glen Doherty
- Manager Regulatory Engagement and Approvals
- Telephone: 08 9327 2000
- Email: glen.doherty@riotinto.com

The Project will extend over the Nyangumarta People's and Martu People's Native Title Determination Areas. The Proponent recognises the Traditional Owners' intrinsic and continuous connection to Country, culture and community of both the land and waters on which the Winu Project is located. the Proponent respects and honours the rights and obligations that the Nyangumarta People and Martu People have to Ngurra by caring for Country. The Proponent are committed to developing the Winu Project in a genuine partnership that is open, honest, culturally appropriate and provides benefits to all.

Through meaningful consultation, co-development and co-management throughout the development, operation, and closure of the Winu Project, the Proponent will aim to minimise impact to Country, intangible and tangible culture, and support the economic, social aspirations and opportunities for current and future generations of Nyangumarta People and Martu People.

Proactive planning for the closure of a site is a critical business process that demonstrates the Proponent's commitment to sustainable development. The primary purpose of this conceptual mine closure plan is to present how the Project would be decommissioned, closed, and rehabilitated in an environmentally acceptable manner consistent with post-mining land uses without unacceptable liability to the State or other stakeholders. A secondary purpose of this closure plan is to support the Winu Project Environmental Protection Act 1986 (WA) Environmental Review Document and other regulatory approval requirements ahead of construction and operation of the proposed Winu Project.

The Winu Project Mine Closure Plan (MCP) has been prepared to:

- Support an application under Part IV of the *Environmental Protection Act 1986 (WA)* (EPA, 1986) for development of the Winu Project
- Reflect the current knowledge and requirements for closure of the proposed Winu Project
- Propose closure objectives and potential next land use for the Winu site
- Project and identify future requirements to continue to progress towards a planned and managed closure of the site
- Meet the internal requirements of the Rio Tinto Closure Standard (Rio Tinto, 2021a), the Department of Energy Mines, Industry Regulation and Safety (DEMIRS), now the Department of Mines, Petroleum and Exploration (DMPE) *Mine Closure Plan Guidance* (Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), 2025a) and other mining industry guidelines
- Inform the development of closure cost estimates.

Scope

This MCP scope covers above and below water table mining operations, waste rock landforms, low grade stockpiles, ore processing facilities, Tailings Storage Facilities (TSFs), water infrastructure (dewatering and supply), and support facilities including accommodation camps; airstrips, non-process infrastructure, landfills, renewable energy, and linear infrastructure such as roads and transmission lines.

As noted in the DMPE Mine Closure Plan Guidance, the level of information presented is reflective of the current stage of mine development (i.e. planning and design/approvals). Notwithstanding, knowledge gaps relating to closure specific technical information are listed in this conceptual mine closure plan and will be refined/developed in future iterations.

Post Mining Land Use

The underlying land use of the Winu Project is Unallocated Crown Land (UCL). The proposed post-mining land use assumes that the site will be rehabilitated to create a safe, stable, and non-polluting landscape revegetated with self-sustaining native species, to maintain environmental and cultural heritage values and ensure the site does not adversely impact the surrounding land use.

Due to the nature of the mining activity undertaken, the post closure landscape will include permanent structures of waste rock landform, TSFs and a pit void which will revert to UCL. Land use on these structures will be limited to protect the executed closure measures. The pit void will not be backfilled, with groundwater levels recovering to create a pit lake, approximately 100 m below the natural surface. The post-mining land use will be reviewed and refined during operations and, prior to closure, in consultation with relevant stakeholders and updated progressively in future MCP reviews.

Closure Outcomes

The following closure outcomes have been drafted for the site:

Aspect	Winu ID	Rio Tinto Winu Closure Outcome
Physical and geochemical stability	C1	Constructed landforms are physically and geotechnically stable, have minimal erosion and support native revegetation and/or the post-mining land uses
	C2-A	Footprint of constructed landforms, cultural heritage sites and permanent infrastructure are located outside the potential zone of instability of pit voids
Landscape	C3	Constructed landforms are designed with consideration of visual amenity, cultural values and local topography
Geotechnical stability	C4	Constructed landforms are geochemically non-polluting
Land contamination	C5	All environmentally hazardous chemicals, rubbish and contaminating materials have been removed, treated, managed and/or disposed in a manner that does not preclude the post-mining land use
Surface water	C6-A	Water quality and altered surface water regimes do not have a detrimental impact on sensitive receptors and do not preclude the post-mining land use(s)
Groundwater	C7-A	Pit lakes do not have a detrimental impact on sensitive receptors or other water resources
	C8-A	Water quality and altered groundwater regimes do not have a detrimental impact on sensitive receptors and do not preclude the post-mining land use(s)
Flora and vegetation	C9	Rehabilitated land is consistent with agreed reference vegetation communities and/or with the post-mining land use
Fauna	C10	Rehabilitated land provides habitat for native fauna, indicative of the target ecosystem and/or post-mining land use

Ecosystem function	C11-A	Rehabilitated land has function and resilience indicative of the target ecosystem and/or post-mining land use
Physical safety	C12-A	The rehabilitated landscape is made safe to humans and animals as far practicable
		Not applicable
Infrastructure	C14-A	No infrastructure left in-situ, above 1m below ground level. Heavily reinforced concrete foundations associated with wind turbines, will be removed to ground level and capped with up to 1m of cover material to facilitate vegetation establishment with appropriate species.
Stakeholder engagement	C15-NS	Key stakeholders have been actively engaged regarding closure to ensure expectations are considered and met where practicable
Cultural heritage	C16-NS	Nyangumarta and Martu cultural heritage values have been preserved during closure implementation where practicable, in consultation with Traditional Owner representatives

These preliminary closure outcomes and associated completion criteria have been developed and will be further advanced and refined over the life of the mine, with input from stakeholder engagement and on-going data collection and trials and be used to guide operations management and proactive closure planning, including progressive closure activities.

Closure Risk Assessment and Management of Key Issues

Closure risk assessments have been developed and reviewed with internal stakeholders and subject matter experts throughout the study process to reflect current understanding and management of closure risks.

The risk assessment has been undertaken through two lenses, inherent risk (no controls in place), and residual risk (all controls in place). This approach demonstrates the importance of implementation of controls throughout the mine life to proactively manage closure risks.

The closure risk profile as assessed in September 2025 includes 20 risks, grouped into the following classes:

Risk Profiles	Low	Medium	High	Extreme
Inherent Risk	0	10	9	1
Residual Risk	3	16	1	0

Key closure risks are related to, post-closure safety, water quality, Traditional Owner expectations not being met, rehabilitation of waste landforms (WRL's and TSFs), including potentially acidic forming and erosive materials and completion criteria.

To manage closure risks, the following high level closure strategies will be implemented in accordance with As Low as Reasonably Practicable (ALARP) principles, more detail is provided in Section 6 – Closure risk assessment:

- Alignment with heritage and cultural management procedures to ensure significant cultural heritage and values are protected and an agreed post-mining land use is defined

- Stringent mineral waste management procedures (characterisation, planning, and execution) to ensure appropriate management of potentially acid forming (PAF) and erosive materials
- Rehabilitation of waste landforms (TSFs and WRLs), with design informed by waste characterisation, to promote long term stability and reduce risks associated with PAF, and/or erosive materials. This will include encapsulation of problematic waste types, and the application of appropriate covers
- Ongoing surface water and groundwater modelling to inform operations and closure planning design and execution, including adaptive management strategies
- Implementation of progressive rehabilitation (including trials) to promote revegetation establishment, stabilisation, and habitat development
- Monitoring of progressive rehabilitation to inform closure planning, closure outcomes and completion criteria development and refinement
- Monitoring and management of contaminated sites, in alignment with requirements of the *Contaminated Sites Act 2003*
- Removal of infrastructure up to 1 metre below ground level (mbgl) at closure, excluding the reinforced concrete foundations associated with the wind turbines
- Placement of closure safety bunds and removal of upper ramp section to manage risks associated with inadvertent public access post closure
- Closure specific ongoing engagement with internal and external stakeholders to ensure closure aspects and stakeholder input are considered and incorporated into life of mine and closure planning and decision-making processes.

Knowledge gaps have been identified through review of the closure risk assessment and knowledge base by internal and external subject matter experts. Closure risk actions have been recorded, with appropriate completion timeframes. Closure risk actions will be reviewed regularly, with progress recorded. Closure knowledge gaps will be updated during project development stages, into and through operations. Updates will be provided in the next version of the MCP, with the timing to be confirmed upon approval of the Mining Development and Closure Proposal.

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Abbreviations

Abbreviation	Description
ABA	Acid Base Accounting
ACS	Asset Closure Strategy
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
ALARP	As Low as Reasonably Practicable
AMD	Acid and Metalliferous Drainage
AMP S&MP	Winu AMD Management Strategy and Management Plan
ANC	Acid Neutralising Capacity
ANCOLD	Australian National Committee on Large Dams
ANFO	Ammonium Nitrate and Fuel Oil
ARD	Acid Rock Drainage
AREH	Asia Renewable Energy Hub
ASS	Acid Sulfate Soils
BC Act	*Biodiversity Conservation Act (WA) 2016*
BESS	Battery Energy Storage System
BGL	Below Ground Level
BoM	Bureau of Meteorology
BWT	Below Water Table
CIL	Carbon in Leach
CRCTiME	Cooperative Research Centre for Transformations in Mining Economies
CSP	Communities and Social Performance
CWD	Clean Water Dam
DAWE	Department of Agriculture, Water, and the Environment
DBCA	Department of Biodiversity, Conservation and Attractions
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DMIRS	Department of Mines, Industry Regulation and Safety
DMPE	Department of Mines, Petroleum and Exploration
DPIRD	Department of Primary Industries and Regional Developments
DPLH	Department of Planning, Lands and Heritage
DSI	Detailed Site Investigation
DWER	Department of Water and Environmental Regulation
EMS	Environmental Management System

EP Act	*Environmental Protection Act 1986*
EPA	Environmental Protection Authority
EPA Services	Environmental Protection Authority Services
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
FPIC	Free Prior Informed Consent
GARD Guide	Global Acid Rock Management Guidance document
GDE	Groundwater Dependent Ecosystem
GDV	Ground Dependent Vegetation
GIS	Geographic Information Systems
GISTM	Global Industry Standard for Tailings Management
GL	Gigalitres
GL/a	Gigalitres per annum
GWL	Groundwater Well Licence
HDSD	High-Density Slurry Deposition
HST	High Sulfur Tailings
HSU	Hydro Stratigraphic Units
IBRA	Interim Biogeographic Regionalisation for Australia
ICOLD	International Commission on Large Dams
ICMM	International Council on Mining and Metals
ICT	Information and Communications Technology
IPA	Indigenous Protected Areas
IMS	Information Management System
INAP	International Network for Acid Prevention
JYAC	Jamukurnu Yapalikurnu Aboriginal Corporation
KPIs	Key Performance Indicators
LAPs	Land Access Protocols
LEM	Landform Erosion Modelling
LLDPE	Linear Low-Density Polyethylene
LOM	Life of Mine
LST	Low Sulfur Tailings
mbgl	metres below ground level
MCP	Mine Closure Plan
mg/L	Milligrams per Litre
MIA	Mine and Infrastructure Area
Mining Act	*Mining Act 1978*
MLC	Mine Lake Consulting

Mm^3	Million Cubic Metres
mm/a	millimetres per annum
MNES	Matters of National Environmental Significance
MP	Mining Proposal
MRF	Material Recovery Facilities
MS	Ministerial Statement
Mt	Million tonnes
Mt/a	Million tonnes per annum
N/A	Not Applicable
NAF	Non-acid forming
NAG	Net Acid Generation
NT Act	*Native Title Act 1993*
NVCP	Native Vegetation Clearing Permit
NWAC	Nyangumarta Warrarn Aboriginal Corporation
NWIPA	Nyangumarta Warrarn Indigenous Protected Area
ORP	Oxidation Reduction Potential
P	Priority
p/a	Per annum
PAF	Potentially acid forming
PAF-LC	Potentially Acid Forming – Low Capacity
PCO	Present Closure Obligation
PEC	Priority Ecological Community
PMF	Probable Maximum Flood
PMLU	Post-Mining Land Uses
PMP	Probable Maximum Precipitation
PoW	Permits of Work
PSI	Preliminary Site Investigation
RAC	Road Access Corridor
RC	Reverse Circulation
RiWI	*Rights in Water and Irrigation Act 1914*
RL	Reduced Level
ROM	Run of Mine
RTC	Rio Tinto Copper
RTIO	Rio Tinto Iron Ore
RTX	Rio Tinto Exploration
SMART	Specific, Measurable, Actionable, Realistic and Time

SMM	Sumitomo Metal Mining
SMU	Soil Mapping Units
SPR	Source-Pathway-Receptor
SRE	Short-Range Endemic
SWMP	Surface Water Management Plan
TARPs	Trigger Action Response Plans
TBA	To Be Assessed/announced
TBC	To Be Confirmed
TDS	Total Dissolved Solids
TEC	Threatened Ecological Community
TO	Traditional Owner
TPC	Total Projected Cost of Closure
TSF	Tailings Storage Facilities
TSS	Total Suspended Solids
UCL	Unallocated Crown Land
UWA	University of Western Australia
VMO	Visual Management Objectives
VMR	Voice Mobile Radio
WA	Western Australia
WAM	Western Australian Museum
WEPP	Water Erosion Prediction Project (WEPP) model
WMP	Weed Management Plan
WRB	Winu Regional Borefields
WRL	Waste Rock Landform
WSPL	Winu Services Pty Ltd
ZoI	Zone of Instability

1. DESCRIPTION OF MINING OPERATION

1.1. Proponent information and location of operation

Winu Services Pty Ltd (the Proponent; WSPL) plans to develop a new copper-gold open cut mine, referred to as the Winu Project, approximately 300 km south of Broome and 320 km east of Port Hedland in the Northern Pilbara region of Western Australia (WA), as depicted in Figure 1-1. The Project will extend over the Nyangumarta People's and Martu People's Native Title Determination Areas.

Most of the region around the Proposal is Unallocated Crown Land (UCL).

The Project Areas are located within the boundaries of the Nyangumarta (WAD6281/1998) and Martu (WAD6110/1998) Native Title determination areas. Most of the Project Areas, including all active mining areas, occur within the Nyangumarta Native Title determination area and the Nyangumarta Warrarn Indigenous Protected Area (NWIPA). The land subject to the Martu Native Title determination area is limited to a section in the southwest of the Development Envelope, covering the location of the existing airstrip, proposed to be upgraded under this Proposal, as well as the Rimfire bore field.

A portion of the Road Access Corridor (RAC), close to the Great Northern Highway, is within the Wallal Downs pastoral lease. The Project Areas do not intersect any other pastoral leases, with the next closest, Warrawagine Station, approximately 100 km to the west.

The Great Northern Highway is the only sealed road in the region. The sparsely populated area hosts a small number of unsealed, single lane four-wheel drive tracks.

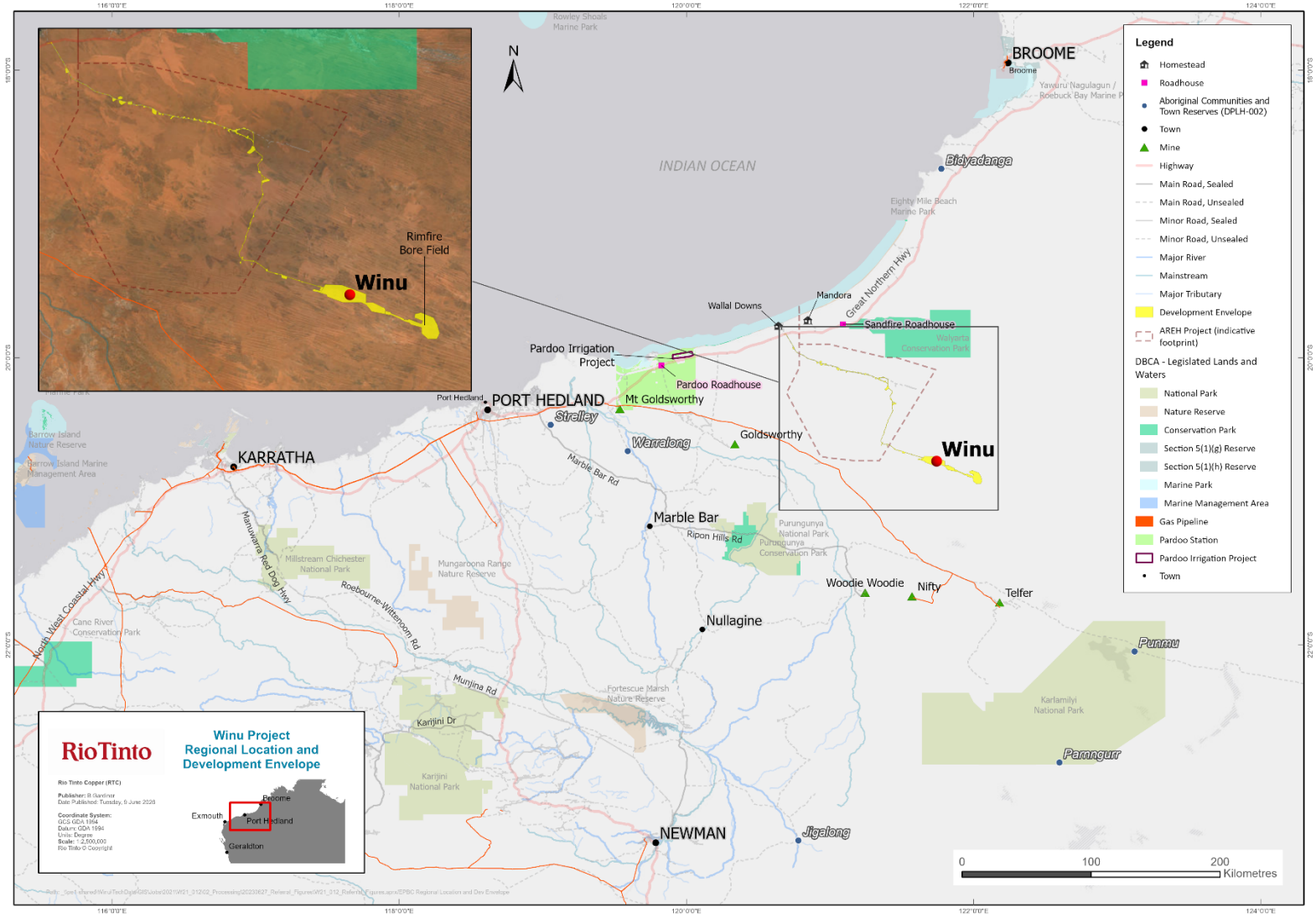


Figure 1-1: Winu Project Regional Location and Proposed Development Area

1.2. Scope of Mine Closure Plan

This closure plan has been prepared to support the Environmental Review Document (ERD) submitted to the Western Australian (WA) Environmental Protection Authority (EPA) for assessment of the Winu Project under Part IV of the *WA Environmental Protection Act 1986* (EP Act). This document is relevant for the Winu Project and subsequent approved Operations.

The Proponent has addressed the *Statutory Guidelines for Mine Closure Plans* (Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), 2025a) and the *Mine Closure Plan Guidance – How to prepare in accordance with Part 1 of the 'Statutory Guidelines for Mine Closure Plans* (Department of Mines, Industry Regulation and Safety (DMIRS), 2023) in the preparation of this document. The document details relevant background information, stakeholder consultation, post-mining land use, closure objectives and completion criteria, identification and management of closure risks and opportunities, and closure implementation.

This document is relevant for the Winu Project, inclusive of the mine, including mineral waste materials and management, processing facilities, associated supporting facilities and infrastructure within the Development Envelope. Refer to Section 1.8 for more information on the Project description.

1.3. Closure boundary and tenements

The Winu Project is located in the Yeneena Basin of the Paterson Province in the Shire of East Pilbara and the Shire of Broome in WA. The works proposed in this closure plan are within tenure issued under the *WA Mining Act 1978*.

The Winu Project is located within the tenements outlined in Table 1-1 and Figure 1-2.

Table 1-1: Winu Project Tenements

Tenement No.	Lease/Licence Type	Purpose
M45/1288 (Application)	Mining	Mining and Infrastructure Area
L45/476 (Granted)	Miscellaneous	Existing airstrip
L45/491 (Granted)	Miscellaneous	Access Road east of Camp
L45/494 (Granted)	Miscellaneous	Access Road to the existing airstrip from the mining lease
L45/548 (Granted)	Miscellaneous	Great Northern Highway and the initial western section of the Existing Access Road (section of the Nyangumarta Highway)
L45/549 (Granted)	Miscellaneous	Access Road and borrow pits - from Great Northern Highway end (section of the Nyangumarta Highway)
L45/550 (Granted)	Miscellaneous	Access Road diversion and borrow pits
L45/551 (Granted)	Miscellaneous	Access Road diversion and borrow pits
L45/552 (Granted)	Miscellaneous	Access Road and borrow pits – Wirlkirr Wirlkirr Road to mining lease
L45/559 (Application)	Miscellaneous	New airstrip - from the mining lease
L45/623 (Granted)	Miscellaneous	Hairpin Bend Access Road
L45/722 (Application)	Miscellaneous	Accommodation Village Location
L45/723 (Application)	Miscellaneous	Northern Monitoring Bores
L45/725 (Application)	Miscellaneous	Southern Access Road

L45/755 (Application)	Miscellaneous	Rimfire Borefield
L45/857 (Application)	Miscellaneous	Access Road Upgrade Fly Camp

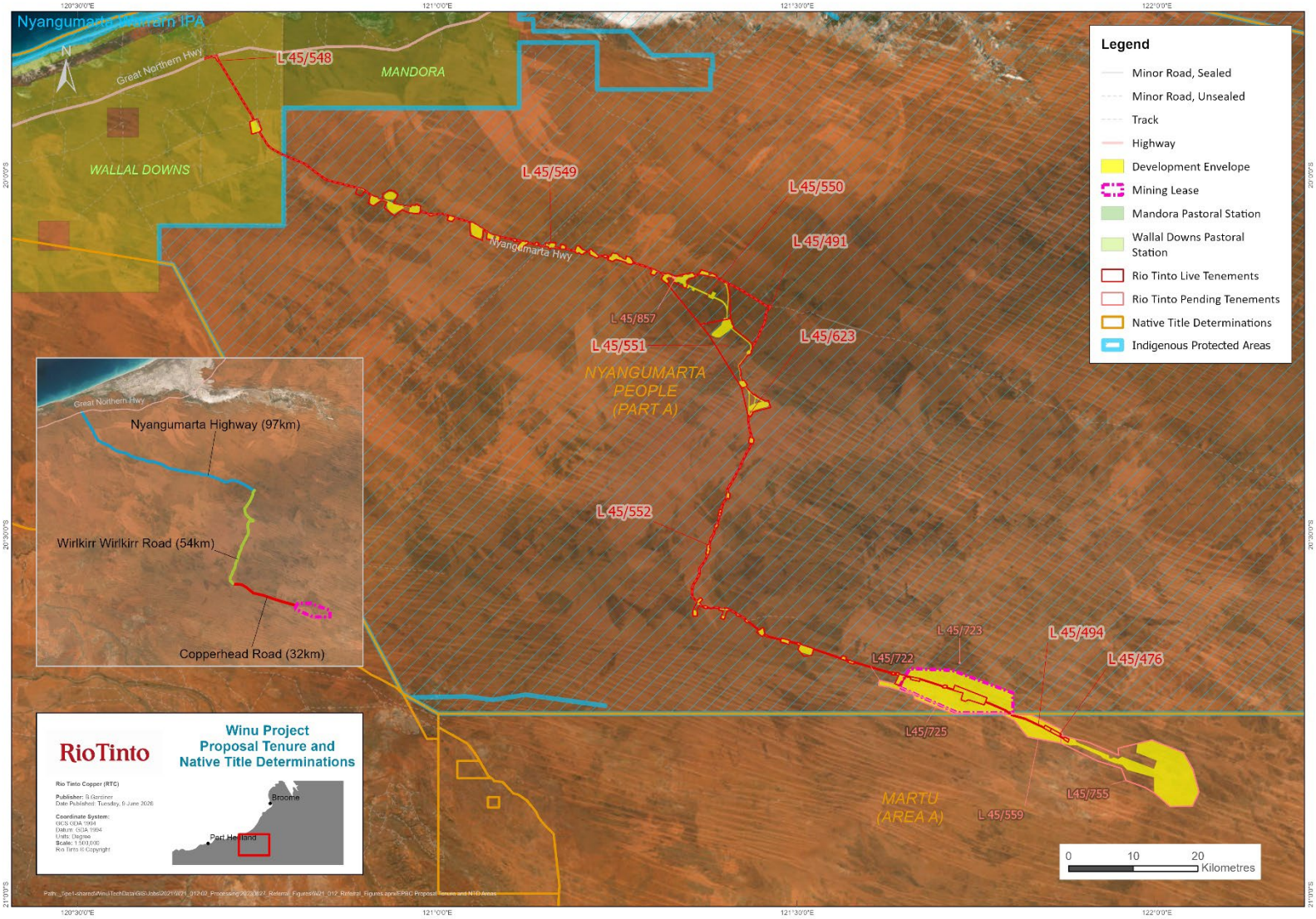


Figure 1-2: Proposed Tenure and Native Title Determinations

1.4. Closure vision

The closure vision for the Site is to rehabilitate and close mining activities in a manner that makes them physically safe for humans and animals, geotechnically stable, geochemically non-polluting/non-contaminating, and capable of sustaining defined post-mining land uses (PMLUs), with consideration for cultural values and without unacceptable liability to the State. To achieve this vision, specific closure outcomes and preliminary completion criteria are proposed in this MCP.

1.5. Closure strategy

The overarching closure strategy for the Site is to progressively rehabilitate and implement closure activities aligned with the agreed PMLUs, with the ultimate objective of relinquishing tenure to the State once closure outcomes and completion criteria have been met to the satisfaction of regulators and other key stakeholders.

To meet closure outcomes and manage closure risks, the following strategies will be implemented at the Winu Project:

- Rehabilitation of ex-pit waste rock landforms (WRLs), with design informed by waste characterisation, to ensure long term stability and minimise the risk of erosion
- Implementation of progressive rehabilitation to promote revegetation and habitat development
- Surface water and groundwater modelling to inform operations, closure planning and design and ensure no unacceptable impacts to sensitive receptors
- Rehabilitation monitoring of progressive rehabilitation to inform closure planning, closure outcomes and completion criteria development and refinement
- Ensure significant cultural heritage values are protected, and adequate post-mining land access is facilitated
- Design and placement of closure safety bunding to manage risks associated with inadvertent public access post-closure
- Removal of infrastructure above 1m below ground level at closure, except for the reinforced concrete foundations associated with the wind turbines
- Ongoing closure engagement with internal and external stakeholders to ensure technical and stakeholder input is considered and incorporated, where appropriate, into life of mine and closure planning and decision-making processes
- Contaminated sites assessment and remediation, where required.

1.6. Closure planning process

Closure planning at Rio Tinto is an iterative process integral to give effect to the closure vision for each operation. Closure planning commences during the planning phase of a greenfield project and is continually updated and refined during the operational phase. The detail of each MCP increases as the knowledge base develops. Closure plans are updated to account for changes resulting from:

- Amendments to the mine plan including pit designs and scheduling modifications
- Improvements of the site closure knowledge base (e.g. through daily activities, technical studies, research actions and progressive rehabilitation)
- New or amended regulation
- Changes to surrounding land uses
- Evolving stakeholder expectations.

Each update of the MCP brings Subject Matter Experts (SMEs) together to determine the status of current closure risks and opportunities, proposed changes, and opportunities to improve closure outcomes. Improvement actions are then assigned and included in the updated MCP.

A key output of closure planning is the development of a closure cost estimate. Closure provisions are subsequently raised on the balance sheet to account for the closure liability.

As part of the *Rio Tinto Closure Standard* (2021a) closure studies are required as the site, or a discreet area of the site suitable for partial closure, approaches the end of mine life. Like development projects, closure studies are progressed through three stages: An order of magnitude study commencing 10-years prior to closure, a prefeasibility study commencing 5-years prior to closure and, finally a feasibility study commencing 1-year before closure. The outcomes of these studies are included in the subsequent MCP updates.

Progressive rehabilitation is also planned, undertaken and monitored to inform the closure planning process and closure outcomes, as detailed in Section 8.4. As the operation approaches the decommissioning phase (generally two years prior to cessation of operations), a more refined MCP with a greater level of detail on closure implementation will be submitted. The final closure plan will be prepared as an output of the closure feasibility study and will be submitted to the relevant regulatory agencies for approval. The level of detail in that MCP will be in accordance with the DMPE guidance in Appendix 8 of the *Guideline for Preparing Mine Closure Plans* (Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), 2025b).

1.7. Mine Closure Plan review and update

In accordance with the adaptive management approach recommended by DMPE, the closure plan will be a living document. It will be regularly updated through the life of operations and will incorporate future mining and infrastructure modifications at the Winu Project as tenure and required information becomes available. Under the *Mining Act 1978*, mine closure plan updates are to be submitted to DMPE as required by the Approvals Statement associated with the Mine Development and Closure Proposal. This will ensure changes in areas such as the regulatory environment, stakeholder expectations and developments in technical closure planning are captured and incorporated into decision-making until the ultimate relinquishment of tenements.

1.8. Proposed operations

The Project involves developing a single open pit that extends below water table (BWT) and associated infrastructure, including mineral waste management facilities (WRLs and TSFs), ore processing facilities, water infrastructure (dewatering and supply), energy infrastructure, linear infrastructure, and support facilities. Access to the mine site will be via the access road within the Road Access Corridor (RAC), which extends approximately 185 km from the Great Northern Highway to the western edge of the Mine and Infrastructure Area (MIA). A conceptual layout of the MIA is depicted in Figure 1-3.

The proposed Development Envelope is 23,649 ha in extent and comprises three major development areas:

- Mine & Infrastructure Area (MIA) – 10,182 ha
- Road Access Corridor (RAC) – 6,647 ha
- Rimfire Borefield (Rimfire) – 6,820 ha

Clearing up to 4,878 ha of native vegetation is proposed within the 23,649 ha Development Envelope (Figure 1-4). Clearing will occur during the implementation, operation and closure of the Proposal. Progressive rehabilitation will be undertaken wherever practicable.

Where possible, topsoil and vegetation removed during clearing, will be stockpiled in adjacent well-drained areas. Topsoil stockpiles will be managed appropriately so the material will be available for future rehabilitation operations.

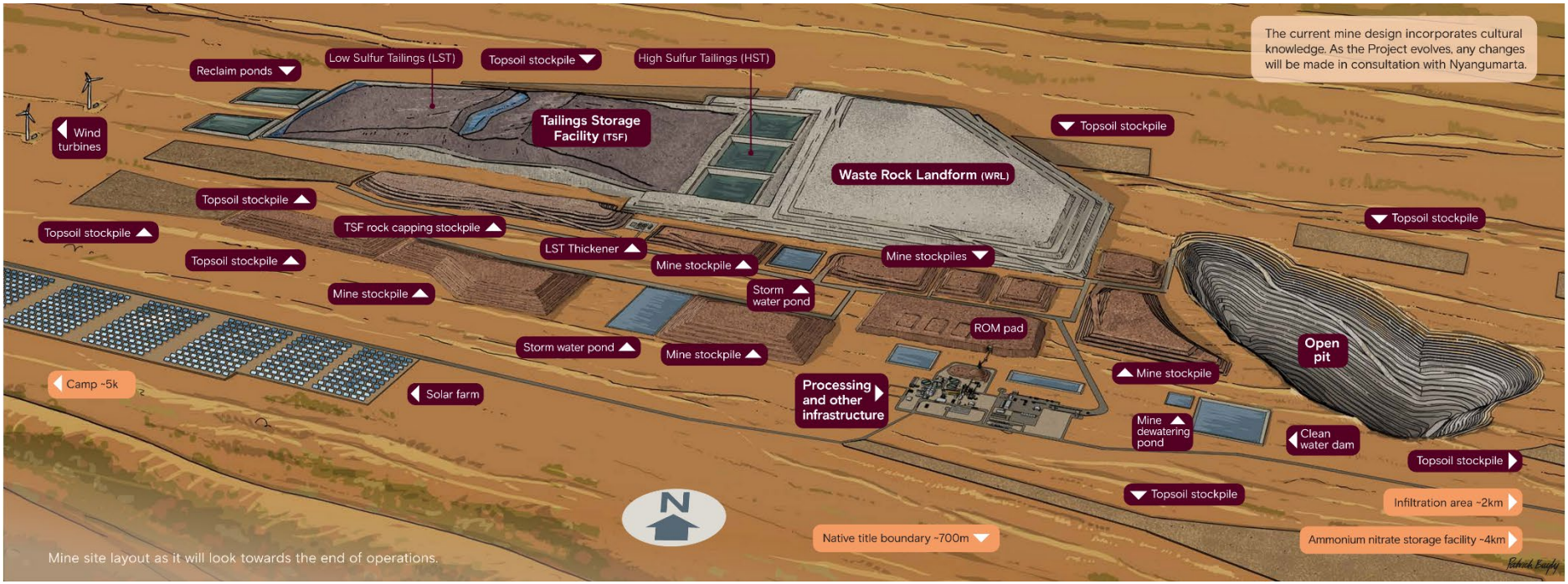


Figure 1-3: Conceptual Layout of the Winu Project's MIA

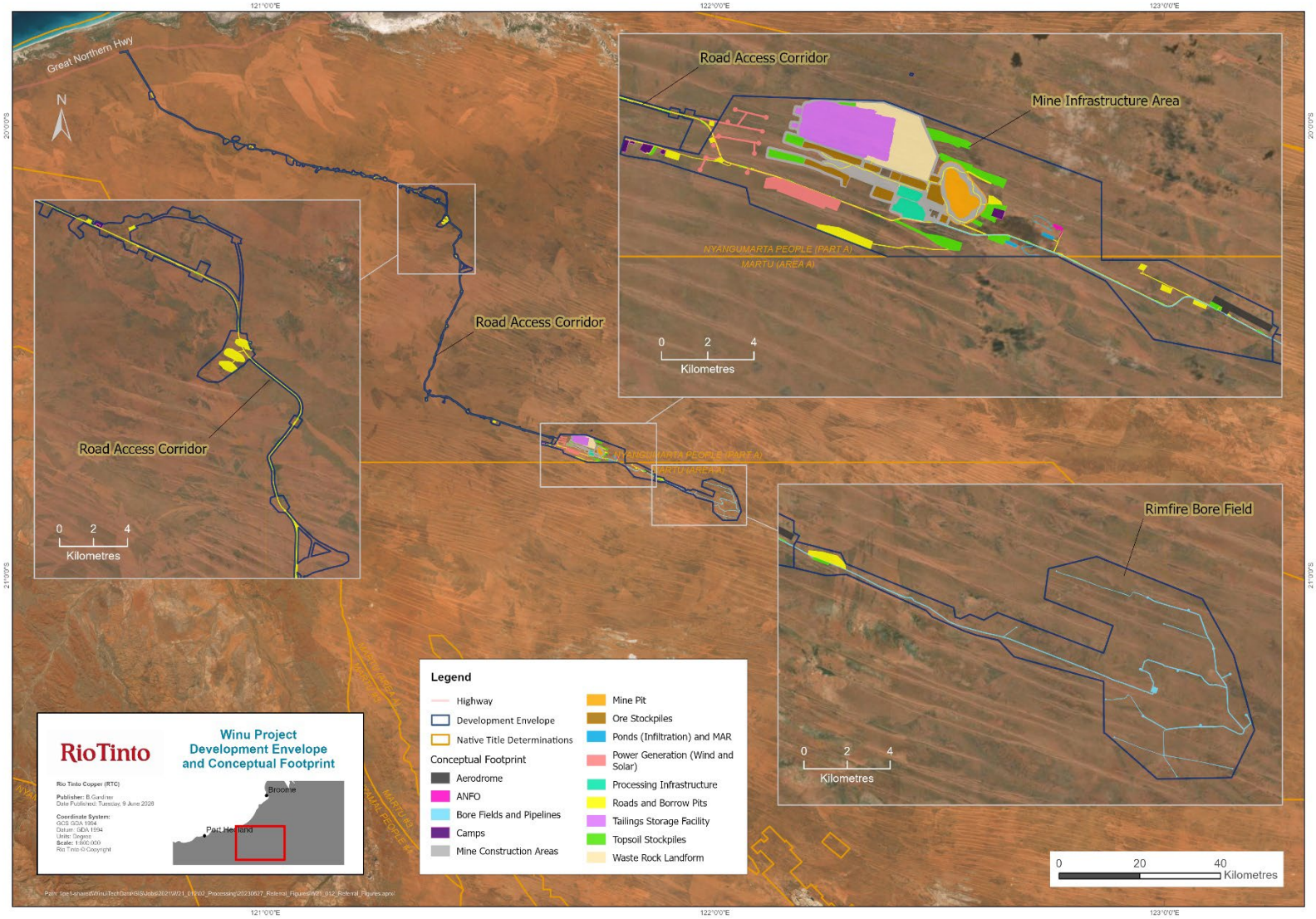


Figure 1-4: Development Envelope and Conceptual Footprint

The Proposal includes the development of a single BWT open-cut pit, with a footprint of approximately 200 ha, mined via a series of cutbacks to an approximate depth of 480 m below ground level (mbgl). The pre-mining water table will be encountered early in operations at approximately 50 to 60 mbgl with the mineral resource BWT. Infrastructure to abstract and manage water will be installed early in the pre-strip period to dewater the pit and depressurise the pit walls ahead of mining.

Mining operations are anticipated to involve conventional drill, blast, load and haul techniques whereby the blasted material (mined process feed) will be excavated and transported to run-of-mine (ROM) stockpiles ahead of the process plant or to long-term mine stockpiles to be fed to the plant later in the mine life. Mining equipment will include conventional excavators, haul trucks, drill rigs, bulldozers, water trucks, service trucks and graders.

In line with relevant Australian standards, an explosives magazine will store explosives for open pit blasting activities (Section 1.8.3).

ROM ore will be trucked to pre-crusher stockpiles, with waste rock transported to a dedicated, permanent Waste Rock Landform (WRL). Prior to commencement disturbance footprints will be grubbed of vegetation, topsoil stripped and stored in designated topsoil stockpiles for subsequent use in mine rehabilitation. Waste rock will be characterised and placed according to its deleterious or beneficial classifications. This may result in some materials being stockpiled for future use in closure management activities.

1.8.1. Ore processing and process infrastructure

The mineral processing plant will be located adjacent to the mine pit area with the capacity to be fed directly from the pit or from stockpiles to process the mineral resource (Figure 1-4).

The processing facilities will incorporate conventional equipment for crushing, stockpiling, and reclaiming, grinding with oversize recycle pebble crushing, flotation, concentrate dewatering and handling, Carbon-in-leach (CIL), carbon acid washing and gold elution/desorption, carbon reactivation, electrowinning, doré production, cyanide detoxification and tailing thickening. A simplified schematic is presented in Figure 1-5.

Gravity gold concentrators will be included in the milling circuit. A portion of the milled slurry will continuously feed the concentrators to recover gravity recoverable gold (GRG) in an enriched concentrate. The GRG concentrate will discharge to an intensive cyanidation reactor where gold is leached from the enriched concentrate in a batch process. The gold-rich pregnant liquor will be processed in a dedicated electrowinning circuit.

Reagents and consumables will be received and stored on site in bulk or in containers. Dedicated mixing, wet storage and dosing facilities will be provided for each reagent as required.

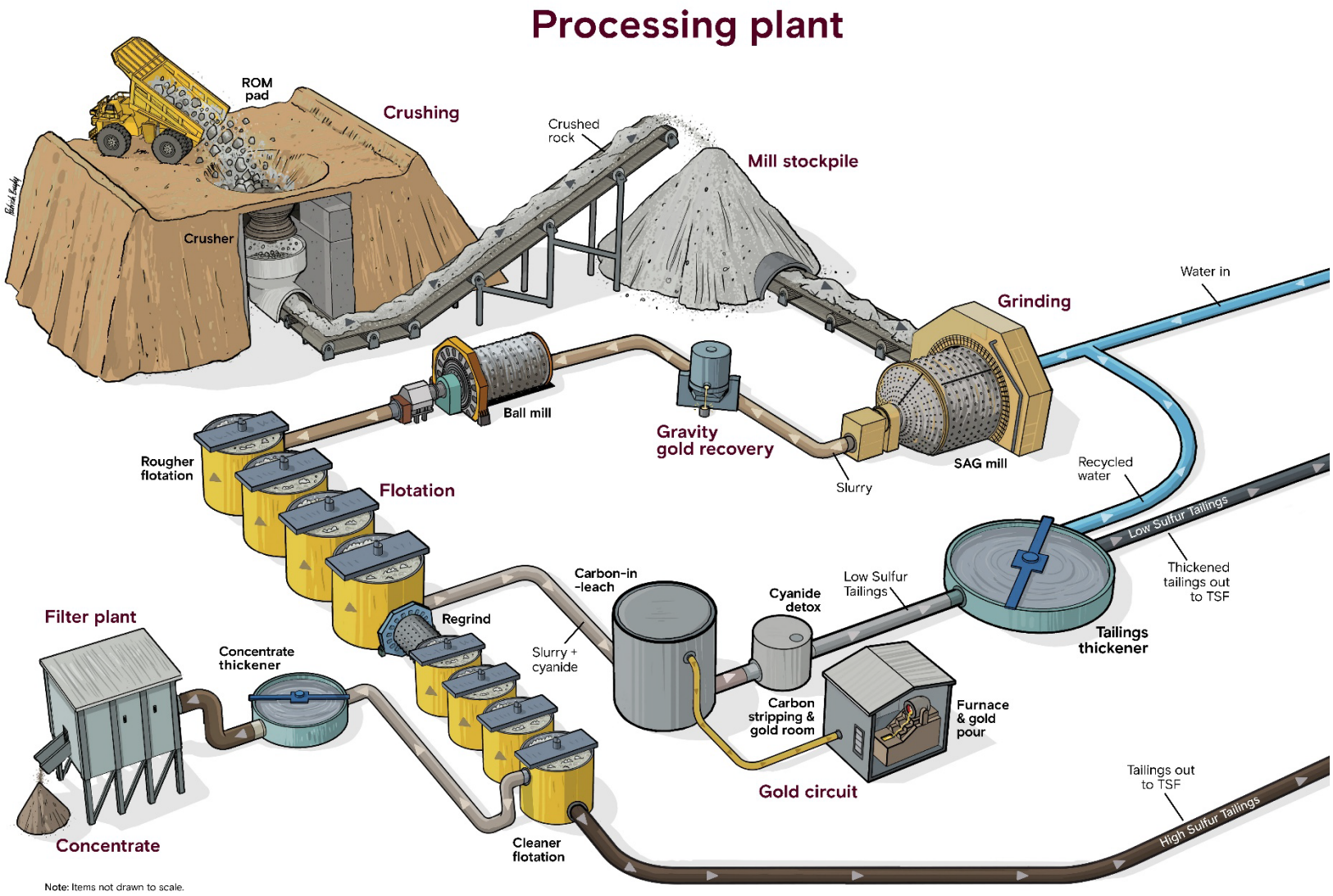


Figure 1-5: Simplified Schematic of Winu Processing

The key step in the process for separation of Low Sulfur Tailings (LST) and High Sulfur Tailings (HST) is the Rougher Flotation circuit. Here, tails with a sulfur grade of less than 0.3% are produced, and treated as NAF, and sent to the LST cells. The cleaner circuit is then used to separate the Rougher Flotation concentrate into copper sulfides (concentrate) and iron sulfide tailings, which are sent to the HST cells (Figure 1-5). Tails generated from the gold plant are also sent to the LST cells.

The design of the comminution circuit will consist of a single-stage primary crushing circuit with a conventional semi-autogenous grinding (SAG) mill and ball mill grinding circuit with pebble recycle, however without pebble crushing. Sufficient footprint has been allowed for in the Conceptual Footprint for the installation of recycle pebble crushing should this be required in future, resulting in a SAG mill – ball mill – crushing (SABC) circuit and for a second ball mill and other associated facilities, as required due to mineral resource hardness.

The flotation circuit will consist of rougher and cleaner flotation cells with the rougher circuit functioning as sulfide flotation only for secondary sulfides and primary sulfides. When oxides are campaigned, the rougher circuit will change to the first cells as sulfide flotation followed by the next cells as controlled potential sulfidisation (CPS) conditioning tanks using sodium hydrogen sulfide (NaHS) reagent. The remaining rougher cells will float the resulting oxide rougher concentrate. A simplified depiction of the tailings separation process is provided below in Figure 1-6.

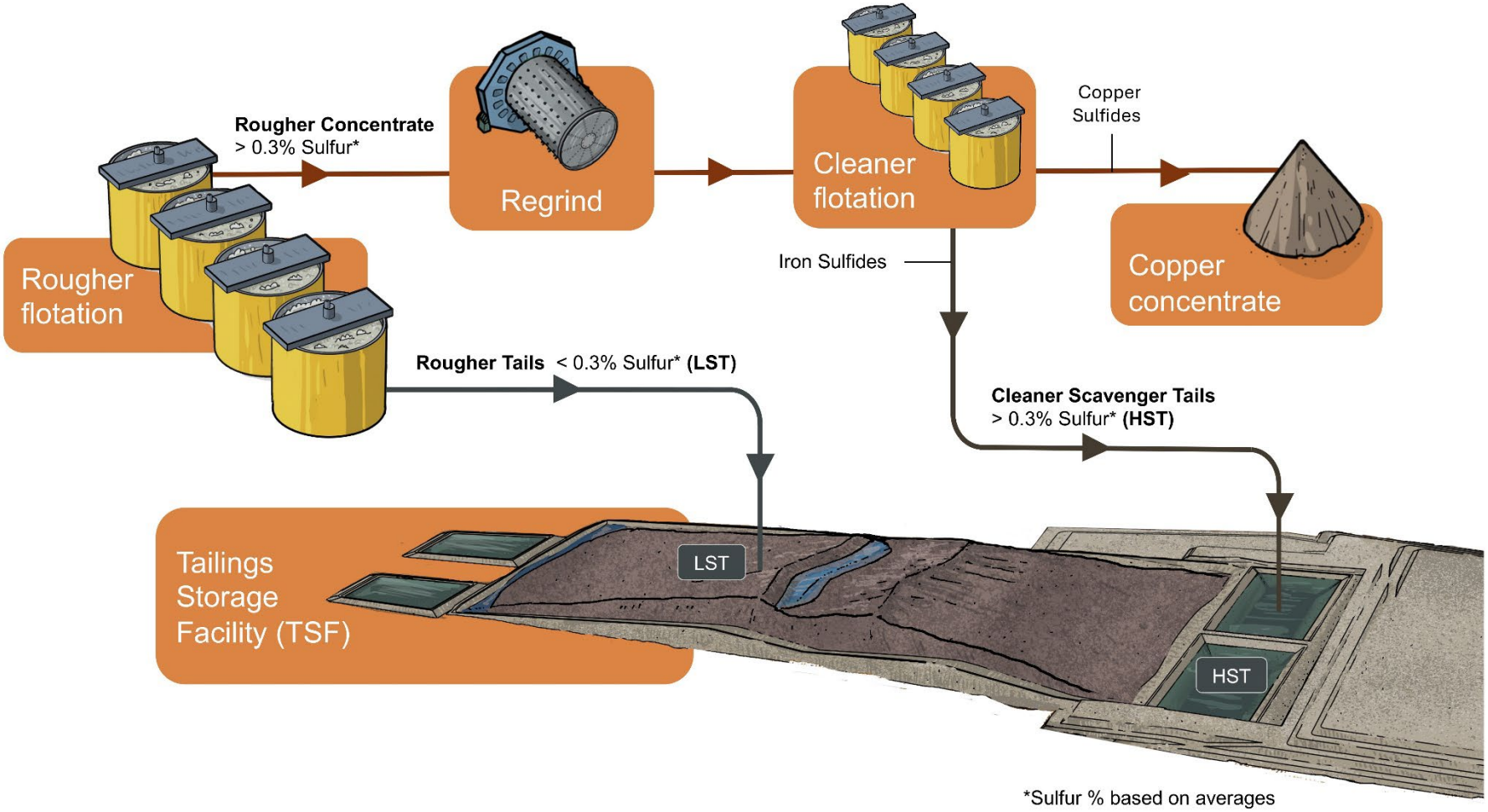


Figure 1-6: Simplified LST and HST Tailings Separation Process

All rougher concentrates will be reground and directed to the cleaner circuit. First cleaner concentrate feeds the second cleaner, and second cleaner concentrate is final flotation concentrate. Second cleaner tailing recycles to first cleaner feed. First cleaner tailing flows to the cleaner scavenger. Cleaner scavenger concentrate recycles to first cleaner feed.

The processing facility will also include concentrate dewatering and handling, tailing thickening, reagents, utilities and a TSF.

For selected primary sulfides, rougher tailing is thickened and fed to CIL tanks in which cyanide dissolves the gold. The dissolved gold is then adsorbed on activated carbon which is removed from the tanks by screening and then the gold is desorbed by elution and precipitated by electrowinning. Following this the gold is then smelted into bars for dispatch from site. Appropriate security facilities and measures will be in place for the management of the doré.

The desorbed carbon is thermally reactivated and returned to the CIL tanks. The CIL circuit tailing passes through a cyanide detoxification circuit, which reduces the cyanide concentration, and is then directed to the low-sulfur cell of the TSF.

For other primary sulfides, and secondary sulfides and oxides, the thickened rougher tailing is directed to the TSF low-sulfur cells. For all feeds, cleaner-scavenger tailing is directed unthickened to the TSF high-sulfur cells.

1.8.2. Tailings Storage Facilities

The Tailings Storage Facility design has been integrated into the WRL. The Tailings will be stored in separate high-sulfur tailings (HST) and low-sulphur tailings (LST) cells within the TSF to manage potential environmental risks. The LST cell(s) will be lined with appropriate liners and upstream raises will use soil with rockfill backing for closure. The HST cell will also be appropriately lined with a downstream-raised zoned embankment. The HST cell will be always operated with a minimum depth of 0.5 m water cover to reduce the potential for acid generation.

The details for liners at both the HST and LST cells is subject to confirmation during the Feasibility study.

1.8.3. Non process infrastructure

The Project includes, but is not limited to, the following support facilities and infrastructure.

Renewable and Non-renewable Power

A combination of wind turbines, photovoltaic solar panels, battery energy storage system (BESS), and diesel-fired thermal power generation, will be installed to support operations. A combination of overhead lines, cable trays and buried cables will be used to reticulate power across the site.

Explosives and Other Hazardous Materials Storage

The detonators, emulsion, ammonium nitrate and fuel oil (ANFO) used for blasting will be stored in an explosives' magazine and ANFO facility approximately 5 km east of the pit.

Telecommunications Infrastructure

Communications for the Project will comprise a combination of voice mobile radio (VMR) towers along access roads (supported by semi-permanent skids, mobile trailers, and microwave networks), telecommunications towers next to the village process plant and airstrip and fibre optic cabling installed below-ground along the access road to the village and MIA. To support the various information and communication technology (ICT) networks involved in plant operations a resilient fibre optic cable ring will be installed to transport instrumentation and control, communications and corporate networks around site.

Accommodation Village

To provide sufficient accommodation for construction and operations personnel, an on-site dual-purpose facility accommodation village will be constructed. The village will include but not be limited to, ensuite rooms, kitchen, dining hall, gym, shop, offices and recreation. A wastewater treatment plant (WWTP), spray field and landfill will also be installed at the village.

Airstrip

The Project requires a suitably sized sealed airstrip to support the construction and operations phases. The airstrip will be supported by an apron parking area for two planes and basic supporting facilities such as ablutions, undercover shelter and refuelling facilities. A new road will be established to link the airstrip to the mine and accommodation village.

Non-Process and Emergency Facilities

Non-process infrastructure including but not limited to, site fire emergency and medical facilities, heavy and light vehicle maintenance workshops, wash-down facilities, refuelling facilities, tyre change facilities, storage in warehouse and open yards, boilermaker workshop, bulk diesel and lubricant storage, drill core facility, oily water treatment, and an administration facility.

1.8.4. Linear infrastructure

Access Road

To meet the requirements for in-bound supplies and out-bound haulage, a dual-lane site access road that extends from the Great Northern Highway to the Mine and Infrastructure Area (MIA) will be established. The final cleared road surface will be sealed at 7 m width in a 9 m wide formation within the RAC.

1.8.5. Water infrastructure

Surface Water Management

A system of drains, flood protection bunds, ponds, pumps, pipes, categorised drainage collection and storage will be required to manage run-off in accordance with the Surface Water Management Plan (SWMP). Strategic flood protection bunds and windrow/environmental bunds will separate clean water from mining activities. Lined toe drains installed around stockpiles will direct potentially contaminated (oils, chemicals, metals) run-off to lined settling ponds. Potentially contaminated (sediment-loaded) run-off will be managed by unlined drains directing to localised ponding areas for use in dust suppression or allowed to infiltrate/evaporate.

Mine Pit Dewatering

The Project requires mine dewatering via a network of in-pit and ex-pit infrastructure. A series of dewatering bores will be installed to minimise pit inflow. Pit perimeter bore pumps and in-pit bore pumps will feed the pit perimeter piping ring main, which will then discharge to a clean water dam (CWD). In-pit sumps and pit storm water pumps will be installed to manage in-flows from rain, run-off and seepage and discharge directly into a pit water dam.

Regional Borefield Water Supply and Management

Water will be required for both the construction and operation of the Project. A network of production bores will feed a transfer pipeline. Transfer pumping stations and storage tanks may also be required to support. Groundwater abstraction and water distribution and return will be managed via bores, pipelines,

pumping and storage infrastructure. A clean water dam (CWD) will be constructed for surplus water management, along with monitoring bores, an infiltration area, and reclamation collection ponds.

2. IDENTIFICATION OF CLOSURE OBLIGATIONS AND COMITTMETNS

The Winu closure legal obligations is presented in Appendix A and contains details of legal obligations, relevant to closure, from the following instruments:

- Controlled Action via Decision Notice 2025//10208 under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) due to potential significant impacts to listed threatened species and communities
- Future Ministerial Statement (Winu Project) issued under Part IV of the EP Act
- Future Mining Proposal granted under the Mining Act
- Future Works Approval and Licence issued under Part V of the EP Act
- Future Licence to Take Water issued under the *Rights in Water and Irrigation Act 1914* (RiWI Act)
- Classifications under the *Contaminated Sites Act 2003* (CS Act)
- The Heritage and Land Access Agreement between Rio Tinto, the Nyangumarta People and Yamatji Marlpa Aboriginal Corporation (YMAC) as of time of writing. The nature of future/superseding agreements will need to be confirmed as required
- The Land Access Agreement and Mineral Exploration Agreement between Jamukurna Yapalikurnu Aboriginal Corporation (JYAC) and Rio Tinto as of time of writing. The nature of future/superseding agreements will need to be confirmed as required
- Any future agreements with Nyangumarta Warrarn Aboriginal Corporation (NWAC)
- The original exploration leases were granted to Rio Tinto Exploration in 2017, with first drillholes completed later in 2017. Since then, the Proponent has progressively applied for various exploration permits of work (PoWs) to enable mineral exploration activities across prospective areas of Winu. The current tenure for the Proposal is summarised in Table 1-1.

To support exploration activities, a groundwater licence was issued by the Department of Water and Environmental Regulation (DWER) in 2018. Abstraction limits were increased in 2021 to cover test pumping requirements as the requirements for water sources for proposed mining and processing activities became realised in 2020/21. Other project permits include the wastewater treatment plant and a Native Vegetation Clearing Permit (NVCP) to support ongoing road access and maintenance.

In November 2023, the Proponent lodged a proposal referral document under Section 38 of the EP Act. On 20 December 2023, the Chair of the EPA determined that the Proposal should be formally assessed (Assessment No. APP-0025007), with the level of assessment set at Public Environmental Review with an eight-week public review period.

In April 2025, the Proponent submitted a request for an amendment to the proposal under s. 43a of the EP Act. The proposed amendment included a significant reduction in the Development Envelope and an increase in the nominal processing capacity.

If the ERD is approved, the Proponent intends to submit a Mining Development and Closure Proposal under the *Mining Amendment Act 2022* (Amendment Act) and seek other approvals (e.g. Part V Works Approvals, Operating Licences) prior to the commencement of construction.

2.1. Closure guidelines and industry standards

In addition to these site-specific obligations, this MCP has been developed in accordance with Rio Tinto's internal study guidance and assurance standards and is consistent with the Rio Tinto Closure Standard (2021a). The development of this MCP also draws upon relevant aspects from other overarching closure guidelines and industry standards, including but not limited to:

- *Guideline for Preparing Mine Closure Plans* (Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), 2025a)

- *Integrated Mine Closure Good Practice Guide, 3rd edition* (ICMM, 2019)
- *Strategic Framework for Mine Closure* (Australia and New Zealand Minerals and Energy Council (ANZMEC) and the Minerals Council of Australia (MCA), 2000)
- *A Framework for Developing Mine-site Completion Criteria* (Young, et al., 2019)
- *Mine Closure: Leading Practice Sustainable Development Program for the Mining Industry* (Department of Industry, Science and Resources (DISR), 2016a)
- *Mine Rehabilitation* (Department of Industry, Science and Resources (DISR), 2016b)
- *Guidelines for Safety Bund Walls around Abandoned Open Pit Mines* (Department of Industry and Resources, 1997)
- *Rio Tinto Closure Standard* (Rio Tinto, 2021a)
- *Rio Tinto Community and Social Performance Standard* (Rio Tinto, 2022a).

The Rio Tinto Closure Standard describes the minimum requirements for all Rio Tinto managed assets to mitigate the financial, social, and environmental risks associated with permanent cessation of exploration, mining, processing, and/or logistics operations.

The Standard applies over the entire lifecycle of all Rio Tinto managed assets from exploration and development studies through to operations and permanent cessation of activity, closure execution, post-closure monitoring, transfer of tenure and/or in-perpetuity management, after completion of all rehabilitation, legal, social, and other obligations.

A key output of closure planning is the development of a closure cost estimate, prepared to an accuracy that increases as the asset approaches cessation of operations. This establishes the closure provision for the asset, ensuring that funds will be available to transition the land to an alternate, beneficial land use. The Winu Project conceptual closure cost estimate has an accuracy of +/- 50% which is considered appropriate for a mining project at this stage in the project lifecycle (ICMM, 2019). Refer to Section 10 for more information on the closure cost estimation process.

3. ENVIRONMENTAL DATA, ANALYSIS AND IMPLICATIONS FOR CLOSURE

3.1. Environmental and social setting

This Section includes information on the environmental and social setting in which the mining operation is located. The aspects considered are described below and knowledge gaps and implications for closure for the aspects where knowledge gaps have been identified are listed in Table 12-1.

3.1.1. Existing and historic land uses

Most of the region around the Project Area is UCL. Current land use in and around the Project Area mostly involves Nyangumarta People's and Martu People's management and enjoyment of, and interaction with, 'Country' in accordance with their Native Title rights and cultural responsibilities, including activities associated with the NWIPA.

Additional land use in the region includes pastoral grazing. As per Section 1.1, a portion of the RAC (close to the Great Northern Highway) is within Wallal Downs pastoral lease with the highway intersection approximately 8 km south-east of the station homestead. The Project Area does not cover any other pastoral leases, with the closest to the MIA being Warrawagine Station, approximately 100 km to the west.

The Australian Renewable Energy Hub (AREH) development area is a potential additional land use in the region.

The Great Northern Highway is the only sealed road in the locality, which otherwise hosts a sparse network of non-dedicated, unsealed, single-lane, four-wheel drive only tracks. The existing Access Road will be used where possible to form the basis of the proposed RAC. This includes 97 km of the western end of existing track known as the Nyangumarta Highway, 54 km of track known as Wirlkirr Wirlkirr Road and 32 km of a track locally named Copperhead Road.

3.1.2. Native Title determinations

The Nyangumarta People and Martu People have a long history of land use of the areas on which the Proposal sits over time scales that predate European colonisation by many thousands of years, as evidenced by the Nyangumarta and Martu Native Title determinations and related rights and interests.

Nyangumarta Native Title Rights (WCD2009/001-WAD6281/1998)

Except in relation to flowing and underground waters, an entitlement as against the whole world to possession, occupation, use and enjoyment of the land and waters of that part to the exclusion of all others.

In relation to flowing and underground waters, the right to use and enjoy the flowing and underground waters, including the right:

- To hunt on and gather and fish from the flowing and underground waters for personal, domestic, or non-commercial communal needs
- To take and use the flowing and underground waters for personal, domestic, or non-commercial communal need
- The right to access and move freely through and within each part of the Determination Area
- The right to live, being to enter and remain on the land, to camp and erect shelters and other structures for that purpose.

The right:

- To hunt and fish for personal, domestic, and non-commercial communal needs
- To take flora and fauna

- To take other natural resources of each part of the Determination Area including soil, sand, clay, gravel, ochre, timber, and stone for personal, domestic, and non-commercial communal needs
- To share and exchange natural resources of each part of the Determination Area including soil, sand, clay, gravel, ochre, timber, and stone for personal, domestic, and non-commercial communal needs
- To engage in cultural activities in the area, including the transmission of cultural heritage knowledge
- To conduct ceremonies
- To conduct burials and burial rites
- To hold meetings
- To visit, maintain and protect from physical harm places and sites of importance in each part of the Determination Area
- To access and take water for personal, domestic or non-commercial communal purposes, and for the sake of clarity and the avoidance of doubt, this right does not include the right to take or use water lawfully captured or controlled by the holders of pastoral leases numbered 3114/485 (Mandora), 3114/1079 (Wallal Downs) and 3114/1154 (Anna Plains).

Martu (WCD2002/002- WAD6110/1998)

The right to possess, occupy, use, and enjoy the area to the exclusion of all others, including the right:

- To live on the area
- To make decisions about the use and enjoyment of the area
- To hunt and gather, and to take the waters for the purpose of satisfying their personal, domestic, social, cultural, religious, spiritual, ceremonial, and communal needs
- To control access to, and activities conducted by others on, the land and waters of the area
- To maintain and protect sites and areas which are of significance to the common law holders under their traditional laws and customs
- As against any other Aboriginal group or individual to be acknowledged as the traditional Aboriginal owners of the determination area.

The right to use the following traditionally accessed resources: ochre, soils, rocks, stones, flora, and fauna; for the purpose of satisfying their personal, domestic, social, cultural, religious, spiritual, ceremonial, and communal needs.

The right to take, use and enjoy the flowing and subterranean waters in accordance with their traditional laws and customs for personal, domestic, social, cultural, religious, spiritual, ceremonial, and communal needs, including the right to hunt on and gather and fish from the flowing and subterranean waters.

3.1.3. Socio-economic context

Winu will be operated with a fly-in fly-out workforce, with around 400 personnel. Personnel will be flown to the Rio Tinto operated Karlkayn Airstrip and whilst on site are housed at the Winu accommodation camp, a fully serviced accommodation facility.

The Project Area is within the Nyangumarta and Martu Exclusive Native Title Determination areas and the Shire of the East Pilbara. Marble Bar and Nullagine are the nearest townsites to the mining and infrastructure areas, located approximately 190 km southwest and 210 km south-southwest, respectively. The nearest Aboriginal communities in the Shire are Punmu, approximately 200 km southeast and Irrungadji at Nullagine.

The RAC intersection with the Great Northern Highway is approximately 40 km west-southwest of the Sandfire Roadhouse. The RAC is approximately 160 km from Marble Bar at its nearest point. Wallal is

adjacent to the RAC on the Nyangumarta Highway section, approximately 50 km south-southeast of Sandfire Roadhouse.

The Proponent has identified key stakeholders (Table 3-1) in the Winu area and commenced dedicated consultation ahead of approvals and development of the Project.

Table 3-1: Key Stakeholders for Social Surroundings Consultation

Traditional Owner Group	Registered Native Title Bodies Corporate	Pastoral Station	Community	Other Relevant Parties
Nyangumarta	NWAC	Wallal Downs Mandora	Community, including the Shire of East Pilbara	N/A
Martu	JYAC			

The Project Area is remote from population centres and predominantly surrounded by unallocated crown land (UCL). Most of the Project Area, including all active mining areas occurs within the NWIPA; actively managed by Nyangumarta Rangers through the implementation of the NWIPA Management Plan 2022-2032.

Pastoral Stations

There are no pastoral stations within 100 km of the MIA, with the closest being Warrawagine Station, which sits approximately 100 km west. Approximately 16 km of the RAC is located on the Wallal Downs Station pastoral lease, with the intersection at the Great Northern Highway approximately 8 km south of the station homestead. The Mandora Station homestead is approximately 20 km east-northeast of the intersection.

Conservation Estate

There is no conversation estate near the Proposal, with the nearest, Walyarta Conservation Park (encompassing the Mandora Marsh), located approximately 40 km north of the RAC.

Other Projects

The Development Envelope intersects the proposed Australian Renewable Energy Hub (AREH) development envelope along the Nyangumarta Highway section of the RAC. The Proponent engages regularly with AREH to understand any implications of the Projects on each other. The nearest existing significant mining operations are at Telfer, Nifty and Woodie Woodie, all approximately 100 km south or southeast of the Project Area.

Tourism and Recreation

There are no known significant recreation or tourism activities that occur within or near the Project Area, with the potential exception of any activity that may be associated with the Great Northern Highway (such as access to Eighty Mile Beach Caravan Park), occasional four-wheel drive visits along the Nyangumarta Highway (actively managed by NWAC through the Nyangumarta Highway permit System) or on pastoral leases near the RAC.

3.1.4. Aboriginal culture and heritage

The proposed activities are within the Nyangumarta Native Title Determination area (Figure 1-2; Figure 3-1). A small portion of the proposed activities are located within the Martu Native Title Determination area.

A search of the Department of Planning Lands and Heritage's Aboriginal Heritage Inquiry System did not identify any registered sites within the Project Area.

Numerous archaeological and ethnographic desktop and field surveys have been undertaken within the area by the Nyangumarta People and Martu People along with their preferred consultants. These surveys are summarised in Appendix B. Cultural Heritage surveys have covered approximately 90%of the proposed Winu Project footprint. The surveys have identified nine locations with either archaeological material (stone artefacts and baler shell) or manuports (unmodified stones) all of which represent the remains of cultural activities undertaken in the past. All these locations except for one site are located on sand dunes. Consultation with the Traditional Owners has resulted in modifications to initial designs to either avoid disturbance of these sites (e.g. TSF location) or developing alternative closure designs (e.g. WRL).

It is known that dunes are significant to both the Nyangumarta People and Martu People, having been used intensively by their ancestors. As such, there is a high probability that archaeological material will be uncovered during any ground disturbing works within the sand dunes. The Proponent will avoid impacts to sand dunes where practical and work collaboratively with Nyangumarta People and Martu People to determine the best long-term solution for any culturally significant areas that become exposed. Where mining landforms coincide with sand dunes, the landforms will be constructed on top of the dunes, such that the underlying dunes are not impacted. Where this is unavoidable due to ensuring long-term landform stability and a safe TSF, the impacts will be minimised and undertaken in consultation with the Nyangumarta People.

Claypans are distinct features of the landscape, and valuable places to camp because of the intermittent availability of surface water, as well as the presence of certain types of trees. While these places were of special importance in the past for the Nyangumarta People and Martu People, they continue to be vital sources of water for many animals in the desert.

Less tangible cultural heritage at Winu comprises natural elements such as water in general as well as the right to continue to conduct cultural activities in the region. In the desert environment, the cultural significance of water as a life source and resultant water bodies as places to meet, camp and conduct ceremonies, is magnified due to its scarcity.

Winu is named after a very significant soak site for the Nyangumarta People. Winu means ‘thirsty’. Understanding the long term and cumulative impact of water usage at the Project, on the significant surface and subsurface water features in the region, and projecting that out into the future as the mine expands is part of effective consultation with the Nyangumarta People and Martu People.

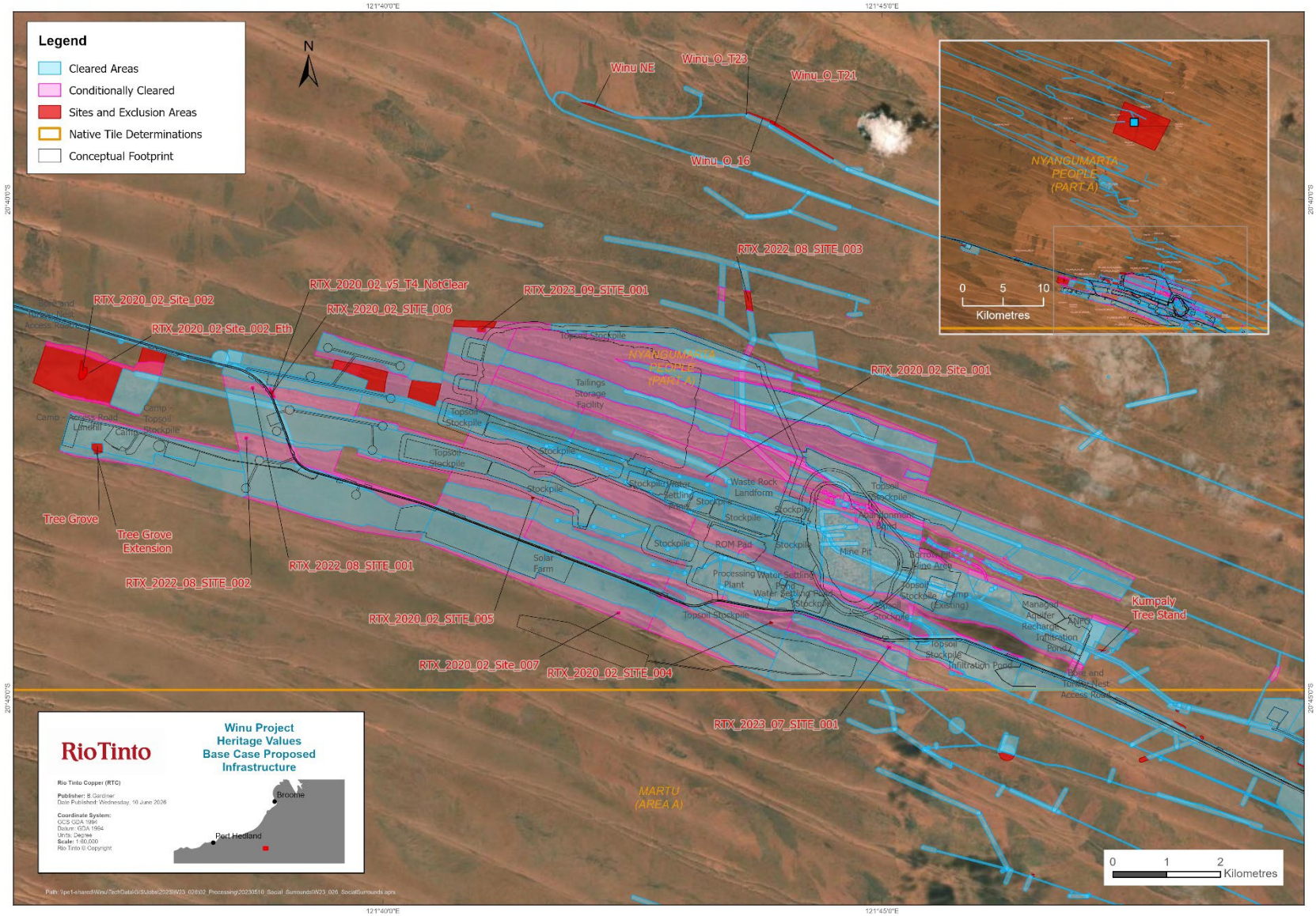


Figure 3-1: Summary of Heritage Surveys Completed Over the Planned Winu MIA.

Initial fieldwork and consultation completed, as well as ongoing on country consultation and activities, are intended to confirm the Social Surroundings themes, values, issues of concern for, and recommendations of the Nyangumarta People and Martu People with respect to the Project Area. This work will aim to characterise Nyangumarta and Martu aesthetic, cultural, economic, and other Social Surroundings values that have the potential to be affected by impacts to physical or biological surroundings caused by execution of the Project to inform the environmental impact assessment. Although further consultation is expected to improve the Proponent's appreciation of Nyangumarta and Martu Social Surroundings values, it is understood that Nyangumarta Peoples' and Martu Peoples' relationship and connection with Country is of paramount importance to them. A holistic view of the environment underpins this, that is, including all aspects of society, culture, and heritage – such as people, sense of place, cultural landscapes, stories, beliefs, cultural activities, special places, plants and animals, water, landforms and more – are all interconnected and inseparable.

Nyangumarta and Martu Social Surroundings values may be understood in the context of two broad and overarching themes:

- Amenity: Relating to the use, enjoyment of and desire to be on Country
- Cultural heritage: Relating to cultural practices, traditional Law, customary lore, sites, places, songs, stories, and beliefs.

Acknowledging each group (and individuals' members of each group) will have a range of views to be explored and defined further in the aforementioned consultation, the Proponent's preliminary understanding of amenity and cultural heritage values and issues as raised by the Nyangumarta People and Martu People in consultation to date include, for example:

Water

The Proponent understands water is important, culturally significant, and central to Nyangumarta and Martu culture and heritage. The region experiences little to no surface water runoff, surface water features tend to be ephemeral and sparse, and no major watercourses are in the Project Area. Initial Nyangumarta and Martu concerns regarding water include potential impacts on:

- Special Places associated with, or reliant on, surface and/or groundwater, such as soaks and waterholes. Important places in the vicinity of the Project Area on Nyangumarta Country include:
  - Toramah Soak (54 km from the proposed mining and infrastructure areas)
  - Winu Soak (22 km from the proposed mining and infrastructure areas)
  - Djimakarra Soak (45 km from the proposed mining and infrastructure areas)
  - Bulgamulgardy Soak (93 km from the proposed mining and infrastructure areas)
- Water use. Given their sacred nature, Nyangumarta and Martu are concerned with minimising water abstraction and use for mining operations
- Groundwater aquifers. This includes aquifer depletion. Martu has expressed concerns about the natural flow gradient of groundwater from their Country north to Nyangumarta Country and the effect of any change the Proposal may have to this flow interfering with their cultural obligations and spiritual beliefs associated with water. Nyangurmarta have expressed concern with the risk to groundwater quality associated with the permanency of some infrastructure, such as the WRL, TSF and the resultant lake in the pit void
- Excess water disposal.

Access, Use and Enjoyment of Country.

Maintaining safe access to Country to allow for its use and enjoyment and maintenance of amenity in ways that contribute to Nyangumarta's and Martu's quality of life and expression of their cultural heritage. This recognises the holistic sense of place Nyangumarta and Martu are likely to attach to Country, the

importance of the ability to exercise Native Title rights and interests and undertake cultural activities (e.g. camp and hunt, perform rituals and take bush resources).

Special Places

Special places may include places, sites or sand dunes that have cultural heritage values for Aboriginal people (and which are recognised under State Aboriginal heritage legislation) such as waterholes and soaks, as well as other places, places of special amenity or that give important sense of place, or otherwise are important for the exercising of native title rights and cultural activities that may require extra levels of protection or management relative to other areas of Country. Special Places that are not known heritage sites will be discussed with Nyangumarta and Martu (acknowledging that cultural Law/lore may restrict the level of detail the groups are able or willing to share) during upcoming social surroundings consultation. No DPLH registered or other heritage sites exist within or near the Development Envelope. Through cultural heritage surveys, the Proponent and Nyangumarta have identified several sites that will be managed through further consultation and Management Plans.

Care for Country

The Proponent understands that one of the foundations of Nyangumarta and Martu culture is the important concept of Country and 'caring for Country', involving a cultural responsibility to 'healthy Country' that recognises the holistic interconnection between the broad dimensions of land, water and sky and includes plants and animals, people and spirits as well as special places, songlines, Law/lore and other associated cultural elements.

While there are parts that have been subject to relatively low-level disturbance (e.g. tracks, mineral exploration), much of the Project Area is recognised by Nyangumarta and Martu as in pristine or near-pristine condition, with, for example, negligible weed presence and limited feral fauna presence on top of the overall lack of built development or pastoral and other significant activity in the region.

As such, avoiding and minimising disturbance, including minimising footprint and any potential to introduce weeds and encourage feral fauna, achieving appropriate rehabilitation and closure outcomes and supporting Nyangumarta and Martu to care for Country are recognised by the Proponent as important aspects of the Project outcomes. In this regard the Proponent acknowledges the importance of consulting with and involving Nyangumarta and Martu through mine design, rehabilitation and closure planning and implementation.

The Project will involve the construction of reinforced concrete foundations for the wind turbines. These deep foundations will stay in place at closure, with the surface topsoiled and rehabilitated. This will likely require a layer of substrate to be incorporated to provide additional depth for the establishment of local shallow/moderate rooted species.

Plants and Animals

The Project Area is expected to include plants and animal species that are not only of 'conservation significance', but that hold social and cultural significance with respect to food, medicine, stories, ceremonial uses, for clothing, for shelters and toolmaking. As cultural custodians of their lands Nyangumarta and Martu are concerned with not only plants and animals that have specific cultural associations, but their care for Country ethos means that they are culturally responsible for maintaining healthy Country, meaning they are obliged to care for all plants and animals that occur on Country.

A total of 41 flora species considered to be Culturally Significant occur across the Winu Project.

The pit lake is surrounded by Crown land inside the NWIPA. Engagement with Nyangumarta People will form an integral component of ongoing stakeholder engagement related to potential PMLU's associated with the pit void. However, the pit void at its designed closure configuration will not be able to be accessed. As such PMLU's will be limited and hunting or fishing opportunities are unlikely

3.1.4.1. Implications for closure

Stakeholder discussions on social surrounds will be subject to ongoing engagement throughout the mine life. Information derived from surveys and consultations is included in the Proponent's GIS to spatially manage Special Places, including heritage sites, such as by creating exclusion boundaries so that personnel designing an activity can seek to avoid such places where possible. The concept of 'Closure in Design' has been incorporated into the Project plans to aid in the successful delivery of closure outcomes.

Most impacts will initially be experienced during the operations phase, with some continuing into closure as follows:

- Direct disturbance of Country (which may include Special Places - such as waterholes, camping sites, hunting grounds, other important cultural places and heritage sites – as well as plants and animals and their habitat, physical changes to landscape and water features, which may interfere with cultural obligations and spiritual beliefs tied to Country, water, flora and fauna)
- Land disturbance approval processes will continue through any additional disturbance activities required for closure execution
- Restriction of access to Country (which may affect the ability of Traditional Owners to exercise Native Title rights and undertake cultural activities during Proposal operation and post mining)
- Disturbed areas will be rehabilitated to be safe, stable, and non-polluting, with native vegetation reintroduced, except for the WRL, TSF and pit void. These landforms are discussed further in Section 8.1 on specific Domains
- Permanent changes to natural landforms and installation of infrastructure may result in altered visual landscapes amenity (social and cultural dimensions, use, experience, and enjoyment of Country) and interference with cultural obligations and spiritual beliefs tied to Country
- Indirect impact to cultural heritage and amenity, including interference with cultural obligations and spiritual beliefs tied to water, as a result of altered hydrological regimes
- Visual amenity assessments have been completed with no impact predicted to culturally important areas. Refer to Section 6.4.15 for more detail on visual amenity associated with permanent landforms
- Disturbance, or reduced presence of plants and animals which are used socially or culturally, or which have cultural associations, due to dust, noise, and vibration
- Rehabilitation programs will include the use of socially or culturally important plant species and the associated development of appropriate habitat for fauna.

Specific closure requests from Nyangumarta People raised during consultation (as of November 2024) is for the Proponent to engage Nyangumarta People in the co-design of closure and site rehabilitation which addresses:

- Permanent landform design, including closure safety bunds
- Soil resource preservation and deployment
- Revegetation, including seed collection and management
- Removal of above and below ground infrastructure.

These aspects will be subject to ongoing engagement, including identification of any opportunities that can be implemented during the development stages of Winu.

3.1.5. Local climatic conditions

The Paterson Province has a semi-arid climate with extremely hot summers and warm winters. The Bureau of Meteorology (BoM) weather stations at Telfer Aero (Station Number 013030), Marble Bar (Station Number 004106), and Mandora (Station Number 004019) provide a relevant range of climate

statistics. The Telfer station has been operating since 1974, providing approximately 50 years of data, while the Mandora station has been operating since 1913, providing 111 years of data (62 years of temperature data), and the current Marble Bar station has been operating since 2000, providing 24 years of data.

Most rain falls between January and March, during the monsoon season. The average annual rainfall for Telfer is 371.6 mm while it is 394.7 mm in Marble bar and 379 mm in Mandora, indicating there is some minor variability in rainfall across the area.

Average monthly minimum and maximum temperature at Telfer Aero, Marble Bar and Mandora, along with rainfall are provided in Table 3-2 and Figure 3-2. The hottest months are November, December, and January while the coolest months are June, July, and August. Mandora has noticeably cooler maximum temperatures as it is situated near the coast while Telfer and Marble Bar are further inland.

Pan evaporation for the south-western Little Sandy Desert bioregion ranges from 16 mm/day in January to 4 mm/day in June at an annual daily average of 10 mm (Van Leeuwen, 2002). The predominant wind direction is from the east (Figure 3-3).

Table 3-2: Climate Statistics of the Paterson Province

Climate Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Telfer Aero (BoM Station 013030)												
Mean maximum temperature (°C)	40.3	38.9	37.6	34.6	29.1	25.4	25.6	28.6	33.0	37.5	39.5	40.5
Average minimum temperature (°C)	26.1	25.5	24.3	20.7	15.5	12.0	10.8	12.7	16.7	21.2	23.7	25.7
Average rainfall (mm)	63.7	95.9	75.2	19.2	18.8	12.4	10.6	5.2	3.2	3.5	15.2	48.7
Marble Bar (BoM 004106)												
Mean maximum temperature (°C)	40.9	39.8	38.3	36.2	31.1	27.1	27.7	30.5	34.9	38.9	40.7	42.0
Average minimum temperature (°C)	26.5	26.1	25.2	22.1	17.0	13.3	12.1	13.3	17.1	21.7	24.1	26.4
Average rainfall (mm)	107.3	82.7	77.9	22.5	13.4	22.5	11.8	1.3	4.6	2.8	12.5	35.4
Mandora (BoM Station 004019)												
Mean maximum temperature (°C)	36.0	35.7	37.0	36.3	32.3	29.2	29.1	31.0	33.9	36.1	36.7	36.8
Average minimum temperature (°C)	25.5	25.0	24.1	20.9	17.0	14.2	12.5	13.3	15.8	19.2	22.0	24.6
Average rainfall (mm)	89.0	103.6	72.2	18.7	25.1	16.9	8.4	2.4	1.1	1.2	6.3	34.1

Source (Bureau of Meterology, 2024a)

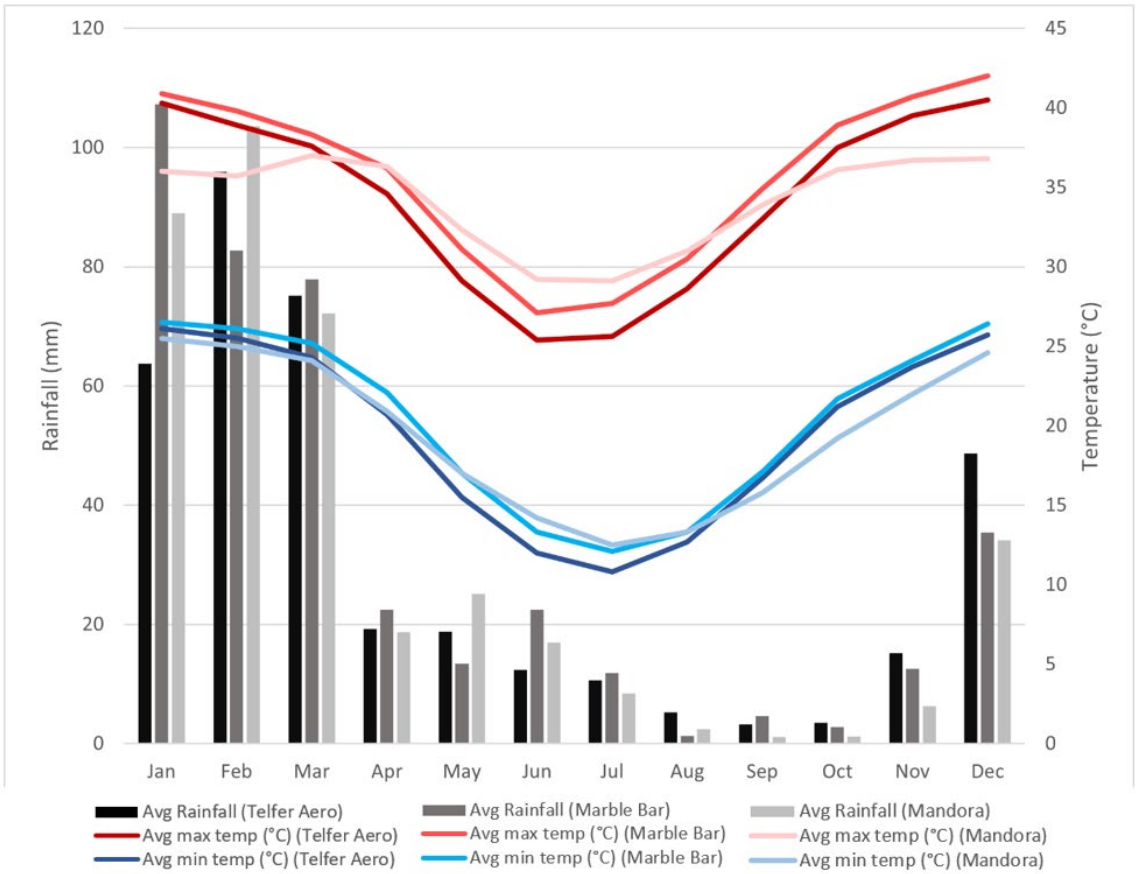


Figure 3-2: Graphical Representation of Climate Statistics

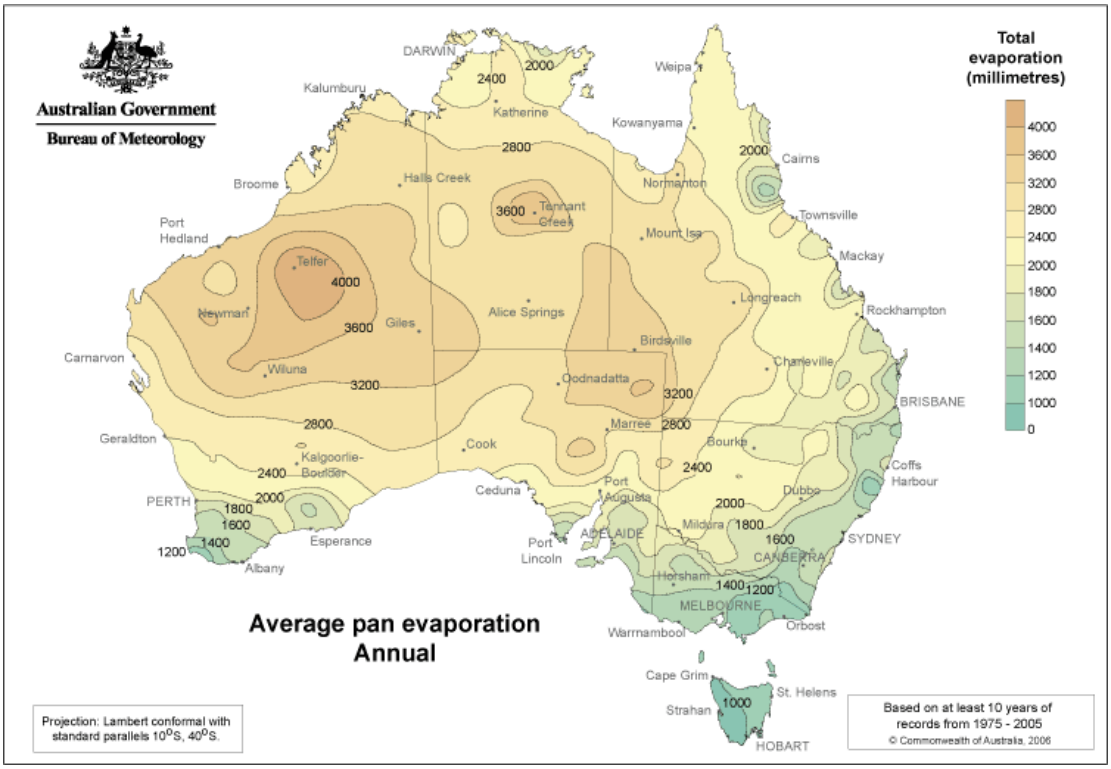


Figure 3-3: Average Annual Pan Evaporation Estimates (Van Leeuwen, 2002)

3.1.5.1. Implications for Closure

The regional climatic setting of the Project has been incorporated into the following aspects of closure related design:

- Technical studies with climate related inputs (groundwater, surface water, geochemistry, geotechnical) have utilised Climate modelling scenarios for Maximum Probable rainfall events
- Subsequent technical studies will continue to incorporate projected future climate scenarios where relevant
- Development of rehabilitation programs will incorporate resilience to predicted climate change impacts.

3.1.6. Topographic relief and geomorphology

3.1.6.1. Bioregions

The Project is predominately located within the Mackay (GSD02) and McLarty subregions of the Great Sandy Desert Interim Biogeographical Regionalisation of Australia (IBRA) bioregion (DCCEEW, 2021) The MIA is within the Mackay subregion, while the while the RAC and Rimfire stretch from the south in the Mackay subregion through the McLarty subregion in the north.

An extensive system of linear sand dunes is present within the Great Sandy Desert IBRA bioregion including within the MIA (SLR Consulting Australia, 2025). These dunes are the dominant landform within and surrounding the Development Envelope.

Dunal landforms within the MIA do not meet the EPA landform significance criteria for variety, ecological importance, scientific importance or rarity. The landforms are considered to meet the criterion for integrity, however, given the remote location and limited disturbance, most landforms across the region are expected to meet this criterion, and therefore, landforms within the MIA are not considered unique (SLR Consulting Australia, 2025).

Part of the RAC, approximately 6 km at its westernmost end, is located in the Pindanland subregion (DAL02) of the Dampierland bioregion.

The three subregions are outlined below in Table 3-3.

Table 3-3: IBRA Subregions of the Project Area. Source: (Biota, 2020a)

Subregion	Description
Mackay subregion (GSD02)	The subregion comprises the tropical inland ‘red centre’ desert and includes the ‘Percival’ and ‘Auld’ palaeoriver systems. The vegetation is mainly tree steppe grading to shrub steppe in the south; comprising open hummock grassland of *Triodia pungens* and *Triodia schinzii* with scattered trees of *Owenia reticulata* and bloodwood (*Corymbia* spp.), and shrubs of *Acacia* spp., *Grevillea wickhamii* and *G. refracta*, on Quaternary red longitudinal sand dune fields. The vegetation is very similar to the McLarty subregion. The climate is arid tropical with summer rainfall and monsoonal influences apparent in the northwestern sector of the region.
McLarty subregion (GSD01)	The subregion includes the Mandora palaeoriver system and red-brown dune fields with finer texture than further south. It also includes gravelly surfaces of Anketell Ridge along its northern margin. The vegetation is mainly tree steppe grading to shrub steppe in the south, comprising open hummock grassland of *Triodia pungens* and *Triodia schinzii* with scattered trees of *Owenia reticulata* and bloodwoods (*Corymbia* spp.), and shrubs of *Acacia* spp., *G. wickhamii* and *G. refracta*, on Quaternary red longitudinal sand fields overlying Jurassic and Cretaceous sandstones of the Canning and Amadeus Basins. Gently undulating uplands support shrub steppe. Wetland features in the subregion include isolated mound springs supporting *Melaleuca*

	leucandendra closed forests, and *Melaleuca glomerata* – *M. lasiandra* shrublands around salt lakes. The climate is arid tropical with summer rain and is influenced by monsoonal activity. Morning fogs are recorded during the dry season.
Pindanland subregion (DAL02)	The subregion comprises sandplains of the Dampier Peninsula and western part of Dampier Land, including the hinterland of the Eighty Mile Beach. It is a fine-textured sand-sheet with subdued dunes and includes the paleodelta of the Fitzroy River. The vegetation is described primarily as pindan but includes *Melaleuca alsophila* low forests on coastal plains and *Spinifex* spp. – *Crotalaria* spp. Strand communities. The climate is dry hot tropical and semi-arid with summer rainfall. The average rainfall is between 450-700 mm, slightly lower than the Fitzroy Trough subregion.

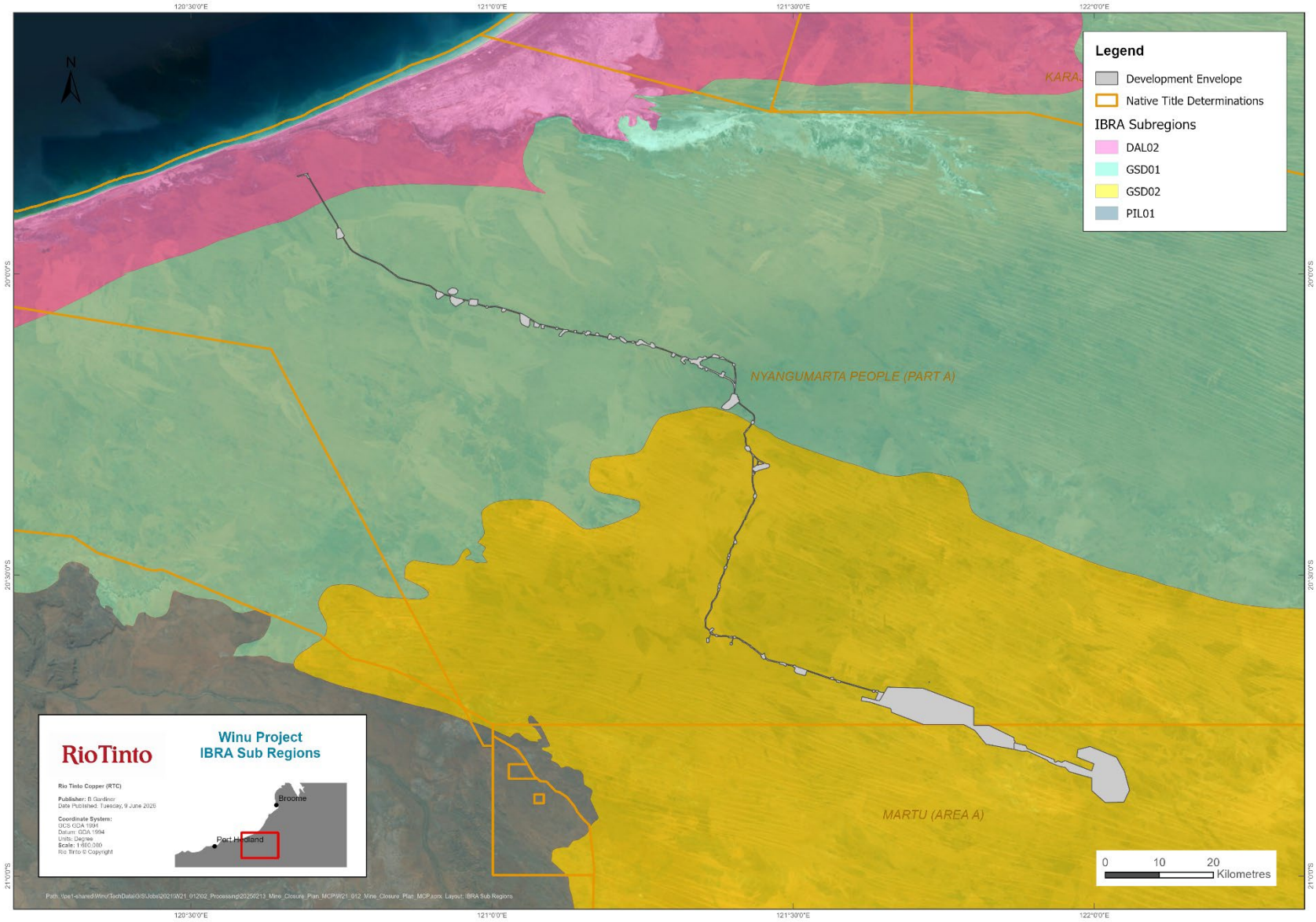


Figure 3-4: IBRA Subregions Winu Area

3.1.6.2. Land systems

Land systems of Western Australian rangelands have been mapped and described by the Department of Primary Industries and Regional Development (DPIRD), outlining the distributions, and providing comprehensive descriptions of biophysical resources, including soil and vegetation condition.

The Proposal occurs within six land systems (Figure 3-5), with Little Sandy and Nita covering most of the Project Area. The systems are described (Van Vreeswyk, Payne, Leighton, & Hennig, 2004) as:

- Little Sandy: Sandplains with linear and reticulate dunes supporting shrubby spinifex grasslands
- Nita: Sandplains supporting shrubby spinifex grasslands with occasional trees
- Callawa: Highly dissected low hills, mesas and gravelly plains on sandstone and conglomerate supporting spinifex grasslands
- Buckshot: Gravelly sandplains and sporadic sand dunes supporting shrubby hard spinifex grasslands
- AB40: Gently undulating plain and dominated by longitudinal dunes, many exposures of ironstone gravels and some breakaways capped by ironstone
- B30: Largely stable linear dune fields with swales opening locally into sand plains.

3.1.6.3. Implications for Closure

Based on the assessment of land systems and land use data, the following considerations have been made in relation to mine closure for land systems and land use:

- Permanent changes within the Project Area through the construction of permanent landforms, namely the WRL, TSF and the mined pit, will constrain potential post mining land uses
- Engagement with Traditional Owners resulted in a preference for avoidance to disturbance for dune structures where practical. Whilst irreversible, the proposed final WRL and TSF landform designs have balanced the minimisation of disturbance for mined landforms with the heights of the final structures. The developed designs are appropriate to the materials available and the climate to enable safe, stable, and non-polluting landforms
- Visual impact studies have been undertaken and shared with stakeholders. The studies demonstrate no impact from culturally significant locations or access roads
- Reversible changes to landform from non-permanent landform domains within the Project Area e.g. infrastructure and access tracks, are unlikely to limit any post mining land use
- Opportunities for the progressive rehabilitation of disturbed areas will be assessed and implemented throughout the mine life. Early opportunities will be associated with construction activity areas, however operational areas will generally not be available for rehabilitation until later in the mine life. Notwithstanding, a rehabilitation research program will be developed and implemented throughout the mine life, such that final rehabilitation will be well informed. Regional experience from mining operations undertaken in sand dominated landscapes within the Great Sandy Desert (including Telfer and Nifty) may provide contextual information relevant to rehabilitation planning at Winu. At the time of preparation of this Mine Closure Plan, no dune rehabilitation has been completed at Winu. Accordingly, regional experience is considered informative in nature and will be used to support the design of site-specific rehabilitation trials, rather than as a predictor of rehabilitation performance or outcomes at Winu. Rehabilitation approaches for dunes and sandplain environments at Winu will be developed, tested and refined through site-specific trials and monitoring, consistent with an adaptive management framework and the conceptual stage of the Project. Engagement and site-specific rehabilitation research will commence during early stages of disturbance and continue throughout the mine life, with outcomes informing future revisions of the Mine Closure Plan.
- The potential for wind erosion may increase due to the design of the WRL and TSF. The orientation of the WRL's is generally parallel to the dunes. The preference from Nyangumarta to reduce the disturbance footprint, necessitates an increase in height, which in turn increases the potential for wind erosion. As such, a wind erosion study of the design of the WRL and TSF and the impact on adjacent areas has been undertaken (Agreenco, 2025). Key observations were as follows:

- The wind shear model utilised did not consider surface roughness of the WRL and TSF. Vegetating these landforms will likely reduce wind shear impacts on surrounding dunes
- The WRL will likely have low wind erosion potential due to large particle sizes
- Shear can be expected wherever there is a sharp change in angle (crests and sharp corners)
- Reinforcement of vegetation on the existing dunes in the impact areas (perhaps increasing density of indigenous shrubs in target zones) could offset impacts.

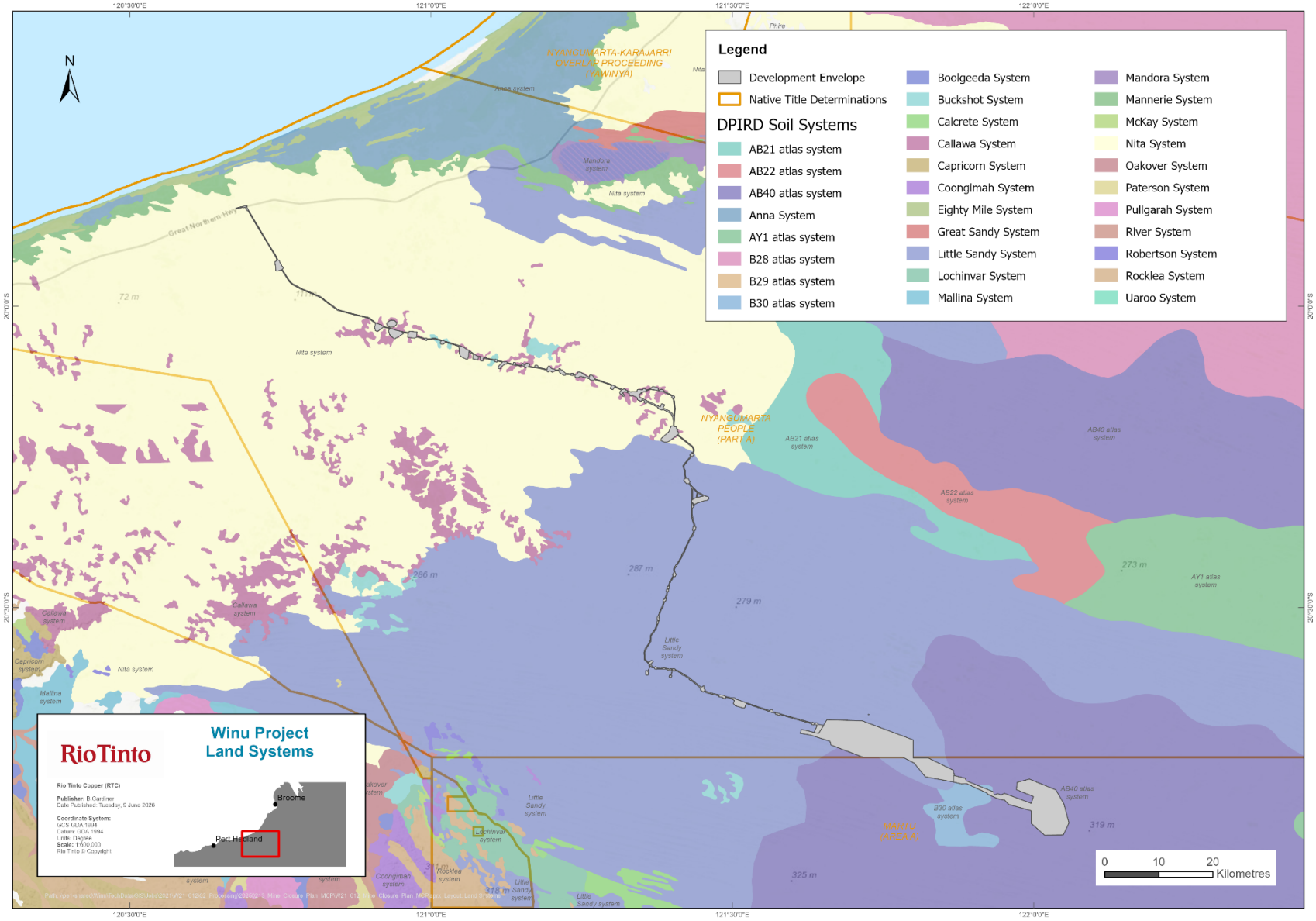


Figure 3-5: Winu Land System Intersection

3.2. Baseline data

3.2.1. Local geology

The Winu project is located on the Anketell Shelf of the Yeneena Basin. On a regional scale the geology comprises a north-northwest trending belt of folded and metamorphosed Proterozoic sedimentary and igneous rocks. The assemblage is over 9km thick and intruded by dolerite sills, dykes, and granites some 650 to 600 million years ago. The deposit lies within metamorphosed sandstones, siltstones and lesser mafic rocks considered to be correlatives of the upper Malu Formation of the Yeneena basin and host to the large Telfer Au-Cu deposit. The evolution of the basin represents the later stages of long-lived convergence of the North and West Australian cratons when plate collision stopped subduction (Hickman & Bagas, 1999).

3.2.2. Lithology

The following subsections describe the main lithologies likely to be encountered during mining operations. These lithologies are depicted below in Figure 3-6.

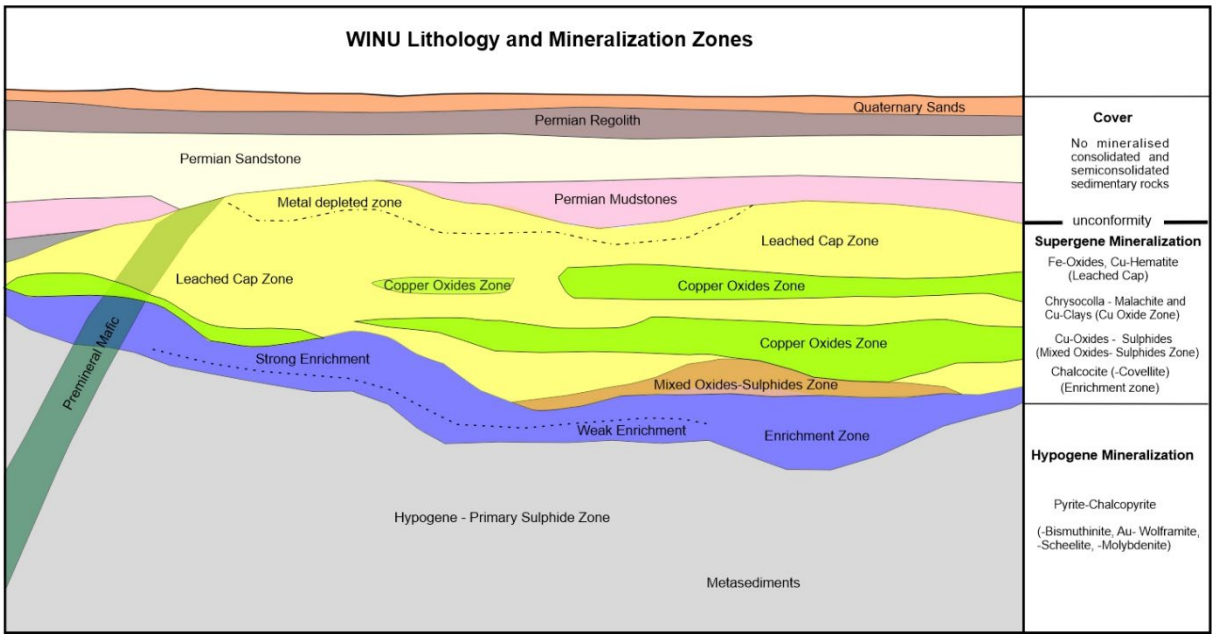


Figure 3-6: Lithological Zones of the Winu Deposit

3.2.2.1. Quaternary/Aeolian Sands

These units lie nearest the surface at Winu. They are physically characterised as unconsolidated to partially consolidated silty sands with a clay content up to 4%.

Geotechnically, they have been classed as suitable for use in raising subgrade and foundation levels for infrastructure and as spoil for tailings storage.

These units are inert with no economic mineralisation or potential to generate acid and metalliferous drainage (AMD).

Figure 3-7: Unconsolidated Aeolian Red-orange Sand with Local Cm-scale Yellow Goethitic Patches

3.2.2.2. Permian Sandstones

These units occur 15 – 65 m below the surface at Winu.

The physical characteristics of these units are:

- Highly weathered
- Poorly graded sand with minor slit and clay and low plasticity
- Interbedded layers of partially consolidated to consolidated
- Consolidation increasing with increasing depth.

Geotechnically, Permian Sandstone is classed as suitable for structural fill (subject to processing) and likely suitable as TSF embankment fill.

These units are inert with no economic mineralisation or potential to generate AMD.

Permian Sandstone is considered a valuable closure resource as it is chemically inert and withstands erosion. As such, this resource will be suitable for use on the outer cover (slopes and horizontal surfaces) of the WRL and TSF, in conjunction with topsoil.

Figure 3-8: Partially Consolidated White-greyish Coarse-grained Alluvial Sandstone Poorly Sorted and Usually Cross-bedded Intervals

3.2.2.3. Oxidised Permian Mudstone

Immediately below the Sandstones is Oxidised Permian mudstone, a silty to clayey silt with low to medium plasticity. Physically, this unit is weathered with weak to medium strength and low permeability.

Geotechnically, this unit is classed as unsuitable for use as a foundation or road sub-base due to high silt and clay content.

Oxidised Mudstone has no economic mineralisation and is mostly inert; a low number of samples to date (<1%) have assayed above 0.2% total sulfur.

3.2.2.4. Reduced Permian Mudstone

Immediately below the Oxidised Mudstone is the reduced Permian Mudstone unit, a silty to clayey silt with low to medium plasticity. Physically, it is unweathered with weak to medium strength and low permeability.

Reduced Permian Mudstone is classed as geotechnically unsuitable for use as a foundation or road sub-base due to high silt and clay content. However, the high clay content and non-acid forming (NAF) component of this material makes it an ideal material for ore stockpile basal foundations to prevent seepage.

Reduced mudstone has no economic mineralisation and a low potential to generate AMD; with 13% of samples to date assayed above 0.2% total sulfur.

If utilised for low permeability bases for landforms in the Project, Permian Mudstones will be reclaimed at closure and relocated to the WRL. Permian Mudstones are likely unsuitable for use as a cover material on final landforms.

3.2.2.5. Leach cap/Weathered Meta-Sediments

The Leach Cap unit is situated above the copper oxides and enriched metasediments as a highly weathered metamorphosed sedimentary rock. Physically, Leach Cap is described as a cobbly waste with a high coarse fraction that occurs in three zones:

- Upper metal depleted leached cap
- Goethitic leached cap
- Lower hematitic leached cap.

Leach Cap is assessed to have moderate permeability with a low tendency for structural decline.

This stratum mainly contains NAF materials with seven of the 269 samples identified as Potentially Acid Forming (PAF) (Rio Tinto, 2024b). All PAF material was encountered at a depth of greater than 160 m below the surface and primarily within the Hypogene Primary Sulfide Zone.

Whilst most of this layer has been classified as NAF it has also been identified as ‘Barren’ as it has a limited Acid Neutralising Capacity (ANC) (Rio Tinto, 2024b). So, while the Upper zone is not considered a risk for potential acid generation, it is also an unsuitable material for neutralising acid that may be generated from the other waste rock lithologies.

No significant metalliferous leaching was observed during the sample analysis (Rio Tinto, 2024b).

Where classified as NAF, non-high silt Leach Cap forms a valuable closure resource. Erosion studies (Landloch, 2020) determined that a landform design comprised of 20 m high bench/batter design at 20^0 constructed of Leach Cap would erode at less than 10 t/ha/year. As such, this resource will be suitable for use on the outer cover (slopes and horizontal surfaces) of waste rock landforms and TSFs.

The high strength and low erosive characteristics of Meta-Sediments indicate that these waste units have the potential to be a valuable closure resource. Where NAF is high, these units could be useful for encapsulating PAF materials in the WRL. Erosion modelling by Landloch demonstrated that a combination of rock/sand mix was found to be less erosive than Leach Cap in a berm/batter constructed landform (Landloch, 2020).

Figure 3-9: Metal Depleted Leach Cap (Left), Goethitic Leached Cap (Middle), Hematitic Leach Cap (Right)

Chemically leach cap may contain minor amounts of economic mineralisation. Less than 3% of assays were above 0.2%, hence leach cap has a low likelihood to generate AMD. It is suspected that PAF leach cap occurs proximal to copper oxides and primary enrichment contacts, where sulfide minerals are more likely to occur. Geotechnically leach cap is assessed as moderate permeability with a low tendency for structural decline.

3.2.2.6. Copper Oxide

The copper oxide zone waste is currently classified as NAF.

3.2.2.7. Secondary Sulfides (Enriched)

Located below Copper Oxide are the Enriched Secondary Sulfides unit. The physical characteristics of this unit are similar to those of the Leach Cap/Weathered Metasediments.

Approximately 42% of this zone was identified as being NAF and the remaining 58% being PAF or ‘uncertain’, which for this assessment has been classified as PAF (Rio Tinto, 2024c). Some of the NAF material, particularly within the Metasediment and Quartz Sandstone lithologies, exhibited readily available ANC properties (up to 473 kg H2SO4/t). The presence of readily available ANC also makes it unlikely that any acidification will occur within the short term (approximately eight years).

An increased risk has been identified of heavy metals, namely Cd, Co, Cu, Mn, Ni and Zn, being released from some of the lithologies when pH is <5 (Rio Tinto, 2024c). However, none of the tests consistently achieved a pH of <5 and as such a significant release of metals was not recorded.

Figure 3-10: Copper Oxide of Proterozoic Rocks that Contains Malachite, Chrysocolla and Chalcocite

3.2.2.8. Primary Sulfides (Hypogene)

These units present as metamorphosed sedimentary rocks, sandstone with occasional siltstone layers. Geotechnically, they are medium to high strength rocks potentially suitable as a source of rockfill and armouring.

The majority (83%) of samples taken from the Hypogene Primary Sulfide Zone were identified as PAF, with all samples with a sulfur content above 0.2% classified as PAF (Rio Tinto, 2024d). The remaining NAF fraction is classified as ‘Barren’ as ANC is mostly absent or unavailable for net acid neutralisation. Due to the lack of ANC, acid generation from this stratum will be rapid, with all the limited amount of ANC being depleted within eight years.

The PAF material is also expected to release several heavy metals, such as Cd, Co, Cu, Mn, Ni and Zi, due to its inherent low pH (Rio Tinto, 2024d).

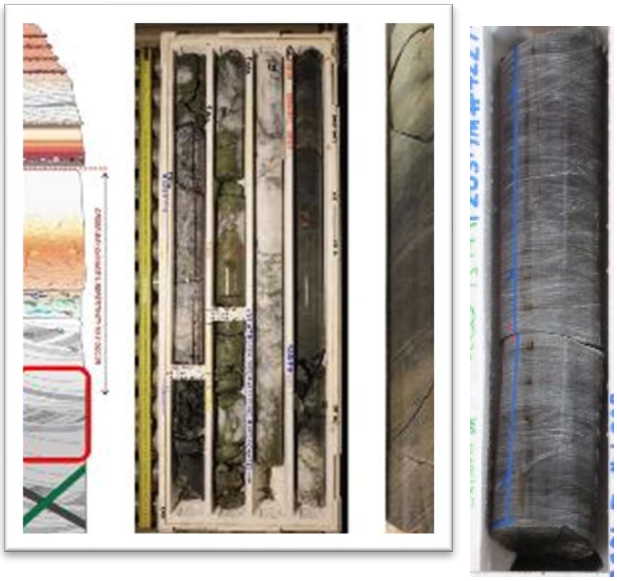


Figure 3-11: Showing the Metasediments of the Hypogene which Contains Quartz-Sulfide Veins

3.2.3. Soils

Regional soils are typically red sandy earths with deep red sand on dunes. Stony soils, red loamy earths, red shallow loams, red shallow sands, and red sandy earths are associated with the hills and ranges of the region.

The Project occurs within the major geomorphic region of the Great Sandy Desert and is split across two soil-landscape zones as defined by regional soil mapping (DPIRD, 2025): MIA and Rimfire within the Great Sandy Desert Zone and the RAC intersecting the Great Sandy Desert and Nita Sandplain Zones.

Furthermore, the Project intersects six soil-landscape systems, shown below in Table 3-4.

Table 3-4: Soil Landscape Systems Intersecting the Project Area

Soil Landscape System	Description
Little Sandy System	Sandplains with linear and reticulate dunes supporting shrubby hard and soft spinifex grasslands.
Nita System	Sandplains supporting shrubby spinifex grasslands with occasional trees.
Callawa System	Highly dissected low hills, mesas and gravelly plains on sandstone and conglomerate supporting soft and hard spinifex grasslands.
Buckshot System	Gravelly sandplains and occasional sand dunes supporting shrubby hard spinifex grasslands.
AB40 System	Gently undulating plain slightly more elevated than unit AB39, and dominated by longitudinal dunes, many exposures of ironstone gravels and some breakaways capped by ironstone (laterite) duricrust.
B30 System	Dune fields--largely stable linear dune fields with swales opening locally into sand plains dune lineation is generally east to west. but in the area west of 123º east longitude the trend is northwest to southeast.; considerable areas of clay pans and salt pans.

Three soil mapping units (SMUs), were recorded within the Development Envelope (Landloch, 2025):

- Deep Sands (comprising approximately 81% of the extent of the Development Envelope): Wind-blown Aeolian sands associated with sand dunes throughout the landscape. Coarse sands dominate these soils with no appreciable silt or clay content and no pedological development
- Gradational Sands are widespread across the Development Envelope (comprising approximately 17% of the extent of the Development Envelope) The distribution of the SMU occurs within the RAC, Rimfire, and the MIA, although its presence in the MIA is confined to the airstrip and immediate surrounds: Gradational Sands are similar to Deep Sands, with a slight elevation in clay content at depth. The key defining attribute of the Gradational Sands is their change in texture from sand on the surface to sandy loams at depths >0.5 m
- The Shallow Sands SMU is isolated to Rimfire and considered an anomaly within the Development Envelope, comprising 2% of total extent. Shallow Sands are similar to Deep Sands, although are differentiated by a cemented hardpan occurring at depths of approximately 0.3m.

The characteristics of these SMUs are consistent with those soils commonly associated with the sand dunes within the Little Sandy Landscape System. They are also less commonly associated with the interdune sandplains and swales of the same Landscape System.

The typical characteristics of the three SMU's are presented in Table 3-5.

Table 3-5: Typical Physical and Chemical Characteristics of Soils

Soil Characteristics	Deep Sands			Gradational Sands			Shallow Sands	
Physical								
Moist Colour	Dark Red to Very Dusky Red at depth			Dark Reddish Brown to Dark Red at depth			Light Red to Yellowish Red	
Texture	Loamy Sand to Clayey Sand at depth			Loamy Sand to Sandy Loam at depth			Clayey and loamy sands to Sandy loam	
Structure	Weak surface structure to massive structure with depth			Weak surface structure to massive structure at depth			Weak to no structure	
Consistency	Weak dry surface consistency to loose dry consistency at depth			Weak surface consistency to very firm consistency at depth			Loose dry to weak dry consistency	
Coarse fragments	Low coarse fragment abundance is present throughout the profile			Low coarse fragment abundance present at the surface, increasing with depth			Low to moderate coarse fragment abundance present above the hardpan layer	
Chemical	**Topsoil**	**Sub-soil B1**	**Sub-soil B2**	**Topsoil**	**Sub-soil B1**	**Sub-soil B2**	**Topsoil**	**Sub-soil**
Acidity (pH)	6.0 -6.3 (6.0)	5.5 -6.2 (5.9)	5.5 -6.6 (6.0)	5.5 -6.6 (5.8)	5.7 -6.4 (6.1)	5.7 -6.6 (5.9)	5.5 -6.2 (6.0)	5.7 -6.2 (6.0)
Salinity dS/m	0.01 - 0.2 (0.01)	0.1 -0.03 (0.01)	0.1 -0.02 (0.01)	0.01	0.01	0.01 -0.02 (0.01)	0.01 -0.02 (0.01)	0.01 -0.02 (0.01)
Sodicity	2.8 -4.2 (3.5) - non-sodic	2.9 -7.9 (3.8) - non-sodic	1.4 -7.1 (3.2) - non-sodic	2.0 -3.9 (2.9) - non-sodic	1.9 -3.4 (3.0) - non-sodic	12 -5.1 (2.4) - non-sodic	3.5 -4.0 (3.9) - non-sodic	2.0 -4.1 (3.2) - non-sodic
Fertility	Moderate/high			Moderate/high			Moderate/high	-
Landscape Photos								

**Values denoted within brackets signify the median value*

3.2.3.1. Acid Sulfate Soils

The soils that characterise the Development Envelope - aeolian sediments inclusive of dunal soils and Cenozoic sediments above the groundwater table - have a very low potential of containing Acid Sulfate Soils (ASS).

The risk of ASS was reviewed by Red Earth Engineering and included within the Oxide/Overburden waste report (Red Earth Engineering, 2024). ASS are unlikely to exist within the Development Envelope due to the following:

- Shallow dunal soils (to a depth of 1.5 mbgl) are dry and fully oxidised
- The shallow stratigraphic sequence is expected to be dry most of the year, if not permanently dry/unsaturated, given that:
    - Permanent surface water is not known to exist within the Development Envelope
    - Depth to groundwater is typically more than 50 mbgl.

On this basis, the Project is not expected to disturb any Acid Sulfate Soils.

3.2.3.2. Topsoil Management

Topsoil (generally up to the top 200 mm from surface) will be recovered prior to mining and stored in stockpiles for use in rehabilitation projects, this is discussed further in Section 3.3.3. Should deeper soils be determined to be beneficial for rehabilitation, these will be recovered from the pit development area during operations and stockpiled for later use. Fresh topsoil may be stockpiled on top of these deeper soils to minimise the disturbance area required.

3.2.3.3. Implications for closure

Appropriate management and use of soils will be a critical part of rehabilitation success at Winu. Additional measures required are listed below:

- Additional characterisation of subsoils to determine suitability for use in rehabilitation
- Operational closure and rehabilitation materials inventory based on plan vs. actuals
- Determine physical and chemical soil amelioration requirements
- Development and maintenance of a Topsoil Management Plan.

3.2.4. Water

Surface water and groundwater assessments undertaken between 2018 to 2024 have provided an understanding of the local hydrogeology and allowed the development of a robust conceptual and numerical surface and groundwater models. These studies included:

- A desktop hydrology assessment on the Winu Project Area
- A desktop hydrogeological assessment of the Winu Project Area
- Field studies including the drilling and installation of monitoring bores and the collection of site hydrogeological data, including pump tests
- Probable Maximum Flood modelling
- Conceptual groundwater modelling
- Numerical groundwater modelling.

Outcomes from these studies are explained in more detail in the following sections.

Potential impacts to ground and/or surface water quality due to mineral waste management and/or stormwater runoff from disturbed areas will be minimised via actions undertaken during operations including:

- Within WRL, encapsulate PAF material within NAF material to protect runoff quality, minimise infiltration, build PAF layers in small lifts, control wind erosion and allow vegetation establishment
- Minimise the potential contamination of groundwater and surface water through storage of tailings in a TSF constructed to ensure:
- Segregation of high sulfur and low sulfur materials within the TSF
- Subaqueous storage of HST during operations
- Seepage control through liners
- Drainage controls to contain and segregate TSF water from natural catchment flows and re-direction to processing plant for re-use.

3.2.4.1. Hydrology

Regional Hydrology

Watercourses within the Pilbara region are ephemeral and exhibit high temporal variability, with flows occurring in response to high rainfall events. The primary mechanism for runoff occurs when the rate of rainfall exceeds the infiltration capacity of the soil. This mechanism is commonly associated with high-intensity cyclonic rainfall and impervious catchments.

Around the Project, the dominant surface water features are soaks, which commonly form in interdunal depressions associated with localised and ephemeral perched water tables that express during high rainfall events. These surface water features are formed by surface water runoff and are separate from the deeper regional water table (Worley, 2024a) (Appendix D). Four soaks are considered to occur in proximity to the Proposal including Weenoo, Toramah, Djimakarra and Bulgamulgardy Soak.

The internal drainage system in the area has also resulted in the formation of several claypans, which are also likely to be associated with localised areas of ephemeral, perched water tables which express at surface after high rainfall events (Worley, 2024b). These claypans also have cultural significance. The nearest prominent (approximately 250 m wide) claypan to the MIA, is approximately 5 km south of the Development Envelope Figure 3-12).

Other surface water features that have been identified surrounding the Project include the Oakover River, the Mandora Salt Marsh Ramsar wetland area, Lake Waukarlicarly and the Wallal and Percival Paleovalley systems. Table 3-6 present all surface water features identified within the Greater Sandy Desert Region and their approximate distance from the MIA and Rimfire. Figure 3-12 depicts the surface water features in proximity to the Winu Project (Worley, 2025).

Table 3-6: Surface Water Features and their distance from MIA and Rimfire

Surface Water Feature	Approx. Distance from MIA (km)	Approx. Distance from Rimfire (km)
Weenoo Soak	20	40
Toramah Soak	55	75
Djimakarra Soak	45	50
Bulgamulgardy Soak	90	115
Oakover River	100	105
Mandora Salt Marsh Ramsar wetland area	>100	>100
Lake Waukarlicarly	60	50
Wallal Paleovalley system	20	20

WallalPercival Paleovalley system	30	0

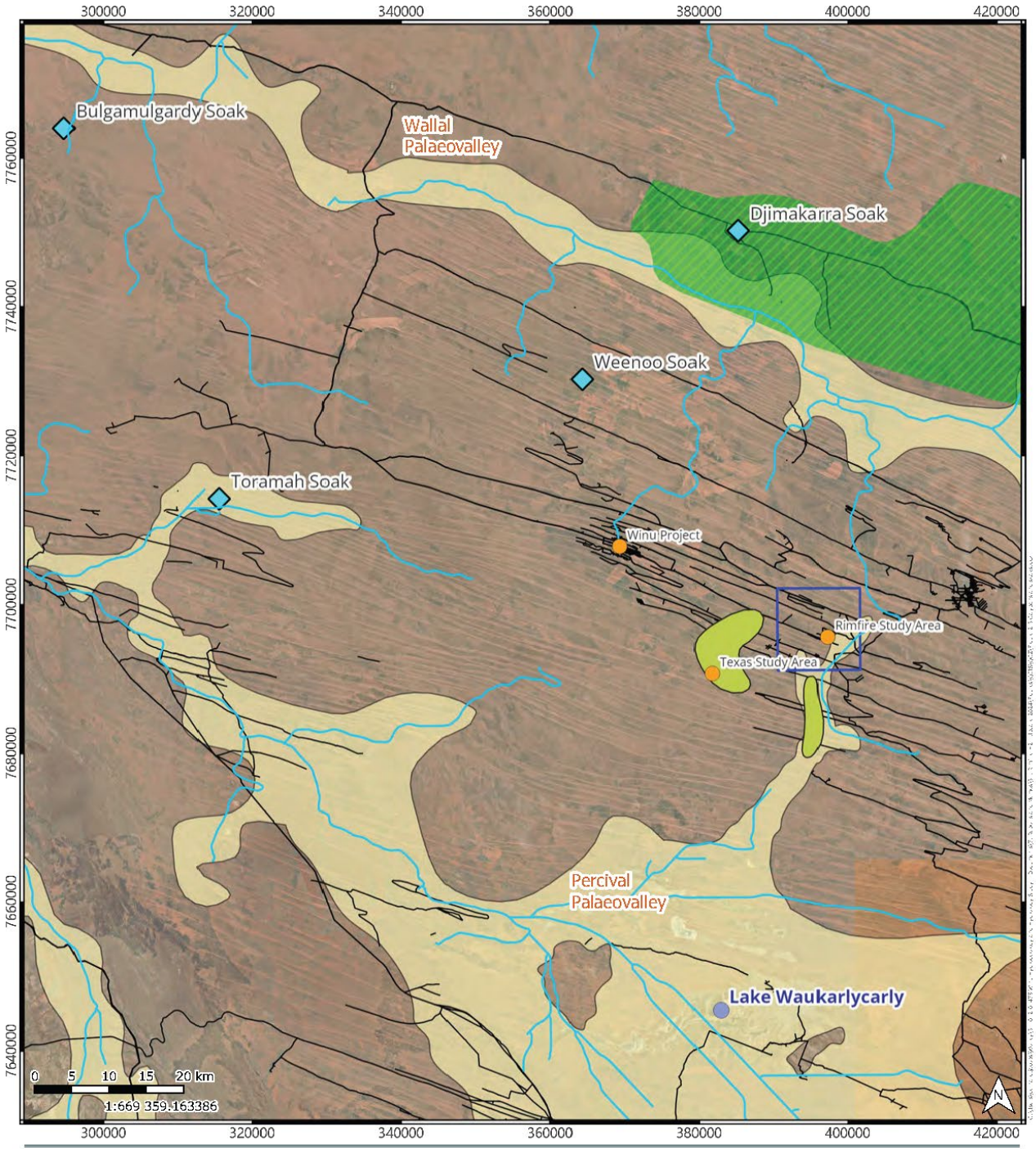
High intensity rainfall events within the Project Site may result in ponding in topographical depressions followed by infiltration to the groundwater system, or evaporation. Although annual runoff rates in the area are anticipated to be very low, the infrequent floods that do occur can result in significant inundation due to low channel grades and the widespread presence of topographic depressions (Golder Associates, 2020).

The Access Road is likely to be in a low rainfall/runoff location, with potential for high rainfall events to occur. There are no obvious drainage paths in the area, therefore flood risk potential is more likely due to ponding rather than flooding of any major drainage lines (Jacobs Group, 2019).

Eighty Mile Beach

The Eighty Mile Beach wetland system, 135 km north-west of the Project Area the RAC, is a Ramsar-listed site. This wetland and marsh system includes intertidal mudflats along Eighty Mile Beach and Mandora Salt Marsh, also known as Walyarta. Both surface water and groundwater feed the Mandora Salt Marsh and Walyarta wetland.

The Access Road lies partially within the Pilbara Surface Water Area proclaimed under the RIWI Act. This area lies mainly within the Sandy Desert Lake Dora catchment of the Sandy Desert Basin with a very small portion within the De Grey River catchment of the De Grey River Basin.



Legend

- Site locations
- Surface drainage
- Soaks
- Lake Waukarlycarly
- Claypan occurrence area
- GDE boundaries
- Study area
- Tracks
- WASANT Palaeovalleys 2012

Surface water and drainage features

Rimfire H3 Hydrogeological Assessment

Project No.	Client	Figure No
311012-01475	Rio Tinto Copper	2-3

Notes:
Project CRS: GDA94 / MGA zone 51
Last Saved: 11/08/2024, 13:37

References
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Consultant: worley consulting
Client: RioTinto

Figure 3-12: Surface Water Features in Proximity to the Winu Project

Implications for Closure

The surface water assessments and modelling completed to date highlight the following implications for closure:

- Further engagement with DMPE and Nyangumarta People will be required to determine a risk-based approach to managing flood events that could report to the pit void, or pond against the closure safety bunds.

3.2.4.2. Hydrogeology

Regional Groundwater setting

The Project and its surrounds are located within the Anketell Shelf subdivision of the Canning Basin, which comprises metasedimentary and intrusive rocks. The Project is located along the eastern margin of the Anketell fault which separates the stratigraphic units of the Barnicarndy Graben in the west to the Anketell Shelf in the east. Regional tectonic movement and development of the present-day Anketell Shelf and Barnicarndy Graben created structural, brittle deformations within the Proterozoic basement (metasediments). The brittle deformations are inferred to have enhanced permeability in both the fresh and weathered metasediments (Worley, 2024b).

There are four Palaeovalley aquifers that occur within the Winu region; Cudialgarra, Mandora, Percival and Wallal. Palaeovalleys are geologically ancient river valleys that have become buried by the accumulation of sediment (Geoscience Australia, 2014). These sediments commonly form good quality aquifers which can store significant quantities of groundwater. The Proposal is located between the Percival and Wallal, with Percival occurring to the south and Wallal to the north. The characteristics and hydraulic properties of these aquifers are not well understood beyond their physical location and that they are likely to occur above the regional groundwater levels recorded within the Canning-Wallal Aquifer (Golder Associates, 2022a).

The Canning-Wallal Aquifer is the predominant groundwater resources for the region and is continuous across the Canning Basin, with an approximate thickness between 30-100 m. The aquifer occurs within the various cemented and uncemented sandstones of the Canning Basin, with the saturation thickness increasing in the aquifer's northern limits as the sandstone layers deepen (Golder Associates, 2020). For most of its extent the aquifer is unconfined until it is overlayed by the Jarlemai Siltstone and separating it from the Broome Sandstone unconfined aquifer. Despite this hydraulic connectivity is maintained between the Canning-Wallal and Broome Sandstone aquifers (Golder Associates, 2020).

The metasedimentary rocks of the Yeneena Basin form a fractured rock aquifer, with a thickness of >100 m and primarily consists of metasiltstones and metasandstones (Golder Associates, 2020). Most of the Metasediments Aquifer is confined by the low permeability Permian mudstone unit. This unit is discontinuous so that in its absence hydraulic connectivity is maintained with the overlying Canning-Wallal aquifer (Golder Associates, 2020). The aquifer is also intruded by granites which are likely to form an impermeable barrier to the movement of groundwater throughout the aquifer.

Local groundwater setting

The MIA is divided into seven hydro stratigraphic units (HSU) based on lithology and their hydrogeological function; Quaternary aeolian sand, silcrete/ferricrete, sandstone, Permian mudstone, mafic intrusions, Proterozoic metasediment, and granite. The Rimfire area is divided into six HSU based on lithology and their hydrogeological function; Quaternary aeolian sand/silcrete/sandstone, mudstone, weathered metasediment, metasediment, weathered granite, and fresh granite (Worley, 2024b).

The MIA is conceptualised as having groundwater throughflow occurring within two main aquifer systems, the unconfined Permian Sandstone Aquifer and the Proterozoic Metasediments Aquifer. The two aquifer systems are separated by the Permian mudstone, where present. The mudstone unit thickness varies significantly (>200 m) toward the west, coinciding with the Anketell Fault and the

Barnicarndy Graben. The Rimfire is conceptualised as having groundwater throughflow occurring within one main aquifer systems, the Proterozoic Metasediments Aquifer.

The Winu Project will rely on dewatering of the pit and an additional bore field to supply water to the processing plant during the operational period. Water abstraction will cease at the completion of operations (inclusive of any processing of stockpiled materials).

The Project Area occurs in the Canning-Kimberley Groundwater Sub-Area of the Canning-Kimberley Groundwater Area (Golder Associates, 2022a). Within the Canning-Kimberley Groundwater Area there are approximately 21 licence holders that abstract water from the Canning-Wallal aquifer (Department of Water (DoW), 2023).

Testing by the DoW (Department of Water (DoW), 2016) indicated the Wallal Aquifer is homogeneous and highly transmissive, with water levels recovering immediately after drawdown. This suggests large volumes can be discharged quickly and over extended periods with little to no impact.

Table 3-7: Key Aquifer Characteristics at the MIA and Rimfire (Worley, 2024b)

Element	MIA		Rimfire
Aquifer	**Unconfined Sandstone Aquifer**	**Proterozoic Metasediment Aquifer**	**Proterozoic Metasediment Aquifer**
Groundwater recharge	Recharge to the groundwater system cannot be accurately determined, however it is expected to occur episodically following cyclone events, where rainfall has infiltrated sufficiently to overcome the high rates of evapotranspiration. Recharge rates of between 0.4 to 2.4% of mean annual rainfall (1.5 to 8.7 mm) are interpreted by isotope studies.		Recharge to the groundwater system at Rimfire has not been quantified due to the lack of significant rainfall events following the completion of the monitoring bores which would provide the basis for evaluation of recharge signals in groundwater levels. Recharge is likely a combination of direct vertical infiltration and lateral throughflow from outcrop/subcrop(s) in the southeast.
Groundwater discharge	Lateral outflow is the main mechanism of groundwater loss from the area, in the absence of any significant abstraction or evapotranspiration occurring. evapotranspiration losses are expected to be minor in comparison to lateral outflow due to groundwater levels in the study area generally being around 50 m BGL, well below the extinction depth of the evapotranspiration process (generally 5 m). The potential evapotranspiration rate is an order of magnitude higher than rainfall, and it is likely that most of the rainfall would be removed by this process before any recharge takes place, with the potential exception of rainfall produced during cyclonic events.		The discharge mechanisms within the Rimfire area are expected to occur through three main pathways: lateral flow, evaporation and evapotranspiration and abstraction for mining purposes. Lateral flow is expected to be the main mechanism of groundwater loss from Rimfire. evapotranspiration losses are expected to be minor in comparison to lateral flow due to groundwater levels around Rimfire generally being below 15 m BGL, beyond the extinction depth of the evapotranspiration processes of 5 m BGL. However, approximately 2 km south of the Rimfire area, evapotranspiration losses are possible due to the shallow groundwater level (<5 m BGL).
Flow direction	Gravimetric, flowing north-northwest to the Indian Ocean.	Gravimetric and pressure driven, depending on the presence and thickness of the overlying Permian mudstone layer. Flow direction is also toward the north-northwest. The groundwater gradient across the MIA is approximately 0.0016 (i.e., 1.6 m per 1000 m).	Groundwater flow direction is regionally from the south-southeast to the north-northwest, aligned with the inferred recharge source(s) in the southeast. Locally there may be some flow southeast toward the Percival Palaeovalley, the lowest topographical feature in the area and where groundwater is close to surface. The groundwater gradient across the Rimfire study area is approximately 0.0025 (i.e., 2.5 m per 1000 m).
Water levels	Groundwater levels range between 252 m AHD to the east to 173 m AHD to the Northwest in the Winu North area. Groundwater depths range between 20 to 50 m BGL. Upward leakage through the mudstone layer is possible in areas where the metasediment aquifer is sufficiently pressurised, and the mudstone is silty/weathered/thin.		Groundwater levels range between 237 m AHD to 251 m AHD. The groundwater depths range between 17 m BGL in the southeast to 43 BGL in the north, with no consistent confining layer. Shallower groundwater levels in the southeast correlate with Percival Palaeovalley system suggesting the presence of a shallow/perched system.

Groundwater-surface water interaction	No significant groundwater-surface water interaction is present around the MIA, based on the observed water levels and the absence of any groundwater supported hydrological features. This may change toward the southeast, where shallow groundwater levels have been recorded. The shallow groundwater occurrence is currently poorly understood; however, it is considered likely to be a combination of low topography and potentially perched groundwater within the Percival Palaeovalley. Groundwater-surface water interaction is likely to be spatially constrained to areas with shallow groundwater levels (below 5 m BGL) and temporally constrained during and immediately following periods of intense rainfall and/or cyclonic events.		Groundwater surface water interaction is unlikely within the majority of the Rimfire area based on the observed water levels and the lack of any surface hydrological features. There may be some occasional interaction approximately 2 km south of the Rimfire area where groundwater levels are shallow (below 5 m BGL). This interaction is temporally limited, occurring during and immediately following periods of intense rainfall and/or cyclonic events.
Salinity and pH	Circum-neutral at 7.6 pH (median) but can range between 6.6 to 8.5. The median EC is 700 µS/cm (median) but can range between 400 to 1,800 µS/cm.	Confined: Circum-neutral at 7.8 pH (median) but can range between 4.7 to 11.8. The median EC is 1,500 µS/cm but can range between 300 to 7,100 µS/cm.	Groundwater in the Rimfire area is fresh, with an EC ranging between 580 and 1,330 µS/cm, and a neutral to slightly basic pH between 7.4 to 8.0. Groundwater has largely a sodium-potassium chloride signature, which indicates the presence of dissolved salt in the system, likely attributed to factors relating to evapoconcentration and/or episodic flushing of salts from unsaturated zone.
		Unconfined: Similar pH to confined but is slightly fresher, with a median EC of around 1,400 µS/cm (ranges between 500 to 1,700 µS/cm).	

Implications for closure

Based on available data, groundwater factors that require consideration for closure include:

- Alteration of groundwater levels for mine pit dewatering and water supply within the Project Area is not expected to impact any soaks or groundwater dependent ecosystems
- The drawdown extent within the metasediments aquifer from mine dewatering is predicted to be limited to the immediate surrounding area, with a maximum drawdown of 1 m at a location 14 km northwest of project area
- A pit lake will develop after mining; water levels in this lake will not rise enough to overtop and are predicted to recover to below the pre-mining water table. The pit lake formed post-mining is predicted to be a terminal groundwater sink
- Groundwater modelling forecasts that groundwater quality will deteriorate over time but be restricted to the local pit void area.

The pit lake water quality is not predicted to result in any ecological impacts, but potential post mining land uses will be limited. Refer to Section 8.1.1 for more information on the pit void and associated waterbody.

3.2.5. Flora and vegetation

A number of botanical surveys have been conducted across the Winu Project in previous years, from 2017-present, including Detailed Flora and Vegetation Surveys within and outside the Development Envelope. The Proponent commissioned Western Botanical to consolidate all previous botanical survey and to address any gaps in existing survey work, with the objective of bringing all components of the Winu Project to 'Detailed' survey level. This consolidated report is titled the Winu Project Detailed Flora and Vegetation Assessment (Western Botanical, 2025).

3.2.5.1. Vegetation systems

The first broad-scale vegetation mapping of Western Australia was conducted by J.S. Beard in 1979. The Winu Project area extends across five of Beards Vegetation Systems. Table 3-8 describes their distribution within the Project Area.

Table 3-8: Beard Vegetation Mapping that Occurs within the Winu Project area (Beard, J.S., 1979)

Vegetation System	Description	Area (ha) within Project	% of Project Area	% of Current Extent within Project Area
Great Sandy Desert 134	Mosaic: Hummock grasslands, open low tree steppe; Desert Bloodwood and Feathertop Spinifex (*Triodia schinzii*) on sandhills/Hummock grasslands, shrub steppe; mixed shrubs over spinifex between sandhills	19,245.86	81.38	7.88%
Mandora East 80	Hummock grasslands and low tree steppe with Desert Walnut over soft spinifex between sand ridges	632.35	2.68	0.27%
Mandora East 101	Hummock grasslands and shrub steppe with *Acacia pachycarpa* over soft spinifex	663.92	2.81	0.27%
Mandora East 117	Hummock grasslands and grass steppe with soft spinifex	2,976.28	12.59	1.22%
Pindan 32	Pindan sandplain with Acacia shrubland with scattered low trees over Triodia spp.	130.66	0.55%	0.05%

3.2.5.2. Vegetation associations

A total of 41 vegetation associations have been identified and mapped within the Project (Western Botanical, 2025). Approximately 102 ha of the Winu Project Area comprises disturbed areas, including roads and tracks, 100.5 ha of which are inside the Development Envelope.

Table 3-9 describes the vegetation associations identified through survey work to date.

Table 3-9: Consolidated List of Vegetation Associations Occurring within the Winu Project Area.

Landform	Vegetation Code	Vegetation Association Description
Linear Sand Dunes	D1	*Corymbia chippendalei* Low Open Woodland over *Triodia schinzii*
	D2	*Owenia reticulata* Scattered Low Trees over *Triodia schinzii*
	D3	*Grevillea stenobotrya, Grevillea wickhamii* & *Acacia anaticeps* Tall Shrubland over *Triodia schinzii*
	D4	*Melaleuca lasiandra* Open Low Shrubland over *Triodia schinzii*
Interdunal Plains	P1	*Acacia platycarpa* (*Acacia tumida* var. *kulparn*) Open Shrubland over *Triodia schinzii*

Landform	Vegetation Code	Vegetation Association Description
	P2	*Acacia ancistrocarpa* Tall Shrubland over *Triodia schinzii*
	P3	*Acacia drepanocarpa* subsp. *latifolia* Tall Shrubland over *Triodia schinzii*
	P4	*Acacia orthocarpa* Open Shrubland over *Triodia schinzii*
	P5	*Acacia* spp. Scattered Shrubs over *Triodia schinzii*
	P6	*Owenia reticulata & Erythrophleum chlorostachys Scattered Low Trees over Triodia schinzii (Triodia epactia)*
	P7	*Acacia ancistrocarpa* Low Open Shrubland over *Eulalia aurea* & *Triodia epactia*
	P8	*Acacia eriopoda* & *Acacia sericophylla* Tall Open Shrubland over *Triodia schinzii* (*Triodia epactia*)
	P9	*Acacia ancistrocarpa* & *Acacia monticola* Tall Open Shrubland over *Triodia schinzii* (*Triodia epactia*)
	P10a	*Corymbia zygophylla* Scattered Tree Mallees over *Triodia epactia*
	P10b	*Corymbia zygophylla* Scattered Tree Mallees over Triodia schinzii and *Triodia epactia (Acacia stellaticeps)*
	P10c	*Corymbia zygophylla* Scattered Tree Mallees over *Triodia schinzii*
	P10d	*Corymbia zygophylla* Scattered Tree Mallees over *Triodia brizoides*
	P11	*Grevillea refracta* (*Acacia ancistrocarpa* & *Acacia monticola*) Scattered Tall Shrubs over *Triodia epactia*
	P12	*Grevillea refracta*, *Acacia monticola* & *Acacia colei* var. *colei* Tall Open Shrubs over *Acacia adoxa* var. *adoxa* & *Triodia epactia*
	P13	*Gardenia pyriformis* subsp. keartlandii Scattered Low Trees over *Triodia schinzii*
	P14	*Acacia monticola* & *Acacia drepanocarpa* (*Acacia orthocarpa* & *Acacia ancistrocarpa*) Open Shrubland over *Triodia schinzii*
	P15a	*Corymbia candida* Open Low Woodland over *Triodia schinzii*
	P15b	*Corymbia candida* Open Low Woodland over *Acacia monticola* shrubland over *Triodia epactia*
	P15c	*Corymbia candida* Open Low Woodland over *Triodia brizoides*
	P16	*Eucalyptus odontocarpa* Low Mallee Woodland over *Triodia schinzii*
	P18	*Corymbia opaca* Open Woodland over *Triodia schinzii*

Landform	Vegetation Code	Vegetation Association Description
	P19	*Melaleuca lasiandra* Low Open Shrubland over *Triodia schinzii*
	P20	*Acacia ancistrocarpa* & *Acacia orthocarpa* Open Shrubland over *Triodia* spp.
	P21	*Acacia sericophylla* Open Shrubland over *Triodia schinzii*
	P22	*Acacia stipuligera* Open Shrubland over *Triodia schinzii*
Gentle Rocky Outcroppings	R1	*Acacia bivenosa* (*Acacia ancistrocarpa*) Low Open Shrubland over *Triodia brizoides* (*Triodia schinzii*)
	R2	*Grevillea wickhamii* Scattered Tall Shrubs over *Mirbelia viminalis* (*Acacia hilliana*) & *Triodia brizoides* (*Triodia epactia*)
	R3	*Acacia hilliana* (*Acacia adoxa* var. *adoxa*) Low Open Shrubland over *Triodia epactia*
	R4	*Ficus brachypoda* Low Open Woodland over *Acacia monticola*, *Grevillea pyramidalis* & *Triodia epactia*
	R5	*Acacia bivenosa* Scattered Low Shrubs over *Triodia brizoides* & *Triodia epactia* (*Triodia schinzii*)
	R6	*Grevillea wickhamii*, *Acacia monticola* & *Acacia ancistrocarpa* Shrubland over *Triodia epactia*
Claypans and Low-Lying Clay Flats	C1	*Eucalyptus victrix* Open Woodland over *Triodia epactia*
	C2	*Acacia bivenosa* Scattered Low Shrubs over *Triodia brizoides & Triodia epactia (Triodia schinzii)*
	C3	*Acacia bivenosa (Acacia stellaticeps*) Low Shrubland over *Triodia epactia*
	C4	*Acacia ancistrocarpa* Open Low Shrubland over *Eulalia aurea & Triodia epactia*
	C5	Claypan Playa (*Diplachne fusca subsp. muelleri, Eragrostis falcata)* with Scattered Herbs
	C6	Claypan (*Cullen pustulatum, Gossypium australe)* over *Eulalia aurea (Eragrostis xerophila)*

3.2.5.3. Vegetation condition

The Condition of the vegetation across the Winu Project is considered mostly Excellent (i.e., Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement); with the exception of cleared access tracks, drill pads and existing infrastructure areas which are considered Disturbed (Western Botanical, 2025).

3.2.5.4. Conservation significant ecological communities

No Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) protected by Federal or State legislation have been identified from surveys across the Winu Project area (Western Botanical, 2025).

3.2.5.5. Flora assemblage

Across the Winu Project area surveys to date, a total of 338 native flora species from 147 genera and 52 families have been recorded. A total of 64 flora species encountered during survey work have not been identified to species level.

The Fabaceae family was the most dominant across the Project area, with a total of 75 different species belonging to this family. This was followed by the Poaceae family, with a total of 53 species. Acacia was the most prevalent genus across the Project Area, with 33 different Acacia species recorded to date.

3.2.5.6. Conservation significant flora

A total of 11 Priority flora species have been encountered across the Project to date. This includes one Priority 1 species, one Priority 2 species and seven Priority 3 species (Western Botanical, 2025) (Table 3-10, Figure 3-13).

A total of 512,311 *Goodenia hartiana* (P2) have been recorded during botanical assessments across the Winu Project, making it the most abundant Priority species recorded across the Project. 292,462 recordings of this species were inside the current Development Envelope, while 219,849 were outside. *Goodenia hartiana* (P2) is common across the Winu Project, occurring within the various interdunal sandplain Vegetation Associations. In many cases, it was observed as an early and prolific post-disturbance colonizer. The second most abundant priority species, *Cynodon anisocarpus* (P1) has been recorded a total of 431,056 times (Western Botanical, 2025).

Table 3-10: Priority Flora Recorded within the Project Area

Taxon	Priority	Recorded within the MIA	Recorded within the RAC
Cynodon anisocarpus	P1	X	X
Goodenia hartiana	P2	X	X
Bonamia oblongifolia	P3		X
Comesperma sabulosum	P3	X	
Corynotheca asperata	P3	X	
Dasymalla chorisepala	P3	X	X
Indigofera ammobia	P3	X	X
Polymeria sp. Broome (K.F Kenneally 19759)	P3		X
Synostemon arenosus	P3	X	
Terminalia kumpaja	P3		X
Tribulopis marliesiae	P3	X	X

3.2.5.7. Groundwater dependent ecosystems

A Groundwater Dependent Ecosystem (GDE) is defined as an ecosystem that relies on groundwater for some or all its water requirements. Terrestrial GDEs refer to ecosystems that rely on the subsurface presence of groundwater, this includes all vegetation ecosystems (Bureau of Meterology, 2024b).

A small section of the Development Envelope is classified as having low potential to support a terrestrial GDE, namely where the RAC (along Nyangumarta Highway) intersects a mosaic of small areas mapped as such (Bureau of Meterology, 2024b).

No other areas of the Development Envelope have been identified as having potential to support a terrestrial GDE (by the GDE Atlas). Due to the depth to groundwater in the area (> 40 m within the unconfined aquifer and > 50 m within the confined aquifer), it is considered unlikely that vegetation within the vicinity of the Development Envelope is dependent on groundwater (Golder Associates, 2022a).

The watertable south of the Development Envelope in the Percival Palaeovalley is the only area within the vicinity of the Proposal that is shallow enough to potentially support GDEs, unlike the greater regional watertable (Worley, 2025).

One vegetation type, P19 (*Melaleuca lasiandra* Shrubland over *Triodia schinzii*), within the Rimfire Borefield, has the potential to contain GDV, and a very similar vegetation type occurs throughout the Percival Palaeovalley south of Rimfire (described as; *M. lasiandra* dominated Shrublands over *Triodia epactia* hummock grasslands) (Western Botanical, 2025). No typical GDE indicator species were mapped within P19 inside the Development Envelope, however the extended ‘P19’ area to the south has been observed to support scattered *Eucalyptus victrix* in association with *M. lasiandra*.

Mapping the Melaleuca-dominated vegetation of the palaeovalley revealed the presence of *Eucalyptus victrix* and *Melaleuca* sp. within multiple vegetation units, but no other potential GDE indicator species were recorded (Western Botanical, 2025). Because of this, the Proponent considers the potential for true GDEs to be present in the Percival Palaeovalley to be low, however it is also acknowledged that understanding of the hydrogeology of the palaeovalley system and its vegetation is limited.

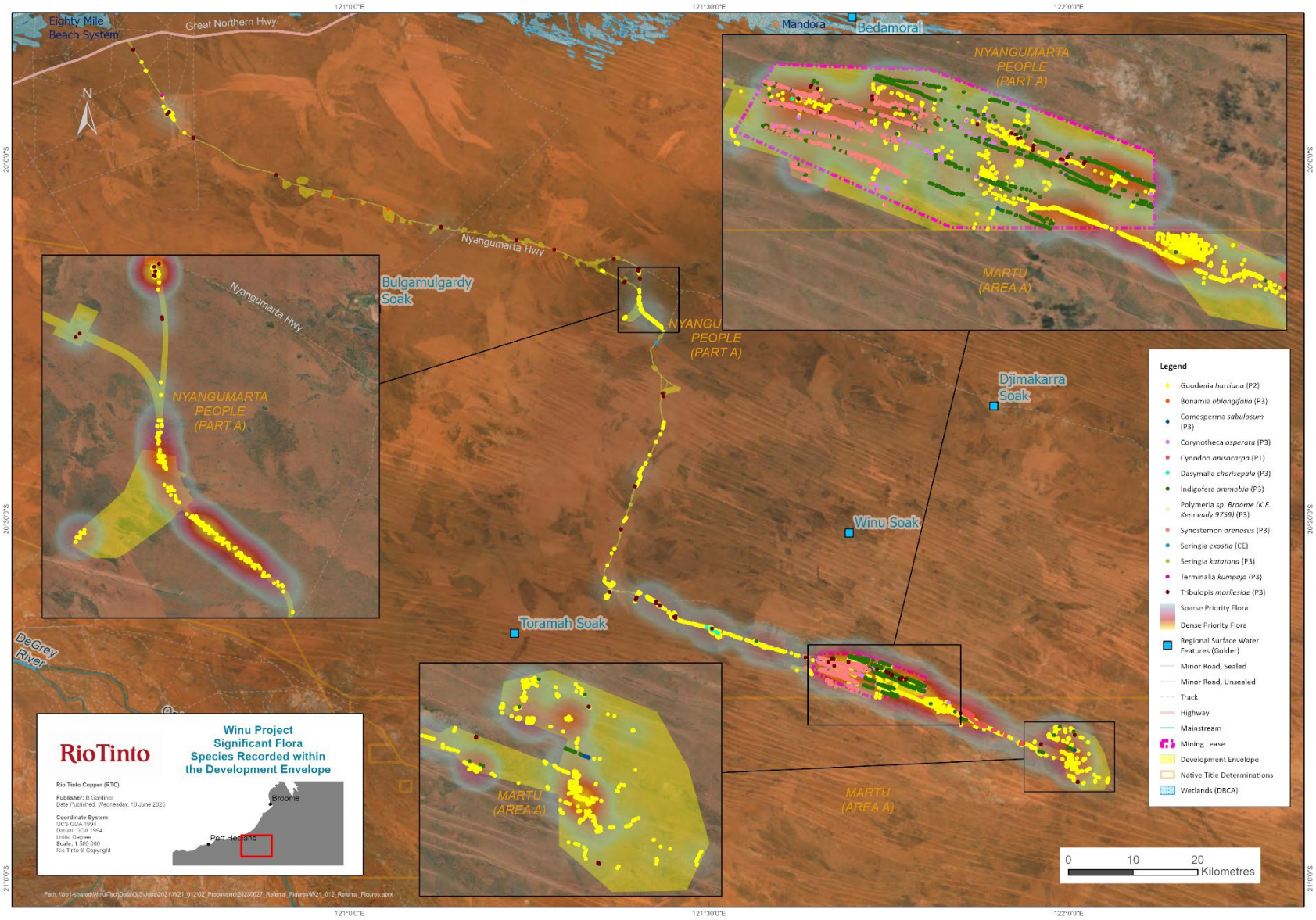


Figure 3-13: Winu conservation significant flora

3.2.5.8. Weeds

A total of four weed species have been encountered across the Winu Project to date. These include 30 records of Cenchrus ciliaris (Buffel Grass), 121 records of *Citrullus amarus* (Bitter Melon), 76 records of *Dactyloctenium aegyptium* (Coast Button Grass) and two records of *Solanum lycopersicum* (Tomato). Of these, the *Cenchrus ciliaris, Citrullus amarus* and *Solanum lycopersicum* were encountered at the Winu Camp and removed immediately. *Citrullus amarus* and *Dactyloctenium aegyptium* were predominantly encountered at the Wallal Tanks area, within the pastural lease area on the Nyangumarta Highway (Western Botanical, 2025).

Prior to botanical surveys, the Winu Project was considered relatively weed-free, with the potential introductions of weeds to the Project being recognised as a significant biodiversity risk. Targeted weed monitoring surveys are being conducted annually.

3.2.5.9. Culturally Significant Species

Ethnobotanic surveys of the Nyangumarta Warrarn Indigenous Protected Area have documented numerous culturally significant species occurring in the area, principally those with traditional uses.

A total of 41 flora species considered to have ethno-botanical significance occur across the Winu Project. All flora taxa of ethno-botanical significance recorded within the Project Area are both common and widespread.

3.2.5.10. Fire

The Great Sandy Desert is subject to frequent fire events. According to regional fire data, majority of Winu Project has been burnt at least once in the last decade, with some areas burnt as many as four times.

3.2.5.11. Implications for Closure

Closure related implications of the Winu Project for vegetation and flora include:

- Clearing of up to 4,868 ha of native vegetation, of which the majority is in excellent condition. Based on current mapping, the Project is expected to have negligible cumulative effects at the regional scale. Approximately 99.5% of native vegetation is estimated to remain intact within the three subregions following the implementation of the Project, including at least 94.7% of the pre-European extent of each vegetation association expected to remain intact (Beard, J.S., 1979)
- The Proponent plans to undertake progressive rehabilitation and revegetate using local native species. This will include trials of relevant, site-specific techniques to ensure the most effective, self-sustaining methods are used for full scale progressive and final closure rehabilitation efforts. There will be an early focus on redundant disturbed areas, post-construction
- Additional progressive rehabilitation opportunities will be identified during detailed mine planning throughout the life of operations. Topsoil will be recovered and stockpiled before all clearing activities to ensure growth media is available for revegetation of disturbed lands and permanent landforms post-mining
- The potential for localised impacts from dust and the introduction of weeds during closure execution. The Proponent will develop and implement a co-designed Weed Management Plan (WMP) with the Nyangumarta and Martu Traditional Owners to minimise the introduction of weeds throughout the life of the Project, inclusive of Closure. The Weed Management Plan will focus on rigorous monitoring and prevention controls and where required, early eradication
- Alteration of groundwater levels for mine pit dewatering and water supply within the MIA is not expected to impact any GDEs/GDV. The extent of drawdown is predicted to be a maximum drawdown of 1 m at a location 14 km north of project area

- Controls to prevent the introduction of weed species are essential at the entrance of the NWIPA to ensure soil and weed seeds are removed from vehicles prior to travel through the Great Sandy Desert bioregion.

3.2.6. Fauna and habitat

A significant amount of biological survey work has been undertaken by Biota in the Winu Development Envelope and the broader locality between 2017 and 2024. For the purposes of environmental impact assessment.

Previous surveys that were conducted to inform the Winu Terrestrial Fauna Consolidation Report Biota (Biota, 2026a)include the following:

- Asian Renewable Energy Hub Terrestrial Fauna and SRE Fauna Survey (Biota, 2018a)
- Asian Renewable Energy Hub Migratory Shorebirds and Waterbirds Study (Biota, 2018b)
- Asian Renewable Energy Hub Detailed Fauna Assessment (Biota, 2020b)
- Winu Project Fauna Assessment (Biota 2021)
- Winu Project Bilby Abundance Study (Biota 2020)
- Winu Project Area Extension Targeted Fauna Survey (Biota 2022c);
- Winu Project Bilby Population Abundance Study (Biota 2023a)
- Winu Project Water Borefield Targeted Fauna Survey (Biota 2023b)
- Winu Project Native Vegetation Clearing Permit Fauna Clearance Survey (Biota 2023c)
- Terrestrial Fauna Gap Closure Survey (Biota 2023d)
- Winu Terrestrial Fauna Interim Consolidation Report (Biota 2023d)
- Winu Project Bilby Population Abundance Study (Biota, 2024).

3.2.6.1. Fauna assemblage

A total of 151 vertebrate fauna species have been recorded to date from surveys across the Development Envelope as summarised in Table 3-11.

Table 3-11: Summary of Vertebrate Fauna Species

Fauna Group	Status	Number of Species	Number of Conservation Significant Species
Amphibians	Native	1	-
Reptiles	Native	69	1
Ground-dwelling Mammals	Native	15	4
	Introduced	5	-
Bats	Native	5	-
Birds	Native	56	6
Total		**151**	**11**

3.2.6.2. Terrestrial fauna habitat

Five broad habitat types have been mapped across the Winu Project Area based on ground-truthed fauna habitat assessments, land systems and geological mapping (Figure 3-14 (Biota, 2026a):

- Shrub and Spinifex on Sandplain
- Inland Sand Dune
- Gravelly Lateritic Rises
- Clayey Sandplain with Termitaria
- Ephemeral Claypan.

3.2.6.3. Significant fauna habitat features

Critical habitat for the Greater Bilby, consisting of Shrub and Spinifex on Sandplain and Inland Sand Dune habitat types, has been identified within the Development Envelope, spanning an area of 20,033 ha. Outside these and other broad habitat types, no distinct significant habitat features such as rocky outcroppings, caves or permanent/persistent surface water bodies or waterways have been identified within the Development Envelope (Biota, 2026a).

Roosting and Foraging habitat for Night Parrot, consisting of 2,168 ha of Roosting and 307 ha of Foraging habitat has also been mapped outside of the Development Envelope, approximately 14 km southeast of the MIA and 8 km southwest of Rimfire.

3.2.6.4. Conservation significant fauna

Of the 157 vertebrate fauna species recorded within the Project Area, eight species of significance were recorded, whilst an additional 11 species were considered likely or to have potential to occur within the Project Area (Table 3-12; Figure 3-15).

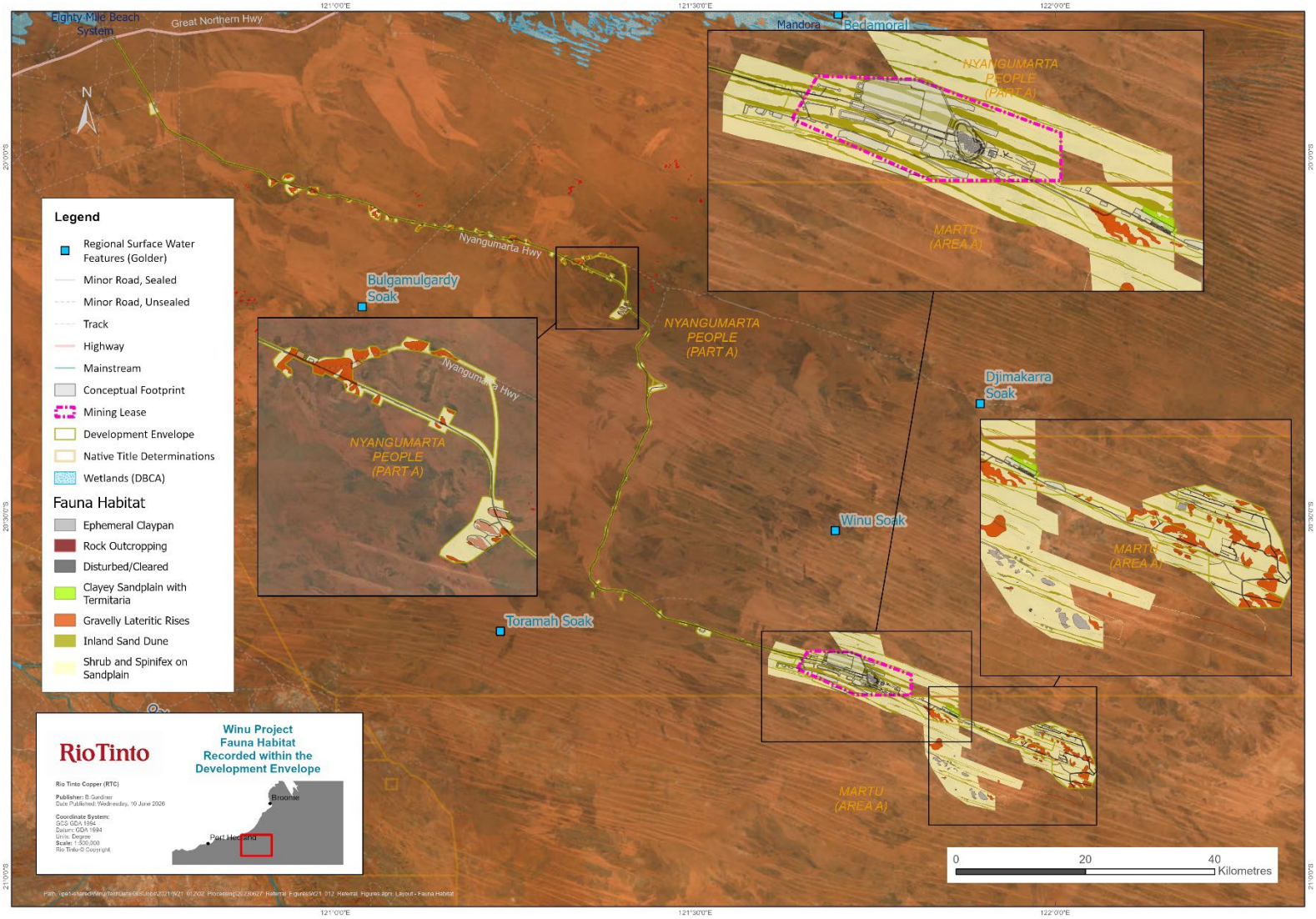


Figure 3-14: Fauna Habitat Recorded within the Winu Project Area

Table 3-12: Significant Fauna Recorded or Considered to Likely or Possibly Occur within the Proposed Project Area

Species	Conservation Status	Presence within Development Envelope	Comment
Mammals			
Black-footed Rock-wallaby/Moororong (*Petrogale lateralis lateralis)*	Endangered (EPBC Act and BC Act)	**Likely to Occur** within RAC **Would not occur** within the MIA	This species is known to occur in a series of isolated, patchily distributed populations in Western Australia and the Northern Territory (Biota, 2026a). The species was recorded immediately northwest of the eastern-RAC section of the Development Envelope. Individuals are also likely to occur within small rocky outcropping habitat found immediately adjacent to the eastern RAC section. However, there have been no occurrences of this species recorded within the Development Envelope and there is also no rocky outcropping habitat that would be considered critical habitat for the species in this area.
Northern Quoll (*Dasyurus hallucatus*)	Endangered (EPBC Act and BC Act)	**Likely to Occur** within RAC **Would not occur** within the MIA	The species is known to occur throughout the Pilbara and north-west Kimberley regions of Western Australia. Although the species has been recorded immediately adjacent to the Development Envelope, it is considered likely that the species only occurs primarily as a transient visitor and/or at low density, given the paucity of records despite extensive survey effort. Moreover, all suitable habitat in the locality occurs outside the Development Envelope (Biota, 2026a).
Greater Bilby (*Macrotis lagotis*)	Vulnerable (EPBC Act and BC Act)	**Recorded** within MIA and RAC	This species often occupies only temporary home ranges and relatively rapid changes in distribution have been observed in response to habitat resources. Evidence of the Bilby was recorded from burrows, scats and diggings at the western and eastern ends of the Development Envelope, within the Shrub, and spinifex on sandplain habitat type. Although suitable habitat was found and searched extensively, no further evidence was found over the remainder of the Development Envelope. Evidence of the Bilby was also found in multiple locations surrounding the Development Envelope (Biota, 2026a).
Northern Marsupial Mole (*Notoryctes caurinus*)	Priority 4 (DBCA)	**Recorded** within MIA and RAC	This species is adapted to an almost entirely subterranean habitat, inhabiting dunes and, to a lesser extent, adjacent swales where sand is suitably deep and loose. The Northern Marsupial Mole is cryptic in nature. Mole holes have been recorded within the Development Envelope (Biota, 2026a).
Brush-tailed Mulgara (*Dasycercus blythi*)	Priority 4 (DBCA)	**Recorded** within MIA **Likely to Occur** within RAC	This species is known to inhabit spinifex grasslands on sandy plains and sandy swale between low dunes from south-western Queensland across the Simpson, Tanami and Great Sandy Deserts of southern and central Northern Territory and central Western Australia. It is also known to inhabit areas on gibber (rock and pebble covered flat plains). It is closely associated with gently sloping to flat topographic positions rather than steep-sided sand ridges (Pavey, CEM, Cooper, Cole, & McDonald, 2011). This species has been recorded within the MIA.

Western Pebble-mound Mouse (*Pseudomys chapmani*)	Priority 4 (DBCA)	**Recorded** within RAC	This species occurs on gentle slopes of rocky ranges where hard spinifex covers the ground with a stony mantle and vegetation. The Western Pebble-mound Mouse is known to occur widely throughout the Pilbara region and into the Gascoyne. Both active and inactive mounds have been recorded within the Development Envelope.
Spectacled Hare-wallaby (*Lagorchestes conspicillatus leichardti*)	Priority 4 (DBCA)	**Likely to Occur**	There are scattered records of this species from the Kimberley and Pilbara regions of Western Australia. This species was recorded via tracks from one location in the locality surrounding the DE. This species can be hard to detect and is most commonly recorded incidentally when flushed from its daytime shelter in spinifex hummocks. Considerable walking of spinifex habitat targeting the Bilby was conducted during the current survey, with no more detections found (Biota, 2026a).
Short-tailed Mouse (*Leggadina lakedownensis*)	Priority 4 (DBCA)	**Potential to Occur** within RAC	In Western Australia the distribution of *Leggadina lakedownesis* includes the Pilbara and Kimberley regions, although historical NatureMap records also place it within the Great Sandy Desert. Regional records suggest the primary habitat for the species includes areas of cracking clay and adjacent habitats. However, other sources indicate habitat also includes open tussock and hummock grassland areas, Acacia shrubland and savannah woodlands, sandy soils and cracking clays. Some areas of mixed grasslands and shrublands occur through undisturbed portions of the RAC, although these are not entirely typical habitat for this species. Given this, a precautionary assessment was that this species may occur (Biota, 2026a).
Reptiles			
Dampierland Plain Slider (*Lerista separanda*)	Priority 2 (DBCA)	**Recorded** within MIA and RAC	Records of this species are scarce. The records within the Development Envelope indicate that the species' distribution is broader than what was previously known (Biota, 2026a).
Birds			
Night Parrot (*Pezoporus occidentalis*)	Endangered (EPBC Act) Critically Endangered (BC Act)	**Likely to Occur** within Rimfire Borefield	This species has been identified through acoustic recordings adjacent to the Development Envelope, south of the Rimfire Borefield (Biota, 2025b). Suitable habitat for the Night Parrot has been mapped adjacent to the Rimfire Borefield including suitable potential roosting areas consisting of large spinifex hummocks that are structurally complex, with a range of different sizes and formations, including ring formations. Adjacent to some of these potential roosting areas are suitable foraging areas consisting of depressions and run-off areas filled with native grasses. However, despite targeted survey effort, the species has not been recorded within the Development Envelope and, as there is no suitable habitat within the Development Envelope, is likely to occur in the Rimfire Borefield area as foraging visitors or flyovers only.
Grey Falcon (*Falco hypoleucos*)	Vulnerable (EPBC Act and BC Act)	**Likely to Occur** within the Development Envelope	This species typically occurs in timbered lowland plains, particularly Acacia shrublands near tree-lined watercourses. It has been observed hunting over a wide variety of habitats including treeless plains and wetlands (Garnett, Szabo, & Dutson, 2010). A single record of the species was observed within the MIA. It is likely to occur in the Development Envelope as a foraging

			visitor given the diverse range of habitats utilised, however no suitable nesting habitat (major drainages) is present (Biota, 2026a).
Peregrine Falcon (*Falco peregrinus*)	Other specially protected species (BC Act)	**Likely to occur**	Regional records are known from the locality, however, core breeding habitat in high cliff faces is absent from the DE. The Peregrine Falcon is likely to occur as a foraging visitor in the Project Area(Biota, 2026a).
Princess Parrot (*Polytelis alexandrae*)	Vulnerable (EPBC Act) Priority 4 (DBCA)	**May Occur** within Development Envelope	This species is highly nomadic and occupies eastern deserts of WA. Habitat preferences include sand dunes and sand flats, which are both present in the Development Envelope and surrounding localities. Its nomadic nature means it could be present within the Development Envelope, where it would likely forage on spinifex during seeding events; however, it would not rely on the habitat present within the Development Envelope. This species was not recorded during any of the surveys, and there have been no records from the locality.
Oriental Pratincole (*Glareola maldivarum*)	Migratory (EPBC Act and BC Act) Marine (EPBC Act)	**Recorded** within RAC	This species is a non-breeding migrant to Australia. One specimen was recorded within the Development Envelope and the species has also been recorded in an adjacent locality. A suitable foraging habitat for the species exists across most of the Development Envelope, primarily in airspace of plains habitat; however, it is not considered dependent on this habitat.
Oriental Plover (*Charadrius veredus*)	Migratory (EPBC Act and BC Act) Marine (EPBC Act)	**Recorded** within MIA	This species forages on and over inland plains. It has been recorded on three occasions, inside and outside of the MIA section of the Development Envelope. There is also suitable foraging habitat in other parts of the Development Envelope, primarily in the ephemeral claypan and clayey sandplain with termitaria habitats.
Fork-tailed Swift (*Apus pacificus*)	Migratory (EPBC Act and BC Act)	**Likely to Occur** within the Development Envelope	This species is exclusively aerial within Australia. The species has been recorded from the locality surrounding the Development Envelope. While it is likely that this species may occur within the Development Envelope on occasion, it would not rely on the available habitat as it is restricted to the airspace.
Little Curlew (*Numenius minutus*)	Migratory (EPBC Act and BC Act) Marine (EPBC Act)	**Recorded** within the Rimfire Borefield	This species forages in large numbers on and over the plains inland from Eighty Mile Beach and Broome (approximately 250 km north of the Development Envelope). The species has been recorded in within the Rimfire Borefield and the locality surrounding the Development Envelope on multiple occasions (Biota, 2026a). Some suitable habitat exists within the Development Envelope, primarily in the ephemeral claypan and clayey sandplain with termitaria habitats. This species is considered likely to occur in the Development Envelope as a non-breeding visitor, primarily from September to April (Biota, 2026a).
Barn Swallow (*Hirundo rustica*)	Migratory (EPBC Act and BC Act)	**May Occur** within the Development Envelope	Although no Barn Swallows were recorded during any of the surveys, suitable habitat in the form of open country, low vegetation and man-made structures, is present within the Development Envelope, and there are known historical records from the locality (Biota, 2026a).

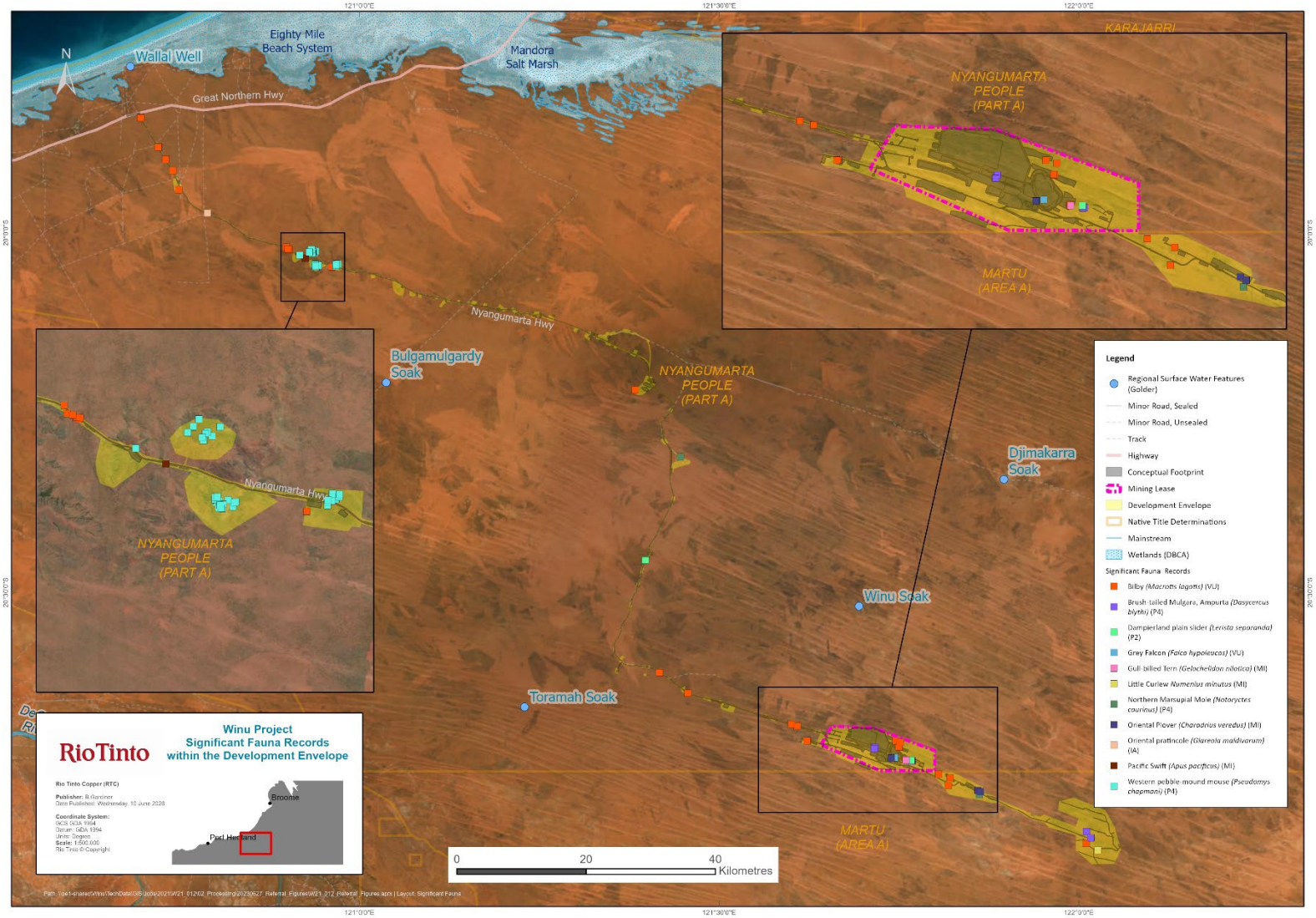


Figure 3-15: Significant Fauna Records within the Winu Project Area

3.2.6.5. Short range endemic fauna

A total of 23 taxa belonging to invertebrate groups prone to short-range endemism have been recorded and sequenced from within the Development Envelope, comprising 18 mygalomorph (trapdoor) spider taxa and five scorpion taxa (Biota, 2025c) (Table 3-13; Figure 3-16).

A total of 15 mygalomorph species are considered potential SREs, of which seven are known only from within the Development Envelope. The remaining species are widespread and are not considered SREs.

Two scorpion taxa are also potential SREs but have been previously recorded outside the Development Envelope from elsewhere in the region. The remaining three species are widespread and are not considered SREs.

These results are consistent with the overall character of the landscape within and adjoining the Winu area, which is dominated by very extensive and contiguous sandplain and interconnected linear dune habitats. These landforms have no obvious geographic barriers to dispersal that might restrict gene flow and promote short-range endemism (EPA, 2016), suggesting the low risk of species being restricted in distribution at a very small scale.

Table 3-13: Potential SRE Species Recorded within the Development Envelope

Family	Species	Recorded only within CF*	Recorded within CF & DE	Recorded within DE but not CF*	Recorded outside DE	Habitat Type
Spiders						
Barychelidae	*Idommata* sp. B39	-	-	✓	-	Shrub on Spinifex on Sandplain
Anamidae	*Aname* sp. N138	-	-	✓	-	Shrub on Spinifex on Sandplain
	Aname sp. N140	-	-	✓	-	Shrub on Spinifex on Sandplain
	Aname sp. N149	-	-	✓	-	Inland Sand Dune
	Aname sp. N152	-	-	✓	-	Shrub on Spinifex on Sandplain
	Aname sp. N153	-	-	✓	-	Shrub on Spinifex on Sandplain
	Genus? sp. N150	-	-	✓	-	Shrub on Spinifex on Sandplain
	Aname sp. N139	-	-	-	-	Shrub on Spinifex on Sandplain
	Aname sp. N147	-	-	-	✓	Inland Sand Dune
	Aname sp. N148	-	-	✓	✓	Shrub on Spinifex on Sandplain, Inland Sand Dune
	Aname sp. H-N205	-	-	-	✓	Shrub on Spinifex on Sandplain

Family	Species	Recorded only within CF*	Recorded within CF & DE	Recorded within DE but not CF*	Recorded outside DE	Habitat Type
	Aname sp. H-N206	-	-	-	✓	Shrub on Spinifex on Sandplain
	Kwonkan sp. N151	-	✓	-	✓	Inland Sand Dune, Shrub on Spinifex on Sandplain
Idiopidae	*Idiosoma* sp.H-I90	-	-	-	✓	Shrub on Spinifex on Sandplain
	Idiosoma sp.H-I91	-	-	-	✓	Shrub on Spinifex on Sandplain
Scorpions						
Urodacidae	*Urodacus* sp. 'telfer'	-	-	✓	-	Inland Sand Dune
	Urodacus 'yaschenkoi' species complex'	-	-	✓	-	Inland Sand Dune
Indeterminate SREs						
Buthidae	*Lychas* sp.	✓	-	-	-	Shrub on Spinifex on Sandplain
Anamidae	*Anamidae* sp.	-	-	✓	-	Shrub on Spinifex on Sandplain
Barychelidae	Barychelidae sp.	-	-	-	✓	Shrub on Spinifex on Sandplain

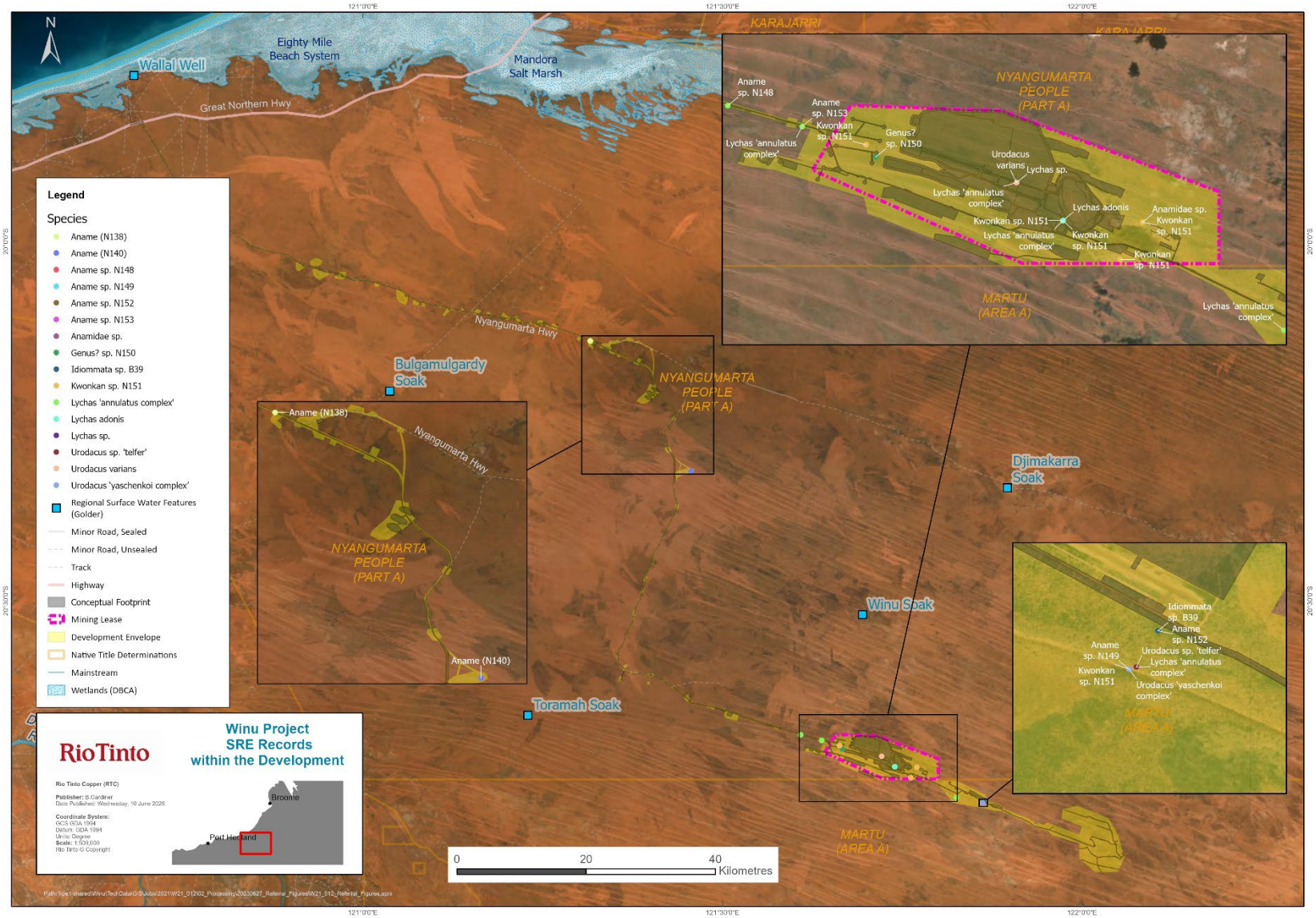


Figure 3-16: Short Range Endemic (SRE) Records within the Winu Project Area

3.2.6.6. Subterranean fauna

The Project is located in the Pilbara region, which is known to support highly diverse assemblages of subterranean fauna (EPA, 2016). The MIA and Rimfire sit within the Mackay subregion. The MIA lies in between the Percival and Wallal palaeodrainage lines (Biota, 2025c) (Biota, 2026a) and Rimfire is located north of the Percival paleovalley within the Anketell Shelf sub-division of the Canning Basin comprising of metasedimentary and igneous intrusive rocks (Worley, 2024b). These areas show no evidence of any association to calcrete deposits (Biota, 2025c; Biota, 2026a).

Six broad hydrogeological units have been defined within the Development Envelope (Worley, 2024b):

- Quaternary aeolian sand
- Permian unconfined sandstone (aquifer)
- Permian mudstone unit
- Proterozoic weathered metasediment (aquifer)
- Proterozoic fresh metasediment (aquifer)
- Mafic intrusions within the Proterozoic metasediments.

Both the MIA and Rimfire will utilise the Proterozoic metasediments aquifer. Near the MIA, the aquifer consists of upper weathered/altered section with underlying fresher metasedimentary rock (Biota, 2022c). The Rimfire will utilise an additional fractured granite aquifer that is considered as having the potential of being a partial product of paleo-hydrothermal activity as triggered by granite intrusion (Biota, 2022c).

Stygofauna

Subterranean fauna sampling within the MIA and Rimfire was considered to meet the State guidance requirements at the time with respect to overall number of sites, and coverage of impact areas and prospective habitat.

Stygofauna sampling occurred over three phases between September 2019 and September 2021within MIA (Biota, 2022c), and seven phases between May 2024 and November 2025 at Rimfire (Biota, 2026c).

Similar to potential habitat for troglofauna, the porous sandstone and tillite geological units within the MIA represents potential habitat for stygofauna. The sandstone unit occurring below the water table was assessed as Moderate for the potential to support stygofauna. The remaining geological units were assessed as Low to None for stygofauna prospectivity (Biota, 2022c).

The basic subterranean survey (Biota, 2022c) of the MIA found no stygofauna specimens were present in any samples throughout the MIA. Considering this, the likelihood of stygofauna occurrence within the MIA is considered Low, despite the sandstone unit representing the only potential habitat (Biota, 2022c).

Sandstone and granite geological units occurring below the water table at Rimfire are considered to have Moderate prospectivity as stygofauna habitat (Biota, 2022c). All other geological units at Rimfire are considered to have Low prospectivity as stygofauna habitat. A desktop study of the regional borefields indicated a moderate prospectivity of stygofauna presence at Rimfire (Biota, 2022c). The regional borefields Wallal and Texas were also surveyed for stygofauna after the desktop study, but surveys did not return any true stygobitic specimens from either regional borefield, and the likelihood of stygofauna presence is now considered low at Wallal and Texas (Biota, 2025a; Biota, 2023a).

Twenty-two stygofauna taxa have been identified at Rimfire to date, occurring within the Development Envelope and the Percival Palaeovalley to the south, represented by four orders comprising Amphipoda (1), Isopoda (2), Harpacticoida (12) and Cyclopoida (2) and one subclass; Oligochaeta (5) (Biota, 2026c). The overall richness and capture rate of taxa was considered low, with 18 of the 22 taxa recorded as singletons or from a single site. None of the stygofauna taxa recorded are listed or recognised as conservation priorities under state or federal legislation (Biota, 2026c).

Troglofauna

Troglofauna sampling occurred within the MIA occurred over two phases between September 2019 and October 2021.

The basic subterranean survey conducted by (Biota, 2022c) of the MIA recorded no troglobitic fauna specimens, which is consistent with the conclusions of the desktop studies.

Potential subterranean habitat within the MIA were represented in the sandstone and tillite geological units that appeared porous. The habitat prospectivity of the sandstone unit occurring above the water table was assessed as Moderate for troglofaunal occurrence. The other geological units within the MIA were assessed as Low to None for troglofaunal habitat prospectivity (Biota, 2022c).

The overall prospectivity of troglofaunal occurrence within the MIA is considered Low with the sandstone unit presenting the only habitat in which troglofauna may potentially occur (Biota, 2022c).

3.2.6.7. Introduced fauna

Five feral fauna species have been recorded within the Project Area (Biota, 2026a):

- *Felis catus* (Cat)
- *Vulpes vulpes* (European Red Fox)
- *Canis familiaris* (Dog/Dingo; naturalised exotic species)
- *Camelus dromedarius* (Dromedaru Camel)
- *Mus musculus* (House Mouse).

It is acknowledged that the dingo is a culturally important species and, from a Traditional Owner perspective, should not be classified as a feral or introduced species

3.2.6.8. Implications for closure

All significant fauna species that occur or are likely to occur within the Project Area may be affected by cumulative impacts from existing or foreseeable projects. Mitigation measures will minimise the impact on significant fauna species in the area during the operations phase. Implications for fauna at mine closure include:

- The pit lake may be an attraction to introduced species, however local ground dwelling fauna are not reliant on permanent water bodies and are unlikely to be attracted to the pit. Notwithstanding, access to the pit void will be limited by the construction of a closure safety bund in alignment with (Department of Mines, Industry Regulation and Safety (DMIRS) (then DoIR), 1997) as well as removal of upper sections of the pit ramp
- A Source-Pathway-Receptor approach was utilised to develop a Conceptual Model to assess the risks to fauna associated with the pit lake. The Conceptual Model identified that any potential impacts of the pit lake are expected to be restricted to the immediate lake area. Although the Winu pit lake is likely to attract some species of waterbirds, their time spent on the lake is likely to be only relatively short periods of their life cycle. Birds are unlikely to stay for long periods due to lack of foraging habitat and little food biomass
- The pit lake is surrounded by Crown land inside the NWIPA. Engagement with Nyangumarta People will form an integral component of ongoing stakeholder engagement related to potential PMLU's associated with the pit void. However, the pit void at its designed closure configuration will not be able to be accessed. As such PMLU's will be limited and hunting or fishing opportunities are unlikely
- Rehabilitation plans and designs will incorporate appropriate habitat elements for Terrestrial Fauna that may include:
    - Vegetation that is known to provide preferred food or shelter preference for local native fauna

- Retention and placement of woody debris accumulated during land clearing processes to provide habitat and promote the availability of food sources, such as termites
- Provision of sandy substrates to facilitate habitat (e.g. For burrowing fauna such as Bilbies)

- The potential impact on Subterranean Fauna is not considered significant due to the lack of detection records within the Project Area and the low likelihood of significant habitat for the species. Furthermore, the subterranean fauna survey conducted (Biota, 2022c) concluded that it is unlikely that any disturbance caused by the Proposal would be of subregional significance on Subterranean Fauna within the Great Sandy Desert bioregion. No specific closure measures are proposed.

3.3. Materials characterisation

3.3.1. Physical Waste Rock Characterisation

Landloch completed a strategic guidance study for the development of landforms at Winu (Landloch, 2020). Nine material types were defined for Winu, with characterisation undertaken on six of these materials (Sand, Cement, High-silt Leach cap, Mudstone, Non-high-silt Leach cap, and Unmineralised Primary).

Different types of surfaces were assessed for erosion potential using the WEPP (Water Erosion Prediction Project) runoff/erosion model. The following materials were considered:

- Cement/Sand – a fine-grained material with minimal coarse fraction, a sandy loam texture, moderate permeability, and low tendency for structural decline
- Mudstone/High-silt Leach cap – a fine grained silty-loam to clay waste with minimal durable coarse fraction, and a low permeability that reflects their tendency for structural decline
- Unmineralised Primary – a durable waste rock with high proportion of cobbles and stones and a lower fines proportion
- Unmineralised Primary/Sand mix – mixture of fresh rock and sand.

Erodibility parameters for these five different surfaces were estimated by comparing their baseline properties to those of materials with similar baseline properties that Landloch have previously assessed for erodibility using laboratory or field-based techniques. These techniques include the application of simulated rain and overland flows. The erodibility parameters are material specific and were used to predict long-term average erosion potential. Erodibility of the materials were simulated in WEPP models from least erodible to most erodible, which are listed inf order below:

- Unmineralised Primary Rock
- 2:1 unmineralised Primary Rock/Sand mix
- Non-high-silt Leach cap
- Cement/sand
- Mudstone/High-silt Leach cap.

Data generated from the WEPP simulations were used to generate SIBERIA parameters for the non-high-silt Leach cap and 2:1 Unmineralised Primary Rock/Sand mix materials.

Further in this 2020 study, a review of data for the Pilbara region (which would be broadly applicable for Winu given the arid climate) found that a mean average annual rate of 6 t/ha/y and a peak average annual rate of 12 t/ha/y would be suitable for design purposes where the risk is defined as ‘moderate’. A ‘moderate’ risk rating was deemed appropriate for Winu because of the presence of significant proportions of fine-grained wastes that will not present as durable, blocky rock, and the potential for erosion to cause degradation (rather than functional loss) of the wider ecosystem.

Landloch undertook a review of various landform designs for WRLs in 2021 (Landloch, 2021), now superseded. These designs included both concave and berm/batter designs. Berm/batter designs were

the better performers in these assessments, as a result berm/batter design configurations were incorporated into subsequent landform designs.

Landloch subsequently completed a review of the updated integrated WRL /TSF landform design in 2025, (refer Section 8.1.2 and 8.1.3 for design information) to assess the erodibility of the designed integrated landform (Landloch, 2025). Assessments were based on those deemed most applicable; the non-high silt leach cap and the 2:1 Unmineralised Primary Rock/Sand mix materials.

Results from the 2025 Winu landform evolution modelling indicate that the proposed waste landform design erodes at mean average annual rates similar to the appropriate design criteria for a 'moderate risk' as discussed above. The WRL batters, when covered in either the Leach cap or the Rock/sand mix are predicted to be slightly less prone to water erosion than the TSF batters, likely due to the less surface water control features and the longer slopes present on the TSF batters.

3.3.1.1. Leach cap

For the Leach cap, the TSF section of the proposed landform is predicted to erode at an average rate of 6.6 t/ha/y after 100 years and decreases to 6.5 t/ha/y by year 300. Gullying to a depth of 0.5 m is predicted by year 100 and increases to a depth of 1.1 m by year 300. Average cumulative soil loss was predicted to be 128 mm by year 300.

For the Leach cap, the WRL section of the proposed landform is predicted to erode at an average rate of 6.7 t/ha/y after 100 years and decreases to 6.0 t/ha/y by year 300. Gullying to a depth of 0.3 m is predicted by year 100 and increases to a depth of 0.8 m by year 300. Average cumulative soil loss was predicted to be 163 mm by year 300.

3.3.1.2. Rock/sand mix

For the Rock/Sand mix, the TSF section of the proposed landform is predicted to erode at an average rate of 9.6 t/ha/y after 100 years and decreases to 9.1 t/ha/y by year 300. Gullying to a depth of 1.4 m is predicted by year 100 and increases to a depth of 1.7 m by year 300. Average cumulative soil loss was predicted to be 182 mm by year 300.

For the Rock/Sand mix, the WRL section of the proposed landform is predicted to erode at an average rate of 7.6 t/ha/y after 100 years and decreases to 6.9 t/ha/y by year 300. Gullying to a depth of 0.7 m is predicted by year 100 and increases to a depth of 1.2 m by year 300. Average cumulative soil loss was predicted to be 206 mm by year 300.

It should be noted that the current design modelling uses model input parameters that have been estimated from limited available sample information (particle size distribution and geochemistry parameters that have an impact on permeability). Additional sampling and testing of potential rock armour materials will be completed as more representative materials become available, including from diamond drill core. This information will be used to inform subsequent designs for permanent landforms.

3.3.2. Geochemical characteristics

3.3.2.1. Chemical Waste Rock Characterisation

A key closure management measure for the Winu Project is the safe storage of waste rock materials to prevent emissions from acidic, metalliferous, and/or saline leachate through water or wind erosion (Rio Tinto, 2025). The current mine plan estimates that approximately 490 Mt of waste rock will be generated over the life of the mine, with approximately 356 Mt to be stockpiled in a WRL. To improve the understanding of waste rock characterisation, an extensive geochemical characterisation program has been undertaken, which included samples from oxides, primary and secondary sulfides.

Acid-base accounting (ABA), whole rock assays, liquid extracts and mineralogy tests were undertaken in accordance with leading practice (AMIRA, 2002; Australian Government, 2016; INAP, 2018). A total of 269 samples were assessed, with 63 from the Upper Oxidised Leached Cap, 35 from the Enrichment

Secondary Sulfide Zone and 171 from the Hypogene Primary Sulfide Zone (Rio Tinto, 2024d). In addition, kinetic leach column tests have been established. Sequential extractions have also been undertaken via the ChemCentre at Curtin University.

This work has enabled the following key conclusions:

- Material in the Upper (Oxide and Overburden) Zone is predominately NAF but does not contain significant neutralising minerals
- PAF material can be present in the Primary and Secondary Sulfide Zones
- Pre-mineral mafic and metasediment lithologies have the highest likelihood of being PAF materials
- 20-30% of waste rock is PAF.

No sodic, dispersive, fibrous or radioactive minerals have been identified in resource drilling completed to date. During operations PAF waste rock will be handled in accordance with the Winu AMD Management Strategy and Management Plan (AMP S&MP) (Rio Tinto, 2025) and be encapsulated within the WRL as described in Figure 3-17 and Figure 3-18. Further discussion on the planned storage of waste rock and tailings are presented in Section 8.1.2 and Section 8.1.3.

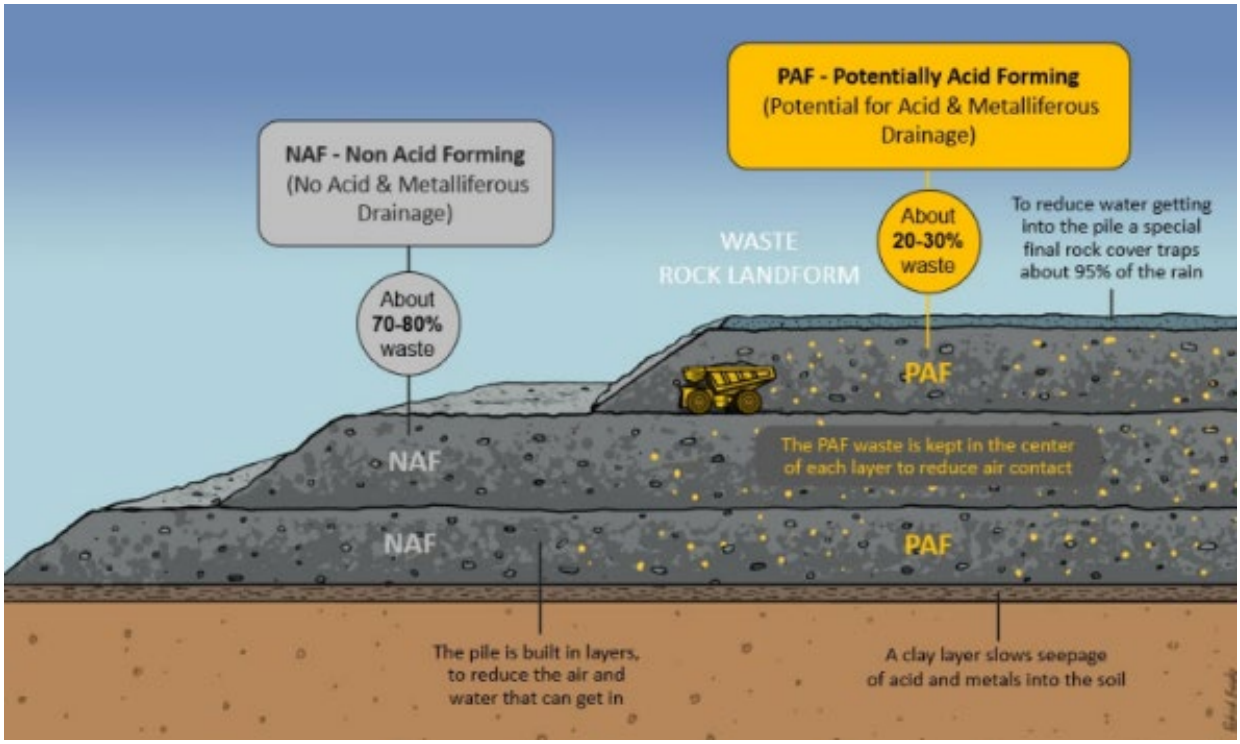


Figure 3-17: Waste Rock Landform Conceptual Operational Design (prior to closure)

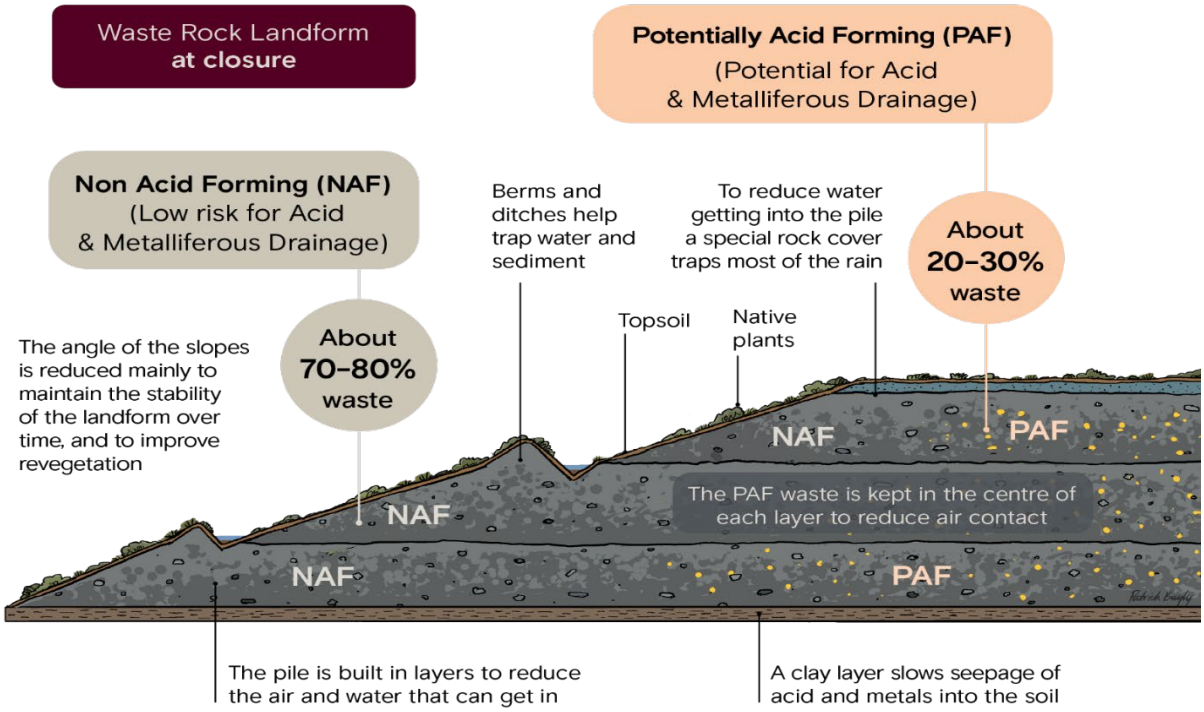


Figure 3-18: Waste Rock Landform Conceptual Closure Design

3.3.2.2. Tailings Characterisation

A tailings geochemistry study of samples from metallurgical test work has also been completed. The tests included ABA, whole rock assays, liquid extracts and mineralogy tests and were undertaken in accordance with leading practice (AMIRA, 2002; Australian Government, 2016; INAP, 2018). In addition, there have been kinetic leach column and saturated leach column tests, three of which are still running and being monitored. Sequential extractions have also been undertaken via the ChemCentre. This work has enabled the following key conclusions (Rio Tinto, 2022b).

- All HST are PAF, with limited acidification lag
- LST were classified as NAF or PAF with low capacity for acid generation
- Acid generation potential of LST is variable and range up to 20 kg H_2SO_4/t. For comparison HST contained over 300 kg H_2SO_4/t (excluding oxides)
- Neutralisation potential of tailings is low-nil (<20 kg H_2SO_4/t). Slow-reacting silicates are present and may assist neutralisation in the long-term seepage chemistry
- Metal leaching at elevated concentrations was typically associated with low pH conditions (NAG pH leachate)
- Fluoride release into solution was observed for most samples
- Cyanide concentrations into solution were generally low
- LST and HST from oxide feed are NAF and Barren (meaning low-nil neutralising capacity)

Two types of tailings streams will be generated (Rio Tinto, 2025):

- High Sulfur flotation tailings (HST; approximately 5-9% of all tailings): containing up to 300 kg H_2SO_4/t. Low to Negligible ANC. Due to the high sulfide content and negligible ANC, all samples were classified as PAF
- Low Sulfur flotation tailings (LST; approximately 91-95% of all tailings): containing up to 35 kg H_2SO_4/t. Low to Negligible ANC

- 53% of the samples were classified as PAF – noting that although some Low Sulfur samples were classified as PAF the low sulfide content means that their acid-generating capacity is low and thus referred to as PAF-LC
- 47% were classified as NAF or Barren

A proposed conceptual design for the storage of HST and LST the TSF during operations is shown in Figure 3-19.

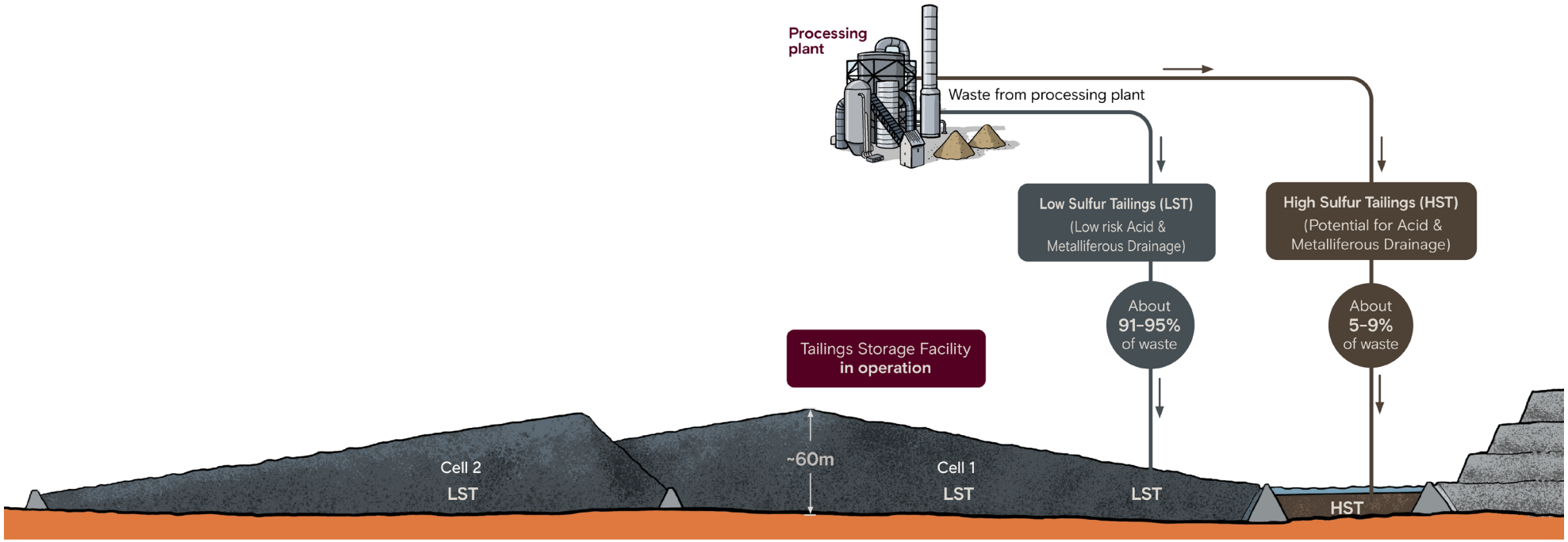


Figure 3-19: Proposed TSF Storage of HST and LST During Operations

The dominant sulfide minerals in both tailings' streams were pyrite and chalcopyrite.

The two types of tailing will be stored in separate cells within the TSF to manage potential environmental risks. The LST cell(s) will be lined with appropriate liners and upstream raises using soil with rockfill backing for closure. The HST cell will also be appropriately lined with a downstream-raised zoned embankment. The HST cell will be always operated with a minimum depth of 0.5 m water cover to reduce the potential for acid generation.

The specifications of the liner types are subject to confirmation during the Feasibility study, with details to be updated in future versions of the MCP.

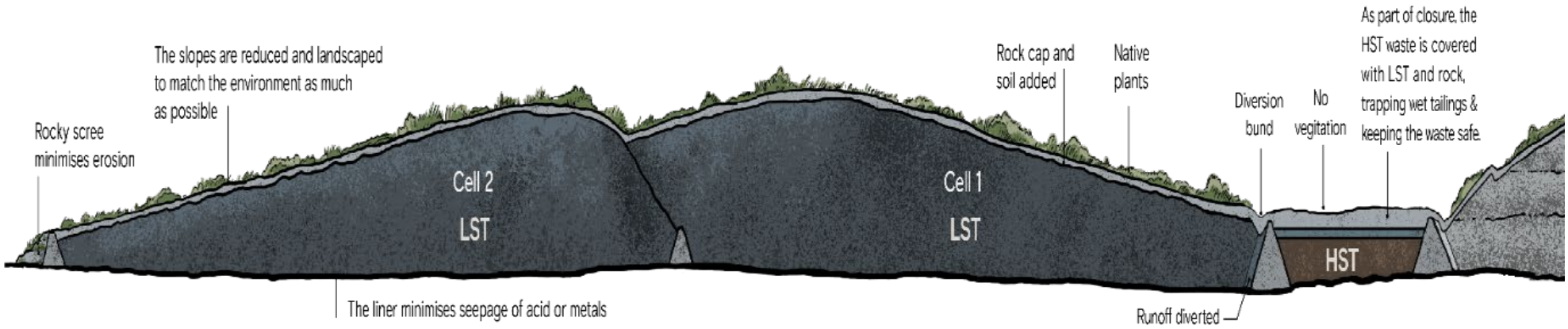
Under unsaturated conditions expected on the beaches for the LST, metal leaching was typically only observed in samples with low pH levels. At the onset of acidic conditions, the samples with the highest sulfide concentrations recorded elevated concentrations of Al, Be, Cd, Co, Cu, Cr, Mn, Ni, Pb, U and Zn being released (Rio Tinto, 2025). Cyanide concentrations remained consistently low in both streams despite changes in pH.

Under the saturated conditions that the HST and some of the LST will be stored, neutral pH was maintained for tailing streams. This confirms limited oxygen ingress and subsequent sulfide oxidation when Winu tailings are maintained saturated (Rio Tinto, 2025). Additionally, under these conditions, leached metals were maintained at very low concentrations after the first flush. Similarly to the unsaturated testing, the cyanide concentrations in both streams remained low. Hence HST are PAF, but if maintained in a saturated state are not expected to generate AMD.

The closure strategy aims to maintain a high degree of saturation (>85%) of the HST to minimise oxygen ingress by use of a tension saturated cover system to decouple the shallow evapotranspiration zone from the saturated HST (Rio Tinto, 2025). The top surface of the HST cells will not be revegetated. The LST are intended to be covered with an erosion protective cover to limit net infiltration, and topsoil to promote a vegetative cover. Long term seepage estimates predict the LST will stabilise at 50-60% saturation (WWL, 2025a).

At closure some of the drainage will be directed to the HST cells to maintain the tension saturated cover. A conceptual design of the TSF at closure is shown in Figure 3-20.

Figure 3-20: Conceptual TSF Storage of HST and LST at Closure



3.3.3. Implications for closure

Based on the assessment of materials characterisation data, soils and subsurface geology of the Project, the following considerations were made in relation to closure for soil, tailings and mine waste rock material management:

- Throughout both the operation and closure phase, the proper management of topsoil materials is essential to ensure that rehabilitation of the disturbed areas can support a sustainable cover and diversity of native flora species
- The weak surface structure to massive structure, weak dry surface consistency and low coarse fragment abundance of the Deep Sands that comprise 92.7% of extent of the MIA poses risk of dispersive surface material and erosion. Therefore, topsoils may not be suitable for placement on higher lift angles and heights
- The management of topsoil materials to ensure that erosion is controlled is necessary to maintain topsoil stability. Should deeper sandy loams be determined to be beneficial for rehabilitation, these will be recovered from the pit development area during operations and stockpiled for later use. Fresh topsoil may be stockpiled on top of these deeper sandy loams to minimise the disturbance area required
- Important for closure will be the ongoing adherence of operations, from construction to closure to comply with the Winu Topsoil Procedure, as well as regular surveying and isolation of topsoil stockpiles to ensure this resource is available in sufficient quantities for rehabilitation activities. The Winu Topsoil Procedure will be developed and provided in future versions of this Mine Closure Plan
- The balance of beneficial and deleterious waste materials requires stringent management and operational controls. The Winu AMD S&MP (Rio Tinto, 2025) has been developed based on current information and will be subject to ongoing validation as more samples become available. This knowledge will be subsequently reviewed and incorporated into long term and short term mine plans to ensure they are utilised in a manner that will enable successful closure outcomes
- Preliminary final landform designs have been developed and will be validated and refined during operations, including consultation with key stakeholders
- Characterisation of the geochemical, physical, and erodibility properties of subsurface materials should be referenced to inform use of subsurface materials and waste rock as cover in closure
- The risk of AMD for tailings is considered low to very low based on:
    - Alkaline process solutions
    - Constant saturation of high sulfur tailings
    - The lag time until acidification for LS tailings classified as PAF and likely burial with new tailings prior to any acidification.
- In discussion with NWAC, it was agreed that the Proponent will carry out work during the Feasibility Study (FS) phase to see if a detailed design can be developed that facilitates the future potential for HST associated with the 280Mt mineral resource to go safely back into the pit, once the pit is sterilised. This work will be completed in conjunction with NWAC and future versions of the MCP updated accordingly.

3.4. Other closure-related data

Due to this version of the MCP being created while the Project is in the planning and approvals phase, additional closure data is not available at this time. This section will be utilised in future revisions of the MCP when closure designs are finalised.

4. STAKEHOLDER ENGAGEMENT

Stakeholder engagement is a key part of closure planning as it ensures that the expectations of stakeholders are understood by the mine operator, and these can be considered and managed during the planning and implementation phase of closure. the Proponent has established processes for consultation with stakeholders which are embedded in both the Closure Standard (Rio Tinto, 2021a) and Community and Social Performance Standard (Rio Tinto, 2022a). These standards are aligned with principles from other closure guidelines (Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), 2025a; ICMM, 2019). The core principle of the stakeholder engagement strategy adopted for activities within the Paterson Province is outlined in Table 4-1.

Table 4-1: Principles of Stakeholder Engagement

Principles	Requirements
Communication	Communication must be open, accessible, clearly defined, two-way and appropriate
Transparency	The process and outcomes of community and stakeholder engagement should, wherever possible, be made open and transparent, agreed upon and documented
Collaboration	The process and outcomes of community and stakeholder engagement should, wherever possible, be made open and transparent, agreed upon and documented
Inclusiveness	The process and outcomes of community and stakeholder engagement should, wherever possible, be made open and transparent, agreed upon and documented
Integrity	Community and stakeholder engagement should establish and foster mutual trust and respect

The overarching objectives of the consultation program included the following:

- Identify relevant external stakeholders
- Ensure stakeholders understand the nature of the Proposal, including likely impacts and benefits that may be derived from the Proposal
- Communicate the Proposal's vision by ensuring open and transparent communication of the Proposal development process, impacts and risk management
- Enable individuals, groups and agencies with interest in the Proposal to have access to up-to-date relevant information
- Establish opportunities for two-way feedback to engage stakeholders and maximise the Proposal outcomes through obtaining local knowledge and expertise
- Provide a means through which stakeholders can raise concerns and issues and the Proponent with the means to respond to these
- Assess stakeholder issues and concerns so that proposed impacts can be minimised to as low as reasonably practicable and in-line with stakeholder expectations.

4.1. Stakeholder engagement strategy

Stakeholder consultation for the activities within the Paterson Province commenced in 2017. The Proponent engaged stakeholders early in the planning phase, primarily in the interests of achieving a collaborative approach and to ensure that local knowledge is considered in the design and management of activities. Key stakeholders have been mapped and provided with details of activities within the

Paterson Province, including potential exploration, mining and infrastructure requirements, environmental studies undertaken, including elements of mine closure and rehabilitation planning.

To date consultation has included:

- Written communications, including landholder notifications of the scope and purpose of the technical studies, individual project briefings and meetings, landholder access arrangements for exploration activities, environmental investigations, and future mining operations
- Local Government consultation with the Shire of East Pilbara; Town of Port Hedland and Shire of Broome
- Consultation with representatives of Main Roads WA
- Face to face and telephone and email discussions with local landholders regarding upcoming work programs and access arrangements to facilitate field investigations
- Media statements and interviews
- Consultation with key Government agencies including DMPE, DWER and the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW)
- Significant engagement with Native Title holders, including heritage surveys, Social Surroundings engagement and progression of negotiation of Project Agreements.

During early consultation DMPE indicated key areas of focus as biological management, development of the mine closure plan, risk assessment, mineral waste characterisation and management. These focus areas have been incorporated into this Mine Closure Plan.

Consultation over the past six years has included a strong focus on co-designing closure principles with Traditional Owners, landholders and relevant external stakeholders. These principles include, but not limited to, minimising impacts to sand dunes where reasonably practical, rehabilitation with native vegetation and considerations for post-closure access. The overarching outcome in the draft MCP is to transition the disturbed areas to safe, stable, non-polluting surfaces capable of sustaining the agreed post mining land use. The Proponents Communities and Social Performance (CSP) team record and track all actions and requests arising from meetings with external stakeholders. This MCP encompasses the closure principles and recommendations, however specific comments in the Stakeholder Engagement Register relating to rehabilitation and mine closure have been summarised in Appendix D.

4.2. Stakeholder engagement register

Whilst the Winu Project is still in the planning phase, leading practice closure planning principles recommend early engagement with key stakeholders regarding all aspects of a mining project including closure, post-closure, and next land use considerations.

To date, the following closure specific stakeholder engagement has been undertaken:

- 9-11 October 2023. NWAC (including NWAC technical expert consultants). Presentation on potential environmental, cultural, and social impacts likely to arise from the Winu Project. Included was closure specific discussions on closure risks, proposed future land use, conceptual closure planning of closure domains and timing
- 16 November 2023. DEMIRS. Briefing on closure risks and conceptual closure design
- 20 February 2025. NWAC (including NWAC technical expert consultants). Discussion on key closure concerns regarding closure (HST cell, pit void, safety) and relevant learnings from NWAC technical advisors from other projects.
- 23 July 2025. NWAC (including NWAC technical expert consultants). Discussion on approach to HST at closure, alignment on forward work plan.
- In August 2025 this closure plan was provided to both Nyangumarta and Martu Traditional Owner groups for initial review and comment.

4.3. Ongoing community and stakeholder engagement

One of the Winu Project's strategic pillars is to 'create value with our partners' with the objective to 'connect, partner and restore trust with the community.' Commencing in the exploration phase, the Proponent has developed and implemented annual Consultation and Engagement Plans. These Plans define the engagement approach, principles, and objectives to inform stakeholders of the Project and establish positive relationships and partnerships.

Stakeholder engagement is a continuous process that has been, and will continue to be, conducted throughout the life of the Winu Project activities.

The level of closure specific content and detail will increase during operations, within a phase of mining termed Closure Readiness (commencing approximately 12 years prior to mine closure). Ongoing stakeholder engagement will be undertaken:

- During high-risk activities (as required by the risk assessment)
- Prior to any major changes to proposed activities
- Upon identification by stakeholders of areas of concern.

The Stakeholder Engagement Register records consultation with key stakeholders and will remain as a live document updated as required throughout the life of the Proponent's activities within the Paterson Province/Great Sandy Desert. The following sections describe the stakeholder groups that have been identified, and the engagement strategies utilised.

4.3.1. Traditional Owners

The Proponent is committed to establishing a genuine partnership with the Nyangumarta People and the Martu People, the Traditional Owners on whose land the Project is situated and to achieve free prior informed consent (FPIC) for the Project. As this will be the first mining operation on Nyangumarta Country, there has been a strong focus on building the capacity of Nyangumarta to ensure a transparent co-design process is implemented throughout the lifecycle of the Proposal, working together to minimise the impact on Country and increase mutual benefit. The Proponent has been engaging with Nyangumarta Warrarn Aboriginal Corporation RNTBC (NWAC), Yamatji Marlpa Aboriginal Corporation (YMAC) and Jamukurnu Yapalikurnu Aboriginal Corporation (JYAC) since 2019 through a range of engagement methods, including monthly Technical Meetings, Board of Director and Nyangumarta Elders Meetings, as well as providing financial support, training, and the cost of resourcing subject matter experts to ensure the Nyangumarta People are fully informed.

Ongoing consultations are intended to confirm the Social Surroundings themes, values, issues of concern for, and recommendations of the Nyangumarta Peoples and Martu Peoples with respect to the proposed Winu Project. This work will aim to characterise Nyangumarta and Martu aesthetic, cultural, economic, and other Social Surroundings values that have the potential to be affected by impacts to physical or biological surroundings caused by the Project to inform the environmental impact assessment and closure plan.

4.3.2. Pastoral Stations

There are no pastoral stations within 100 km of the MIA, with the closest being Warrawagine Station, which sits approximately 100 km west. Approximately 16 km of the RAC is located on the Wallal Downs Station pastoral lease, with the intersection at the Great Northern Highway approximately 8 km south of the station homestead. The Mandora Station homestead is approximately 20 km east-northeast of the intersection.

Regular engagement with Wallal Downs has taken place and is positive. Further engagements with Mandora Station and Wallal Downs are scheduled for the first half of 2025.

4.3.3. Conservation Estate

There is no conservation estate near the Proposal, with the closest, Walyarta Conservation Park (encompassing the Mandora Marsh), located approximately 40 km north of the RAC.

4.3.4. Other Projects

The Project intersects the proposed Australian Renewable Energy Hub (AREH) development envelope along the Nyangumarta Highway and Wirlkirr Wirlkirr Rd section of the RAC. The Proponent has regular engagements with AREH and have an information sharing protocol in place. The closest existing significant mining operations are at Telfer, Nifty and Woodie Woodie, all approximately 100 km south or southeast of the Winu Project.

4.3.5. Tourism and Recreation

There are no significant recreation or tourism activities that occur within or near the Project area, with the potential exception of any activity that may be associated with the Great Northern Highway (such as access to Eighty Mine Beach Caravan Park), occasional four wheel drive visits along the Nyangumarta Highway (actively managed by NWAC through the Nyangurmarta Highway permit system) or on the pastoral leases near the RAC. Engagement with Eighty Mile Beach Caravan Park has been undertaken, with the next engagement scheduled for the first half of 2025.

5. POST-MINING LAND USE

The majority of the Winu Project area is located on Unallocated Crown Land and intersects with the NWIPA. Sections that exist within the NWIPA are managed by the Nyangumarta People (via permits) and therefore the engagement on post-mining land use will occur with a goal to align with the NWIPA's promotion of biodiversity and cultural resource conservation. The western end of the Access Road (L45/549) is located within the Wallal Downs Pastoral Station and outside the NWIPA.

Preliminary discussions on post-mining land use have been held with the Nyangumarta People and Martu People. As part of these engagements the Proponent indicated that further discussions on alternate post-closure land uses, including feedback from the Nyangumarta People and Martu People, will continue during life of operations and there is scope to modify the closure plan to facilitate post mining land uses, post relinquishment (if agreed). Other than the WRL, TSF and pit void permanent landforms, closure outcomes will not preclude any subsequent post-mining land use that Traditional Owners may choose to investigate, post relinquishment.

Due to the remote location of the Winu Project area, post-mining land use will focus on rehabilitation of native ecosystems; therefore, soil and land need to be managed such it that will enable the land to be successfully rehabilitated. Rehabilitated areas need to be sufficiently safe and stable to allow for the re-establishment of native vegetation appropriate to the area. For some domains (permanent landforms) such as those mentioned above, rehabilitation to a representative native ecosystem will not be achievable, as comparable landforms do not exist. Notwithstanding, the outer slopes and tops of the WRL and TSF (except for the top of the HST cells) will be vegetated with native species.

5.1. Permanent landforms

The WRL and TSF will remain as permanent landforms at closure. Post mining land use on these structures would be limited for safety, and to preserve executed closure measures on the landforms (erosion and rehabilitation stability), therefore access will be discouraged.

Access to the pit void and pit lake post closure will be restricted for safety purposes (refer Section 6 Closure risk assessment), with associated limitations on Post Mining Land Use options.

5.2. Infrastructure Areas

All process and non-process infrastructure will be removed (up to 1 mbgl at closure) and disposed of onsite in an appropriate on-site facility; except:

- Where an agreement is reached for transfer of infrastructure ownership (including liability) to the Nyangumarta People or Martu People
- Infrastructure with heavily reinforced concrete foundations (wind turbines) will remain in place
- Specific disposal requirements for hazardous materials
- Where detailed decommissioning plans during closure readiness demonstrate a feasible offsite recycling/reuse opportunity.

Infrastructure areas will then be rehabilitated utilising appropriate native species, unless otherwise agreed. For those areas with residual reinforced concrete a cover of growth medium will be applied to facilitate the establishment of shallow rooted vegetation. This will be subject to further research to confirm this approach.

The proposed post-mining land use for these areas assumes that the site will be rehabilitated to create a safe, stable, and non-polluting landscape revegetated with self-sustaining native species, to maintain environmental and cultural heritage values and ensure the site does not adversely impact the surrounding land use.

6. CLOSURE RISK ASSESSMENT

Risk assessment and management is an integral component of Rio Tinto's business framework and approach to closure planning. The objectives of risk management are to improve execution and reduce risk exposure. To achieve these objectives, Rio Tinto manages all business risks using the RSA Archer Integrated Risk Platform which provides the business with a consolidated and clear view of risks, including version and history tracking and unique identification of risks, controls, and actions for tracking purposes. However, for the purposes of this MCP, the DMPE risk assessment likelihood, consequence and rankings have been used. The risks identified in this section comprises only environmental risks in relation to rehabilitation and closure as per the DMPE Guideline for Preparing Mine Closure Plans (Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), 2025a).

Risk assessments are undertaken to qualitatively and semi-quantitively guide the selection of closure options, assess specific risk and identify controls for the design and execution of closure. Successful management of risks requires the implementation of a clear risk management strategy supported by adequate resources, a strong risk-aware culture, and maintaining an up-to-date risk register that is regularly reviewed.

6.1. Risk assessment process

All Rio Tinto closure risk assessments are facilitated by competent personnel, involving a range of technical and SMEs.

The aims of the closure risk assessment process are to:

- Identify potential hazards that could influence successful closure of the mine
- Evaluate the risks given the management controls/strategies described within the MCP and consideration of the risk likelihood and consequences (using the DMPE descriptors)
- Identify additional control measures (actions) for significant risks rated as medium, high to extreme. to ensure the residual risk rating is As Low as Reasonably Practicable (ALARP)
- Review and update risk, control effectiveness and action status
- Communicate risk information.

Risks are initially assessed against set consequence and likelihood criteria without any controls to determine an inherent risk rating using the DMPE risk matrix as described in the Guideline for preparing Mine Closure Plans (Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), 2025a). (See Table 6-1). The risks are then again assessed after the application of planned controls to determine a residual risk rating. The consequence and likelihood assessment criteria used are those described in the DMPE Guideline for Preparing Mine Closure Plans (Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), 2025a). Risks are nominally reviewed on a quarterly basis throughout the operational phase.

Table 6-1: Risk matrix

Risk Matrix		Most Credible Consequence Level				
		Insignificant	Minor	Moderate	Major	Severe
Likelihood	Almost Certain	Medium	High	High	Extreme	Extreme
	Likely	Medium	Medium	High	Extreme	Extreme
	Possible	Low	Medium	Medium	High	Extreme
	Unlikely	Low	Low	Medium	High	High
	Rare	Low	Low	Medium	Medium	High

6.2. Winu risk profile

The Winu Project closure risk assessment was reviewed and updated in 2025, with detailed input from relevant internal SMEs. A summary of the current Winu Project closure risk profile indicates there are 20 residual risks, consisting of three Low, sixteen Medium and one High.

Actions are assigned to medium, high and extreme residual risks to reduce these risks at closure to ALARP. Actions are also assigned to address knowledge gaps where further information is required to reduce uncertainty. The risk mitigation actions and the knowledge gaps actions have been consolidated and is listed in a single knowledge gaps progress and actions register (see Section 12.2).

A summary of the current closure risk profile for the Winu Project is presented as Figure 6-1.

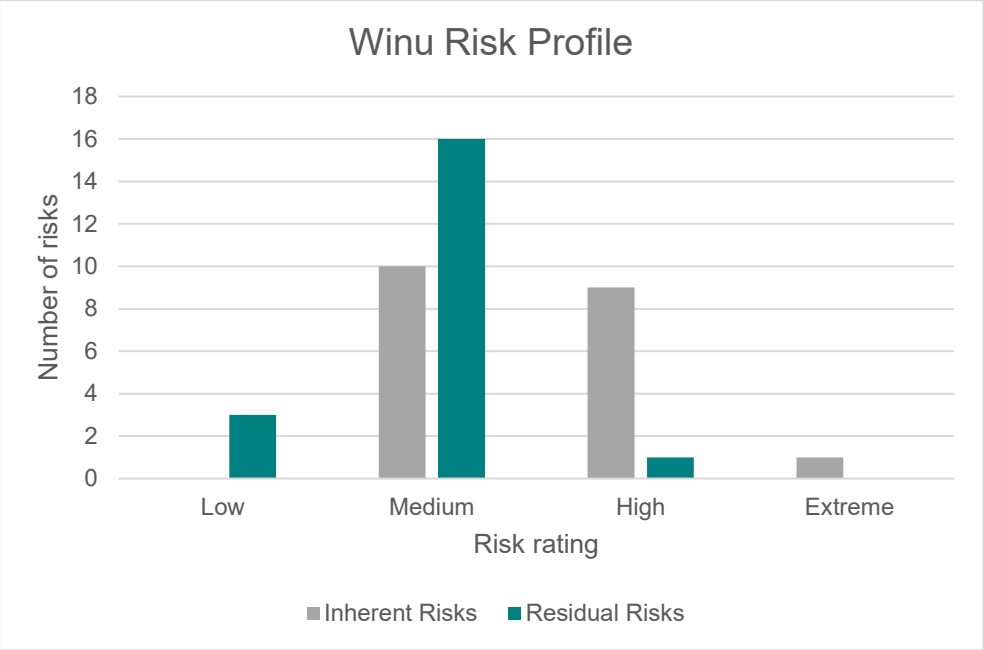


Figure 6-1: Summary of inherent and residual risks of the Winu Project

Table 6-2 summarises the identified closure risks for the Winu Project.

Separate risk assessments were undertaken to provide additional granularity for detailed technical aspects. For example, the conceptual pit lake model and risk assessment is provided in Appendix E (Mine Lake Consulting (MLC), 2025). Outcomes from detailed assessments were used to inform and refine the closure risk evaluations presented in the main risk assessment.

The remaining High rated risk through the ALARP residual risk lens is associated with the safety risk for people entering Winu after it has been rehabilitated and closed, not being effectively mitigated. The credible worst-case consequence utilised in the assessment was that a person on foot, could still access the pit void, and suffer a fatality from a fall, despite the installation of closure safety bunds and the removal of the upper section of the pit ramp, under ALARP principles. This residual risk is analogous to the safety risks associated with steep natural landforms.

6.3. Closure risks

The risks identified along with the causes, impacts, controls, inherent and residual risk evaluation, planned actions and associated Closure Outcomes are listed in Table 6-2. Closure outcomes are discussed further in Section 7.1

Table 6-2: Closure risks

Risk ID	Key Environmental Factor	Category aspect	Closure domain	Risk Pathway	Phase(s) of mine life where the risk can occur	Phase(s) of mine life where risk treatments occur	Inherent Risk			Risk Treatment	Residual Risk			Closure outcome(s)
							Consequence	Likelihood	Rating		Consequence	Likelihood	Rating	
1	Rehabilitation and mine closure	Stakeholder engagement	All domains	Regulatory requirements and/or technical constraints limit adoption of stakeholder feedback resulting in closure execution that does not meet stakeholder expectations	Construction Operations Closure	Approvals Operations Closure	Moderate	Possible	Medium	**Control:** - Traditional Owner and other stakeholder engagement to meet the Social Surroundings factor under Part IV of the EP Act - Formalised Project Agreements with Nyangumarta People and Martu People - Co-designed Care for Country Management Plan with Nyangumarta People - Biannual Local Implementation Committee meetings with Nyangumarta People and Martu People - Life of Mine Planning meetings with Nyangumarta and Martu People - Closure principles embedded in 'maiden' Mine Closure Plan agreed with Nyangumarta People and Martu People - Co-design and cyclic review of Mine Closure Plan with Nyangumarta People and Martu People - Stakeholder engagement register detailing closure-related engagement - Safe post-closure access routes co-designed and established for Nyangumarta People and other future land use manager(s)/owner(s), excluding exclusion areas - Regular review of the MCP, including stakeholder engagement register and legal obligations register - Compliance to Plan Process (including spatial compliance) **Mitigate:** - Closure obligations register - Environmental Management Plan - Post Closure Monitoring and Maintenance program	Moderate	Unlikely	Medium	C15-NS Key stakeholders have been actively engaged regarding closure to ensure expectations are considered and met where practicable

Risk ID	Key Environmental Factor	Category aspect	Closure domain	Risk Pathway	Phase(s) of mine life where the risk can occur	Phase(s) of mine life where risk treatments occur	Inherent Risk			Risk Treatment	Residual Risk			Closure outcome(s)
							Consequence	Likelihood	Rating		Consequence	Likelihood	Rating	
2	Rehabilitation and mine closure	Cultural heritage	All domains	Closure execution results in unintended impact to cultural heritage places or values, or post-closure access restriction for the Nyangumarta People	Construction Operations Closure	Pre-approvals Closure	Major	Possible	High	**Eliminate/Avoid:** - Cultural heritage survey protocol during pre-approval studies - Meet requirements of the Aboriginal Heritage Act 1972, including obtaining s18 consents - Mine planning process establishes a mine layout based on the pit Zone of Instability and known physical cultural heritage places **Control:** <u>General</u> - Integrated Heritage Management System - Cultural Heritage Management Plan co-developed with the Nyangumarta People and Martu People - Repatriation of heritage artefacts or transfer to the Nyangumarta People and Martu People for safe keeping as per the Cultural Heritage Artefact Repatriation Plan <u>Near pit voids</u> - Methods used to determine the pit zone of instability are consistent with those in the DoIR 1997 Safety bund walls around abandoned open pit mines guideline - Post-closure monitoring of pit geotechnical performance, and remedial works where required	Major	Rare	Medium	C2-A Footprint of constructed landforms, cultural heritage sites and permanent infrastructure are located outside the potential zone of instability of pit voids C16-NS Nyangumarta and Martu cultural heritage values have been preserved during closure implementation where practicable, in consultation with Traditional Owner representatives
3	Rehabilitation and mine closure	Physical safety	All domains	Closure execution retains public safety hazards resulting in unsafe areas post-closure requiring long-term management	Closure Post-closure	Operations Closure	Severe	Possible	Extreme	**Control:** <u>All domains</u> - Closure study health and safety risk register and hazard reduction plan - Post-closure public health and safety hazard reduction audit and pre-relinquishment monitoring program <u>Infrastructure</u> - Removal of infrastructure as per the site Decommissioning and Demolition Plan <u>Pit voids</u> - Construction of abandonment bunds which as a minimum meet the design and location requirements of the DoIR 1997 Safety bund walls around abandoned open pit mines guideline to prevent inadvertent access by people in a vehicle/trail bike - Assessment of final wall geotechnical conditions to determine appropriate placement of abandonment bund - Bund not vegetated to maintain visibility and height increased to 3m, constructed of competent, low erodibility material - Bund design considers flood depths under major rainfall and flooding events	Severe	Rare	High	C2-A Footprint of constructed landforms, cultural heritage sites and permanent infrastructure are located outside the potential zone of instability of pit voids C12-A The rehabilitated landscape is made safe to humans and animals as far practicable C14-A No infrastructure left in-situ, above 1m below ground level. Heavily reinforced concrete foundations associated with wind turbines, will be removed to ground level and capped with up to 1m of cover material to facilitate vegetation establishment with appropriate species.

Risk ID	Key Environmental Factor	Category aspect	Closure domain	Risk Pathway	Phase(s) of mine life where the risk can occur	Phase(s) of mine life where risk treatments occur	Inherent Risk			Risk Treatment	Residual Risk			Closure outcome(s)
							Consequence	Likelihood	Rating		Consequence	Likelihood	Rating	
										and remobilisation of sand dunes - Removal of upper sections of pit ramp WRL - Construction of integrated crest bunds on the top surface of Waste Rock Landforms prevent inadvertent access to prevent inadvertent access to the outer batters by people in a vehicle/trail bike TSFs - Removal of TSF infrastructure as per the facility-specific Final TSF Closure Report - Tailings surfaces are capped or otherwise made safe to prevent dust or entrapment				
4	Rehabilitation and mine closure	Physical safety	All domains	Open holes or water storage areas remaining following closure execution leads to fauna entrapment resulting in fatality	Closure Post-closure	Operations Closure	Moderate	Possible	Medium	**Eliminate/Avoid:** - Removal of infrastructure as per the site Decommissioning and Demolition Plan, including decommissioning bores and open holes, removal of all unlined and lined water storage areas **Control:** - Closure study health and safety risk register and hazard reduction plan - Tailings surfaces are capped to prevent entrapment and limit dust generation - Post-closure public health and safety hazard reduction audit	Minor	Rare	Low	C12-A The rehabilitated landscape is made safe to humans and animals as far practicable
5	Rehabilitation and mine closure	Land contamination	All domains	Contaminating activities during operations leads to land, surface and groundwater contamination requiring remediation at closure	Construction Operations Closure	Construction Operations Closure	Moderate	Possible	Medium	**Eliminate/Avoid:** - Only store hazardous materials on-site where required for site operations **Control:** - Store dangerous goods and hazardous materials as per requirements of the Dangerous Goods Licence, Australian Standards and Cyanide Management Code - Maintenance and inspection of chemical storage areas **Mitigate:** - Clean-up equipment and emergency response, with trained personnel to minimise consequence of a loss of containment - Meet requirements of the *Contaminated Sites Act 2003*, *Contaminated Sites Regulations 2006* and associated	Minor	Unlikely	Low	C5 All environmentally hazardous chemicals, rubbish and contaminating materials have been removed, treated, managed and/or disposed in a manner that does not preclude the post mining land use(s)

Risk ID	Key Environmental Factor	Category aspect	Closure domain	Risk Pathway	Phase(s) of mine life where the risk can occur	Phase(s) of mine life where risk treatments occur	Inherent Risk			Risk Treatment	Residual Risk			Closure outcome(s)
							Consequence	Likelihood	Rating		Consequence	Likelihood	Rating	
										guidelines for reporting, investigation and remediation (where required)				
6	Rehabilitation and mine closure	Land contamination	Infrastructure	Operational waste management and decommissioning activities leads to loss of containment into surrounding undisturbed areas which reduces environmental and cultural values	Construction Operations Closure	Construction Operations Closure	Moderate	Possible	Medium	**Control:** - Operational recycling, waste transfer and management as per the site Waste Management Plan - Landfill operation as per conditions of the Part V EP Act Prescribed Premises Licence and *Environmental Protection (Rural Landfill) Regulations 2002* - Landfill closure meets requirements of the Environmental Protection (Rural Landfill) Regulations 2002 - Decommissioning and Demolition Plan to specify recycling, waste management and containment practices	Moderate	Unlikely	Medium	C5 All environmentally hazardous chemicals, rubbish and contaminating materials have been removed, treated, managed and/or disposed in a manner that does not preclude the post mining land use(s)
7	Rehabilitation and mine closure	Surface water	All domains	Mining activities alter the hydrological regime resulting in direct impacts to sensitive receptors within and down-gradient of the mine	Construction Operations Closure	Pre-approvals Construction Operations Closure	Moderate	Possible	Medium	Eliminate/Avoid: - Baseline topography of dunes are internally draining, no defined flood plains or drainage lines present within mining footprint. - Mining footprint is upgradient of any sensitive receptors Substitute: - Operational surplus water managed via Managed Aquifer Recharge bores and infiltration ponds Control: - Assessment of hydrological impacts under the EPA Inland water environmental factor guideline - Hydrological modelling of final closure landforms completed and considers PMP. - Climate change scenarios included in hydrological modelling - Closure safety bund design considers flood depths under major rainfall and flooding events and remobilisation of sand dunes - Removal of infrastructure and removal/filling of redundant surface water drainage features	Minor	Unlikely	Low	C6A - Water quality and altered surface water regimes do not have a detrimental impact on sensitive receptors and do not preclude the post-mining land use(s)

Risk ID	Key Environmental Factor	Category aspect	Closure domain	Risk Pathway	Phase(s) of mine life where the risk can occur	Phase(s) of mine life where risk treatments occur	Inherent Risk			Risk Treatment	Residual Risk			Closure outcome(s)
							Consequence	Likelihood	Rating		Consequence	Likelihood	Rating	
										Mitigate: - Post closure water monitoring program				
8	Rehabilitation and mine closure	Groundwater	All domains	Regional groundwater levels do not recover to pre-mining levels and require ongoing management to prevent impacts to sensitive receptors	Closure Post-closure	Pre-approvals Operations Closure	Moderate	Possible	Medium	**Eliminate/Avoid:** - Significant depth to pre-mining water table - no sensitive receptors present **Control:** - Groundwater Operating Strategy and Closure Groundwater Management Strategy - 5C Licence to Take Water (GWL) and associated conditions - Groundwater Recovery model and model to predict long-term and stabilised hydrogeological conditions **Mitigate:** - Operational and post-closure groundwater monitoring to verify predictive models and to inform adaptive management	Moderate	Unlikely	Medium	C8-A Water quality and altered groundwater regimes do not have a detrimental impact on sensitive receptors and do not preclude the post-mining land use(s)
9	Rehabilitation and mine closure	Physical and geotechnical stability	Pit Void	Changing geotechnical slope conditions or adverse environmental events leads to instability of the pit crest beyond the predicted zone resulting in impacts to the surrounding landscape	Closure Post-closure	Operations Closure	Major	Unlikely	High	**Control:** - Methods used to determine the pit zone of instability are consistent with those in the *DoIR 1997 Safety bund walls around abandoned open pit mines guideline* - Validation of geotechnical inputs into the Zone of Instability refined over life of mine - Construction of safety closure bunds which meet the design and location requirements of the *DoIR 1997 Safety bund walls around abandoned open pit mines guideline* to prevent inadvertent access by people in a vehicle/trail bike **Mitigate:** - Post-closure monitoring of pit geotechnical performance, and remedial works where required	Moderate	Rare	Medium	C1 - Constructed landforms are physically and geotechnically stable, have minimal erosion and support native revegetation and/or the post-mining land uses
10	Rehabilitation and mine closure	Geochemical stability	Pit Void, Waste Rock Landform	Exposure of potentially acid forming rock leads to acidic or metalliferous drainage resulting in land or water contamination	Operations Closure Post-closure	Exploration Operations Closure	Major	Possible	High	**Substitute:** <u>Waste Rock Landform</u> - Encapsulate PAF rock and build using source control methods, as per the Winu Acid and Metalliferous Drainage Strategy and Management Plan, during operations and at closure - Compliance to Plan Process (including spatial compliance) **Control:** - Geochemical characterisation during exploration, resource definition and grade control to identify areas of the deposit with PAF risk	Moderate	Unlikely	Medium	C4 - Constructed landforms are geochemically non-polluting

Risk ID	Key Environmental Factor	Category aspect	Closure domain	Risk Pathway	Phase(s) of mine life where the risk can occur	Phase(s) of mine life where risk treatments occur	Inherent Risk			Risk Treatment	Residual Risk			Closure outcome(s)
							Consequence	Likelihood	Rating		Consequence	Likelihood	Rating	
										- Defined Acid and Metalliferous Drainage Source-Pathway-Receptor model <u>Pit Void</u> - Pit lake and groundwater monitoring in the vicinity of any PAF risk pit voids <u>Waste Rock Landform</u> - Construction of a store and release cover to reduce rainfall infiltration into the PAF waste rock landform - Groundwater monitoring in the vicinity of PAF waste rock landform to inform adaptive management				
11	Rehabilitation and mine closure	Geochemical stability	TSF	Management of potentially acid forming tailings streams leads to acidic or metalliferous drainage resulting in land or water contamination	Operations Closure Post-closure	Exploration Operations Closure	Major	Possible	High	**Eliminate/Avoid** - Maintain a water cover over the HS tailings during mine operations so it does not oxidise **Substitute:** - Tailings streams separated into High Sulfur and Low Sulfur streams to minimise risk - Separate tailings cell designs for High Sulfur and Low Sulfur tailings **Control:** - Predictions of sulfur concentrations and tonnages of tailings streams, based on metallurgical test work and head sulfur grades - Define Acid and Metalliferous Drainage Source-Pathway-Receptor model for TSF - Basal liners underneath the TSF - Dry, water shedding cover established for LS tailings cells as per the Acid and Metalliferous Drainage Strategy and Management Plan and Tailings Closure Plan - Tension saturated cover established on HS tailings cells as per the Acid and Metalliferous Drainage Strategy and Management Plan and Tailings Closure Plan - Groundwater monitoring to confirm water chemistries and groundwater flow towards pit void	Moderate	Possible	Medium	C4 - Constructed landforms are geochemically non-polluting

Risk ID	Key Environmental Factor	Category aspect	Closure domain	Risk Pathway	Phase(s) of mine life where the risk can occur	Phase(s) of mine life where risk treatments occur	Inherent Risk			Risk Treatment	Residual Risk			Closure outcome(s)
							Consequence	Likelihood	Rating		Consequence	Likelihood	Rating	
12	Rehabilitation and mine closure	Surface water	Permanent Landforms - Pit Void, TSFs, Waste Rock Landform	Surface water drainage into pit voids leads to filling and uncontrolled overflow, or ponding against permanent landforms resulting in scour and down-gradient sedimentation impacts to cultural heritage or environmental values	Closure Post-closure	Operations Closure	Moderate	Possible	Medium	Eliminate/Avoid: - Mining footprint is not within the floodplain of any surface water features - Pit void will not overflow, predicted to be a terminal sink with final level > 150m below ground level - All surface infrastructure removed apart from permanent landforms Control: - Temporary ponding against permanent landforms predicted to evaporate or infiltrate within 13 days in extreme rainfall scenarios (120 hour PMF) - Closure safety bund design around pit void considers flood depths under major rainfall and flooding events and remobilisation of sand dunes Mitigate: - Hydrological modelling completed for closure including sensitivities and climate scenarios	Moderate	Unlikely	Medium	C6A - Water quality and altered surface water regimes do not have a detrimental impact on sensitive receptors and do not preclude the post-mining land use(s)
13	Rehabilitation and mine closure	Groundwater	Pit void	Long-term pit lake conditions leads to groundwater level or water quality changes resulting in impact to a sensitive receptor or groundwater beneficial use	Closure Post-closure	Operations Closure	Moderate	Possible	Medium	**Eliminate/Avoid:** - Pit lake is predicted to be a terminal groundwater sink due to the cone of depression; any groundwater impacts will not migrate towards a sensitive receptor - Density driven flow assessment indicates flow out of the pit in unlikely - Local native species not surface water dependent **Control:** - Groundwater recovery model, Final void pit lake model, Water quality predictive model - Ecological Risk Assessment - Groundwater Management Plan - 5C Licence to Take Water (GWL) and associated conditions **Mitigate** - Establish site specific trigger values to inform post-closure monitoring - Operational and post-closure Pit lake and groundwater monitoring to verify predictive models and to inform adaptive management	Moderate	Unlikely	Medium	C7-A Pit lakes will not have a detrimental impact on sensitive receptors or other water resources

Risk ID	Key Environmental Factor	Category aspect	Closure domain	Risk Pathway	Phase(s) of mine life where the risk can occur	Phase(s) of mine life where risk treatments occur	Inherent Risk			Risk Treatment	Residual Risk			Closure outcome(s)
							Consequence	Likelihood	Rating		Consequence	Likelihood	Rating	
14	Rehabilitation and mine closure	Physical and geotechnical stability	Waste Rock Landform	Changing geotechnical slope conditions or adverse environmental events lead to waste rock landform slope failure resulting in down-gradient impacts to cultural heritage or environmental values	Closure Post-closure	Operations Closure	Major	Possible	High	**Control:** - Geotechnical characterisation of mined waste rock during operations - Characterisation and designs meet requirements of the Rio Tinto Group Standard - D3 Management of slope geotechnical hazards - Construction of final landforms with appropriate FoS **Mitigate:** - Post-closure monitoring of geotechnical stability, and remedial works where required - Compliance to Plan Process (incl spatial compliance)	Moderate	Possible	Medium	C1 - Constructed landforms are physically and geotechnically stable, have minimal erosion and support native revegetation and/or the post-mining land uses
15	Rehabilitation and mine closure	Physical and geotechnical stability	TSF	Changing geotechnical slope conditions or adverse environmental events lead to TSF embankment failure resulting in down-gradient impacts to cultural heritage or environmental values	Closure Post-closure	Operations Closure	Major	Possible	High	**Substitute:** - Integrated waste landform that incorporates HST cells - High density tailings deposition, instead of conventional tailings deposition **Control:** - Geotechnical charcterisation of tailings during TSF studies and operations - Geotechnical charcterisation of mined waste rock during operations - Design, construction, operations and closure meet requirements of the Rio Tinto Group Standard - D5 Management of tailings and water storage facilities and the Global Industry Standard for Tailings Management (GISTM) - Design, construction and operations meet conditions of the Part V EP Act Works Approval and Licence - Closure design established through defined TSF-specific closure study phases - Construction of final embankments meets FoS requirements under static and seismic load - TSF Dam Break Analysis completed for closure scenario **Mitigate:** - Post-closure monitoring of geotechnical stability, and remedial works where required	Major	Rare	Medium	C1 - Constructed landforms are physically and geotechnically stable, have minimal erosion and support native revegetation and/or the post-mining land uses

Risk ID	Key Environmental Factor	Category aspect	Closure domain	Risk Pathway	Phase(s) of mine life where the risk can occur	Phase(s) of mine life where risk treatments occur	Inherent Risk			Risk Treatment	Residual Risk			Closure outcome(s)
							Consequence	Likelihood	Rating		Consequence	Likelihood	Rating	
16	Rehabilitation and mine closure	Physical and geotechnical stability	TSF Waste Rock Landform	Excessive erosion from the final landform leads to loss of growth media and generation of sediment resulting in failure of revegetation and down-gradient impacts to cultural heritage or environmental values	Closure Post-closure	Operations Closure	Moderate	Possible	Medium	**Control:** - Erosion and physical characterisation of mined waste rock during operations, including wind erosion - Construction of final landforms with stable slope parameters derived from the site specific climate and waste rock units in the surface of the WRL/TSF - Berms designed to contain an average annual erosion rate and peak rainfall events - Design informed by landform evolution modelling to predict areas of excessive erosion and sedimentation - Construction of integrated crest bunds on the WRL, sized to contain a rare rainfall event and considering the local and upstream catchment area - Erosive materials appropriately encapsulated - Appropriate wind erosion protection measures in place until effective vegetative covers established - Progressive rehabilitation and trials, including results from relevant 3rd party sites **Mitigate:** - Post-closure monitoring of erosional stability, and remedial works where required - PMLU restricted to native vegetation to preserve closure measures	Moderate	Unlikely	Medium	C1 - Constructed landforms are physically and geotechnically stable, have minimal erosion and support native revegetation and/or the post-mining land uses
17	Rehabilitation and mine closure	Landscape	TSF Waste Rock Landform	Final integrated landform design (combined WRL and TSF) does not consider the local physiography of the natural landscape resulting in visual amenity impacts	Closure Post-closure	Operations Closure	Moderate	Likely	High	**Eliminate/Avoid:** - Single integrated Waste Rock Landform (including TSF) rather than multiple landforms - Significant distance from nearest community **Control:** - Height limited to 80m - Designs consistent with orientation of surrounding dune systems - Visual amenity of Final landforms has been assessed, discussed and agreed with stakeholders, including Traditional Owners, to have no prominent impacts on significant view locations	Moderate	Unlikely	Medium	C3 Constructed landforms are designed with consideration of visual amenity, cultural values and local topography

Risk ID	Key Environmental Factor	Category aspect	Closure domain	Risk Pathway	Phase(s) of mine life where the risk can occur	Phase(s) of mine life where risk treatments occur	Inherent Risk			Risk Treatment	Residual Risk			Closure outcome(s)
							Consequence	Likelihood	Rating		Consequence	Likelihood	Rating	
18	Rehabilitation and mine closure	Flora and vegetation	All domains (excluding HST)	Revegetation fails due to insufficient or poor quality growth medium resulting in an inability to meet biological closure outcomes	Construction Operations Closure	Construction Operations Closure	Moderate	Possible	Medium	**Substitute:** - Disturbance footprint minimised **Control:** - Soils balance maintained throughout life of mine - Characterisation and recovery of subsoils to supplement topsoil resources if appropriate - Progressive clearing and rehabilitation to maximise direct return opportunities and minimise storage duration **Mitigate:** - Soils recovered and managed in line with Winu Topsoil Management Plan - Topsoil register - Compliance to Plan Process (including spatial compliance)	Minor	Possible	Medium	C9 Rehabilitated land is consistent with agreed reference vegetation communities and/or with the post-mining land use C10 Rehabilitated land provides habitat for native fauna, indicative of the target ecosystem and/or post-mining land use C11 A - Rehabilitated land has function and resilience indicative of the target ecosystem and/or post-mining land use
19	Rehabilitation and mine closure	Flora and vegetation	All domains	Revegetation fails due to inadequate weed management practices during operations and closure execution resulting in an inability to meet biological closure outcomes	Construction Operations Closure	Construction Operations Closure	Major	Possible	High	**Substitute:** - Disturbance footprint minimised **Control:** - Vehicle wash down/decontamination facilities - Weed populations mapped **Mitigate:** - Weed Management Plan - Weed inspections and targeted treatment - Compliance to Plan Process (including spatial compliance) - Vehicle movements limited to designated roads/ tracks	Moderate	Possible	Medium	C9 Rehabilitated land is consistent with agreed reference vegetation communities and/or with the post-mining land use C10 Rehabilitated land provides habitat for native fauna, indicative of the target ecosystem and/or post-mining land use C11 A - Rehabilitated land has function and resilience indicative of the target ecosystem and/or post-mining land use
20	Rehabilitation and mine closure	Ecosystem function	All domains	Rehabilitation techniques are not sufficient to meet the required completion criteria and associated biological closure outcomes	Closure Post-closure	Operations Closure	Major	Possible	High	**Substitute:** - Disturbance footprint minimised **Control:** - Progressive rehabilitation and trials - Preliminary completion criteria and ongoing refinement of completion criteria **Mitigate:** - Management Plans - Weed Management Plan, Topsoil Management Plan, Rehab management plans - Rehabilitation monitoring systems	Moderate	Unlikely	Medium	C9 Rehabilitated land is consistent with agreed reference vegetation communities and/or with the post-mining land use C10 Rehabilitated land provides habitat for native fauna, indicative of the target ecosystem and/or post-mining land use C11 A - Rehabilitated land has function and resilience indicative of the target ecosystem and/or post-mining land use

6.4. Detailed Results of Risk Assessment Process

A more detailed discussion of the risks assessed, and the current and future controls to manage the risk to ALARP is presented in the following sections.

6.4.1. Regulatory requirements and/or technical constraints limit adoption of stakeholder feedback resulting in closure execution that does not meet stakeholder expectations

Early, ongoing and effective engagement with Traditional Owners, aligned with the principle of FPIC is critical to establish alignment on closure outcomes. Successful delivery of closure outcomes is dependent on the incorporation of closure requirements at the project development stage.

6.4.1.1. Risk Mitigation

Early engagement on the Closure of the Winu project with the relevant Traditional Owners; Nyangumarta and Martu has taken place as described in Section 4.3.1.

The 'Social Surroundings' engagement process as well as information sessions, has been led by the the Proponent's CSP team and has highlighted post mining land use as an overarching closure theme. Sub elements include:

- Access to land post closure
- Monitoring and maintenance post closure
- Infrastructure removal and/or Asset transfer at closure
- Support for post closure commercial opportunities
- Closure landforms that minimise the area of disturbance
- Establishment of appropriate native vegetation.

These sub elements are captured in more detail in the presentation of other risks in this section

The hierarchy of risk controls has been used to incorporate feedback from Traditional Owners, for example in tailings management:

- Elimination – alternatives to traditional tailings generation – not technically feasible
- Substitution - The mineral processing flow sheet redesigned to segregate HST and LST, to reduce the quantum of HST
- Engineering - alternate TSF design to incorporate tailored management of HST within a combined Waste Rock Landform, that reduced the area of disturbance.

The primary control in meeting the expectations of Traditional Owners is unambiguous alignment of closure outcomes prior to the finalisation of agreements, which is still in progress.

Notwithstanding, the proposed post-mining land use assumes that the site will be rehabilitated to create a safe, stable and non-polluting landscape revegetated with self-sustaining native species, to maintain environmental and cultural heritage and values and ensure the site does not adversely impact the surrounding land use.

- Due to the nature of the mining activity undertaken, the post closure landscape will include permanent landforms of waste rock landforms, TSFs and a pit void. Post mining access to the WRL and TSF will not be restricted, however post mining land uses will be limited to protect the executed closure measures
- The pit void will not be backfilled, with groundwater levels recovering to create a pit lake, approximately 100 m below the natural surface. Engagement with Nyangumarta will form an integral component of ongoing stakeholder engagement related to potential PMLU's associated with the pit void. However, access and PMLU options for the pit void at its designed closure configuration will be limited, due to safe access constraints

- Notwithstanding, post-mining land use will be reviewed and refined during operations and, prior to closure, in consultation with relevant stakeholders and updated progressively in future MCP reviews.

Given the limitations on data availability early in the project stage, the development of a robust knowledge base, informed by technical studies and field trials will extend throughout the development and operational stages of Winu.

As such, high level closure outcomes have been presented, with the underlying detail to be developed in conjunction with Traditional Owners in the years ahead; this will be reported in future updates of this Mine Closure Plan. Diligent application of subsequently defined operational procedures is a key control to deliver agreed closure outcomes.

Ongoing, closure specific engagement with Traditional Owners will be critical, including the development of grievance management procedures as the last element of the risk hierarchy.

Future Mine Closure Plan updates will include the following:

- Details of additional engagement with Traditional Owners specific to closure and post mining land use
- Details of agreed Closure Outcomes within Traditional Owner Project Agreement (where appropriate to disclose)
- Updates of closure knowledge base.

6.4.2. Closure execution results in unintended impact to cultural heritage places or values, or post-closure access restriction for the Nyangumarta People

There are relatively few active mining operations in the region and the Winu project is the first project that Rio Tinto have developed in the Paterson Region. The major current land use types in the region are Unallocated Crown Land, and IPAs. There are multiple exploration activities taking place in the region, therefore consideration of potential cumulative impacts to culture and environment, including closure aspects, needs to be given ongoing attention by all concerned parties. This will ensure that the responsibilities are articulated and appropriately managed.

6.4.2.1. Risk Mitigation

Stakeholder engagement processes have been underway for several years and have likely identified all current stakeholders. There is a possibility that additional stakeholders may emerge prior to closure, implementation of the Winu Stakeholder Engagement Strategy will ensure that any new stakeholders are identified. The perspectives of existing stakeholders are also likely to change during the mine life, again the Winu Stakeholder Engagement Strategy will ensure that these perspectives are captured in the Stakeholder Engagement register.

In addition, updates of this Mine Closure Plan as required by DMPE, will ensure that the understanding of stakeholders is kept up to date through the development and operations stage and not left until closure is imminent.

Future Mine Closure Plan updates will include the following:

- Updates to the Stakeholder Engagement Register
- Development of a closure specific stakeholder engagement strategy.

6.4.3. Closure execution retains public safety hazards resulting in unsafe areas post-closure requiring long-term management

Upon closure, the mine will remain as an unreclaimed open pit and will fill well below surface level, with water to a level approximately ~160 m below (~90m RL) the surrounding ground levels. Measures will

be required to prevent access to the pit and/or the surrounding zone of instability, to minimise potential harm to humans and deter wildlife from entering the area to as low as reasonably practical.

6.4.3.1. Risk Mitigation

Several options were considered to reduce the risk to as low as reasonably practical, but were subsequently eliminated:

- Rehandle of waste to the single pit void – ore sterilisation, carbon emissions, cost prohibitive
- Fencing – requires regular ongoing maintenance post closure, easily breached
- Substantially increased sizing of closure safety bunds – during stakeholder consultation, the Nyangumarta People articulated a preference for a substantially increased bunding height. This is not deemed to reduce the risk exposure any further than the selected ALARP method.

The selected option is to install closure safety bunds around the pit void in line with Safety Bund Walls Around Abandoned Open Pit Mines - Guideline (Department of Mines, Industry Regulation and Safety (DMIRS) (then DoIR), 1997) shown in Figure 6-2. However, the height of the bunds has been increased from the 2 m DMIRS minimum guidelines to 3 m to align with stakeholder expectations.

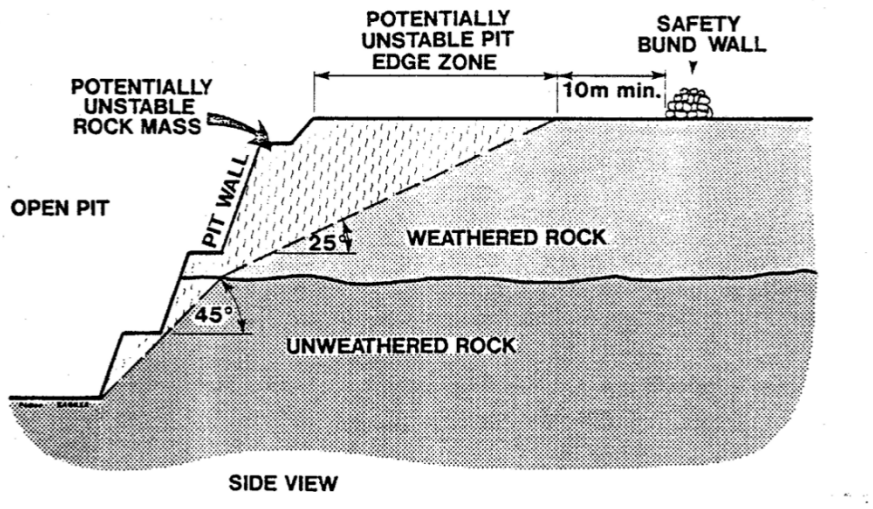


Figure 4
CASE 3: PIT WALL IN WEATHERED AND UNWEATHERED ROCK.

Figure 6-2:Pit Wall in Weathered and Unweathered Rock

A safety closure bund will be constructed to prevent access to the pit and/or the surrounding zone of instability. Figure 6-2 shows the DoIR Guidance for placement of a closure safety bund.

Figure 6-3shows the indicative placement for the closure safety bund at Winu based on the DoIR guidance.

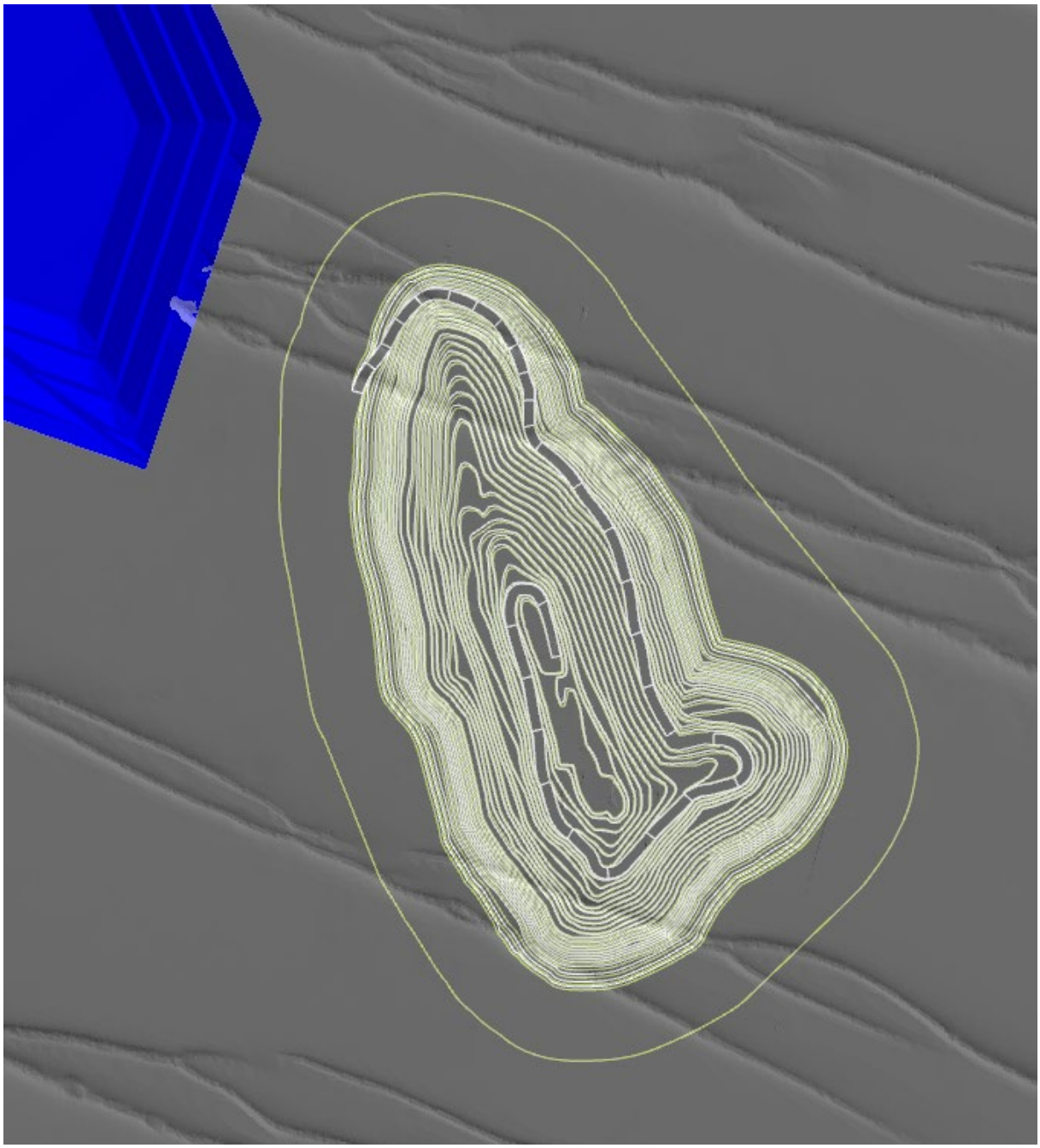


Figure 6-3:Approximate Closure Safety Bund Location

The minimum bund dimensions required by DEMIRS is base width 5 m wide and 2 m high. The design for the Winu pit has been increased to a base width of approximately 7.5 m and a height of 3m and will be constructed with unweathered NAF material or of durable weathered material (Figure 6-4).

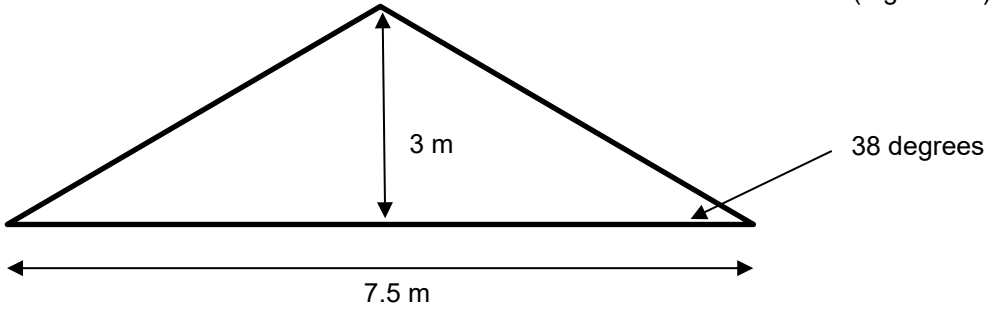


Figure 6-4:Closure Safety Bund Dimensions

The mine plan schedule has incorporated the creation of the closure safety bund as soon as suitable material is mined, this is likely to be early in operations, rather than closer to closure.

This measure aims to minimise potential harm to humans and deter wildlife from entering the area. Although native fauna is considered unlikely to be attracted to the pit lake (refer to Section 3.2.6.8), the bund will help deter access to the area at closure.

The pit void closure design will not provide access to the pit lake at relinquishment. While the safety closure bund will be the primary deterrence for entry, the following additional measures will be taken:

- Retention of the operational windrows/bunds that will go around the pit near the crest to prevent access as a secondary measure
- Ripping along the length of the ramp to ensure it cannot be traversed
- Removal of the upper ramp section.
- The pit lake level will rebound to below the existing ground water level (~50 m) and therefore will deter access by both humans and fauna due to the depth to water.

Future Mine Closure Plan updates will include the following:

- Details of final closure safety bund placement and design
- Reviews of mine plans and appropriate waste material availability and scheduling
- Review geotechnical models and validate Zone of Instability
- Review and minimise the extent of roads remaining at closure that are required for monitoring and maintenance
- Review infrastructure decommissioning plans to minimise public attraction to site
- Details of additional engagement with Traditional Owners specific to closure.

6.4.4. Open holes or water storage areas remaining following closure execution leads to fauna entrapment resulting in fatality

Open holes and water storage facilities form part of the operating infrastructure of the Winu Project. At closure these facilities will not be required, so they will be decommissioned and made safe for humans and fauna.

6.4.4.1. Risk Mitigation

Exploration holes will be capped progressively in accordance with the Winu Ground Disturbance & Rehabilitation Work Practice (Rio Tinto, 2025b). This procedure includes requirements for record keeping, auditing and sign off.

Water bores will be decommissioned, capped and rehabilitated.

Removal of water storage facilities will be as per the Decommissioning Plan developed for the site to eliminate the risk. This will be informed by a Closure hazard reduction plan. Measures will include the removal of any liners, and facilities will be filled or reprofiled to promote drainage.

Both the HST and LST TSF cells will have final dry covers to eliminate the risk of fauna entrapment. This is covered in detail in Sections 8.1.3 and in a stand-alone Conceptual Tailings Closure Plan.

Future Mine Closure Plan updates will include the following:

- Close out reports for exploration rehabilitation
- Development and details of Closure Hazard Reduction plan prior to closure
- Development and details of closure execution plans at least 2 years prior to planned closure

- Confirmation of TSF cover system methods for LST and HST cells.

6.4.5. Contaminating activities during operations leads to land, surface and groundwater contamination requiring remediation at closure

The Winu project will involve the use of hazardous materials through many aspects of its operational footprint. There is a risk that inadequate management of these materials through the operational life could lead to the need for clean-up and remediation at closure.

Refer to Section 8.1.4 for more information on Infrastructure Domains.

6.4.5.1. Risk mitigation

Specific management measures for hazardous materials will be captured in the Environmental Management System (EMS) for the Project and will be subject to the relevant Codes, licensing and guidelines.

Typical materials requiring management include, hydrocarbons and lubricants, mineral processing additives (including cyanide), and explosives.

Rio Tinto Environment Design Standards will be utilised for both temporary and permanent infrastructure, following a risk hierarchy of controls to eliminate, substitute, engineer or administrate the management of hazardous materials.

Surface water management plans and spill response procedures will be in place as the last line of defence to reactively manage any spills. Post clean up, any potentially contaminating events will be captured in a register, for confirmation of effective clean up at closure.

Future Mine Closure Plan updates will include the following:

- Details of detected potential contaminated sites and associated clean up details
- References to relevant elements of the EMS
- Update of closure obligations register.

6.4.6. Operational waste management and decommissioning activities leads to loss of containment into surrounding undisturbed areas which reduces environmental and cultural values

As per the previous risk, the Winu project will involve the use of hazardous materials through many aspects of its operational footprint. There is a risk that inadequate management of these materials during the closure execution phase may lead to additional clean-up scope at closure.

Refer to Section 8.1.4 for more information on Infrastructure Domains.

6.4.6.1. Risk Mitigation

Specific management measures for hazardous materials will be captured in the Environmental Management System (EMS) for the Project and will be subject to the relevant Codes, licensing and guidelines.

Typical materials requiring management include, hydrocarbons and lubricants, mineral processing additives (including cyanide), and explosives.

A Closure Readiness process will be completed prior to the Closure execution stage, Rio Tinto Closure Standard. This will include an execution strategy, detailing the procurement strategy (in-house vs external) and associated EMS requirements for the selected strategy.

Surface water management plans and spill response procedures will be in place as the last line of defence to reactively manage any spills. Any potentially contaminating events will be captured in a register, for confirmation of effective clean up post closure via a Contaminated Sites PSI and DSI.

Details of closure execution strategy, including updates to the EMS relevant to the closure execution phase will be included in future Mine Closure Plan updates and include:

- Decommissioning and Demolition Plan, including waste management requirements
- Contaminated Sites assessment
- Licensing and development of appropriate waste management facilities and landfills.

6.4.7. Mining activities alter the hydrological regime resulting in direct impacts to sensitive receptors within and down-gradient of the mine

Comprehensive understanding and management of surface water throughout project development and operations will be required to minimise any unplanned deviation from closure plans and intended outcomes.

6.4.7.1. Risk mitigation

The Winu Operational Surface Water Management Plan has been developed to manage surface water flows on site, to ensure that any potential risk of off-site impact, such as sedimentation is controlled through engineered diversions or catchments. Climate change models have been included as part of the design process.

A Surface Water Management Plan for closure has also been developed, which articulates the designs of final landforms to ensure that surface water continues to be managed post closure. Both plans include temporary and permanent surface water structures, designed to conform with relevant legal and engineering standards.

These plans have been informed through the development of knowledge base of baseline and preliminary technical studies and models and are bolstered with surface and groundwater monitoring plans.

Future Mine Closure Plan updates will include the following:

- Insights from continuing technical studies - material characterisation, AMD assessment, surface water management plan performance, tailings, mining schedules and landform design, climate models
- Additional mitigations that may require to manage extreme event flooding against permanent landforms
- Field data used to calibrate assumptions in technical assessments
- Additional soil and waste material characterisation (erodibility)
- Development of a Soil Management Plan (recovery, storage and use)
- Design and implementation of landform design trials and progressive rehabilitation
- Development of TARPs developed for post closure water management and maintenance, including a post closure monitoring network
- Material changes to operational and/or closure surface water management plans.

6.4.8. Regional groundwater levels do not recover to pre-mining levels and require ongoing management to prevent impacts to sensitive receptors

Groundwater levels will be affected during operations at Winu due to pit dewatering activities to enable mining below the water table and also through supplementary water required for processing sourced from the Rimfire bore field. Modelling of the drawdown of the groundwater associated with both aspects has been studied with no impacts to sensitive receptors anticipated.

6.4.8.1. Risk Mitigation

Pit dewatering is a necessary part of accessing the below water table resources at Winu. Avoidance of pit dewatering would make the project uneconomic, likewise backfilling of the pit void to above the water table is unfeasible. The water levels in the pit void have been predicted to recover to approximately 90m AHD, 100m below the pre-mining water table. However, the significant depth to pre-mining water table results in no sensitive receptors being present.

The Rimfire borefield was selected as the most appropriate source for supplementary water supply, with alternatives being eliminated due to potential negative environmental outcomes.

Extensive studies into groundwater recovery for both the pit void and the borefield has been completed. A Groundwater operating Strategy and Closure Groundwater Management Strategy will be required to manage the risk of impacts to groundwater. In addition, the following will be required and updated in future versions of the MCP:

- 5C Licence to Take Water (GWL) and associated conditions
- Groundwater Recovery model and model to predict long-term and stabilised hydrogeological conditions
- Operational and post-closure groundwater monitoring to verify predictive models and to inform adaptive management.

6.4.9. Changing geotechnical slope conditions or adverse environmental events leads to instability of the pit crest beyond the predicted zone resulting in impacts to the surrounding landscape

The development of a pit void is an unavoidable component of the Winu project. As the pit develops, geotechnical conditions will change, with further changes to be expected during dewatering and recovery of the groundwater post closure. These changing conditions if left unmanaged could result in unstable pit walls.

6.4.9.1. Risk Mitigation

A Ground control management plan will be in place throughout operations, this will include the development of coupled hydrogeological and geotechnical models, along with ground stability monitoring. Pit designs are designed to be stable throughout the operating life. Post closure, the pit wall conditions will change over time. An assessment of the Zone of Instability has been undertaken, aligned with the Safety Bund Walls Around Abandoned Open Pit Mines (Department of Industry and Resources, 1997), this predicts the maximum disturbance zone based on the final pit design. No permanent landforms will exist within the Zone of Instability at closure.

Future Mine Closure Plan updates will include updates on the following:

- Assessment of closure implications of geotechnical characterisation of mined waste rock during operations
- Confirmation that characterisation and designs meet requirements of the Rio Tinto Group Standard - D3 Management of slope geotechnical hazards, as operations progress
- Construction details of final landforms with appropriate FoS
- Details of post-closure monitoring programs for geotechnical stability, and remedial works where required
- Development of an operational Compliance to Plan Process (incl spatial compliance).

6.4.10. Exposure of PAF rock leads to AMD resulting in land or water contamination AND management of PAF tailings streams leads to AMD resulting in land or water contamination

The terminology AMD refers to both the risk of acidic drainage and neutral drainage with elevated soluble metals and/or metalloids. The geochemistry test work has enabled the designation of PAF rocks within the geological and mine planning models. PAF materials will be mined as part of the Winu life of mine plan. The location of these materials is such that ore extraction necessitates their exposure.

The geochemical test work also assessed the risk for soluble metal or metalloids from NAF waste material. Uptake by vegetation and bioaccumulation is possible if there are elevated particular constituents (eg. molybdenum and tungsten) that become soluble from the waste. The geochemical evidence shows that NAF waste contain extremely low concentrations of mobile metals. Under rehabilitated surface conditions, metals remain strongly bound in immobile mineral phases, resulting in negligible bioavailability to vegetation and, consequently, negligible potential for transfer into terrestrial food webs.

The processing flow sheet has been designed to separate HST and LST streams to minimise the quantum and overall footprint of higher AMD risk tailings.

6.4.10.1. Risk Mitigation

The Rio Tinto E13 – Chemically reactive mineral waste management Standard (Rio Tinto, 2017), has been utilised in the management of the AMD risk at Winu. The intent of the standard is to prevent, or otherwise minimise, mitigate and remediate the effects that operations have on communities and environments. A specific Winu AMD S&MP has been developed to comply with the Rio Tinto E13 Standard and articulate the details of leading practice PAF material management, thereby minimising the risk of AMD generation during operations and at mine closure.

As discussed, the exposure of PAF materials is an unavoidable component of the Winu project.

Preliminary characterisation of mined materials has been undertaken and has been used to develop the Winu AMD S&MP. This plan includes the management of PAF materials across the Winu project and includes final encapsulation within the WRL and TSF.

A groundwater management model has been developed and includes the use of a Source, Pathway, Receptor model, which predicts the development of the pit lake as a terminal sink. Following the hierarchy of controls:

- Elimination of PAF is not feasible
- Characterisation has been undertaken to understand the AMD risk associated with tailings and waste rock. This knowledge has been built into geological and mining models
- Segregation has been implemented through the separation of tailings streams into HST and LST thereby reducing the overall acidity of the TSF
- Segregation of NAF/PAF waste from the pit on the WRL
- Encapsulation of PAF material in the WRL and TSF to include appropriate basal layers and liners, operational separation and final covers, including surface water management
- Containment of potential AMD from ore stockpiles via bunds
- Any AMD captured will be sent to the process plant where it will undergo appropriate treatment.

The modelled prediction of the pit void becoming a terminal sink, will manage the risk of any AMD that eventuates and reports to the pit lake. The water quality of the terminal sink has been assessed has having negligible environmental impact and includes different climate scenarios. Refer to Sections 8.1.1 and 9.1.1 for more detail.

Whilst the current geochemical test work indicates a low risk for contaminant transfer into terrestrial food webs, this risk will be continually assessed as part of routine geochemical characterisation (a requirement in the Winu AMD S&MP) and the MCP updates. This will include the establishment of

natural background levels of metals in selected flora and fauna and the inclusion of metal uptake assessment as part of rehabilitation trials.

Future Mine Closure Plan Updates will include:

- Details on operational procedures and increases to the closure knowledge base relevant to the management of AMD risks
- Ongoing calibration and update of geochemical models including climatic data
- Details of compliance to plan processes for waste management during construction and operations
- The design and execution of TSF and WRL cover trials
- Compliance to Plan processes (incl. spatial) for TSF and WRL covers
- Details of TARPs to be developed to manage the risk of AMD
- Update of Operational Surface Water Management Plan to include tactical management aspects
- Ongoing development of a Closure Surface Water Management Plan.

6.4.11. Surface water drainage into pit voids leads to filling and uncontrolled overflow, or ponding against permanent landforms resulting in scour and down-gradient sedimentation impacts to cultural heritage or environmental values

During operations a surface water management plan will be in place to manage any surface water flows in large rainfall events. The pit void does not intersect any surface water features. The closure safety bund and the permanent landforms (WRL and TSF) may create instances of water ponding in high rainfall events. Ponding water may impact the structural integrity during dynamic conditions.

6.4.11.1. Risk mitigation

Modelling of surface water in a range of rainfall events has been modelled and is discussed further in Section 8.1.3.4. This shows predicted water ponding levels against the permanent landforms in a range of rainfall events. Additional work will be required to understand the implications of the ponding and drawdown on structural integrity. The current modelling is based on the closure safety bund limiting the ingress of water into the pit void. An additional scenario will be modelled with the bund acting as an access restriction barrier only (i.e. will allow water to pass through).

Predictive models show that the risk of the pit overtopping as result of surface water flows is extremely low, as the pit lake is predicted to be a terminal sink with final level > 150m below ground level.

Any additional management requirements as result of the updated models will be discussed in future updates of this MCP.

Future updates of this MCP will include:

- Details of additional modelling and implications for final landform and closure safety bund requirements, including implications of remobilisation of sand dunes
- Hydrological modelling updates for closure including sensitivities and climate scenarios
- Development of a specific surface water management plans will be developed for closure.

6.4.12. Long-term pit lake conditions leads to groundwater level or water quality changes resulting in impact to a sensitive receptor or groundwater beneficial use

The risk of inadequate management of seepage increasing the closure complexity of the pit lake is closely linked to the previous risk discussed above. An additional aspect for consideration in this risk is the seepage pathway through the underlying geology and through the pit walls.

The potential for contaminants in the pit lake to enter terrestrial food webs via emergent insects has been assessed via an Environmental Risk Assessment (ERA) (see Mine Lake Consulting (MLC),

2025)). The ERA concluded that the Winu pit lake will be an oligotrophic, steep-sided and low-productivity waterbody with extremely limited littoral habitat and very low biomass of aquatic invertebrates. While some aquatic insects may develop during early filling, their abundance is expected to be minimal, and the lake will rapidly become increasingly saline and unproductive. Consequently, emergent insects are not expected to form a significant dietary component for waterbirds or bats. The ERA therefore concluded that the risk of bioaccumulation or biomagnification of metals through the pit-lake food web and into terrestrial receptors is very low.

Nonetheless, to assess whether metal bioaccumulation in vegetation and into terrestrial food-webs after closure needs to be managed, the following investigations will be undertaken:

- Before mining, the Proponent will:
  - Determine the concentrations of a suite of metals in the tissue of key plant species in the MIA, to determine natural background levels of metals in vegetation in the area
  - Determine background levels of metals in the tissue of key lizard and snake species within the MIA, as reptiles are considered to be the most sensitive receptors for metal contamination in the area because of their limited range and their position in local food-webs. This testing will establish natural background levels of metals in these fauna groups for any monitoring that would take place after mine closure
- During LOM, undertake trials of the growth of key rehabilitation species in various mine-waste materials to determine whether the uptake of metals by plants is likely to be a significant environmental issue after mine closure.

The investigations will be incorporated into the regular MCP updates as these progress.

In addition, although the risk is considered very low, the Proponent will implement a pit lake monitoring program after mine closure to identify risks of failing to meet closure objectives of the pit lake domain being non-polluting.

6.4.12.1. Risk mitigation

Controls to manage this risk are consistent with those above and follow the hierarchy of controls, including:

- Winu AMD Strategy and Management Plan
- Mine planning procedures include regular updates of material inventory
- WRL located within drawdown zone of pit void (terminal sink)
- TSF designed with low permeability liner
- TSF designed within drawdown zone of pit lake aquifer (terminal sink)
- PAF management strategy that encompasses:
  - Construction of HST and LST cells
  - Maintenance of a pond over the HST cells to maintain saturated conditions during mine operations, with a dry cover at closure
  - Installation of TSF/WRL covers at closure
  - WRL and TSF designs incorporate closure in design concepts such as source control
  - Closure Surface Water Management Plan.

Future Mine Closure Plan Updates will include:

- The establishment of operational controls to reduce mine closure risks e.g. ensuring the HS tailings do not oxidise during operations via monitoring of the water cover thickness
- Development of Spatial Compliance to Plan procedures for waste management
- Design and execution of final cover field trials

- Details of TARPs and monitoring programs (cover effectiveness and seepage) that allow for early intervention
- Ongoing calibration and update of geochemical models, including seepage pathways and pit lake rebound.

6.4.13. Changing geotechnical slope conditions or adverse environmental events lead to waste rock landform slope failure resulting in down-gradient impacts to cultural heritage or environmental values AND changing geotechnical slope conditions or adverse environmental events lead to TSF embankment failure resulting in down-gradient impacts to cultural heritage or environmental values

Permanent engineered landforms will remain at closure, namely the pit void, WRL and TSF. These landforms will be subject to the influence of natural erosion processes and changing geotechnical conditions post the operational timeframe.

6.4.13.1. Risk mitigation

Geological data has been collected during the exploration and project development stages using a combination of diamond drilling, Reverse Circulation (RC) drilling and seismic techniques to create structural geological models This information has been utilised to produce geotechnical design criteria to inform the design of permanent engineered landforms that will remain at closure.

The data has also been used to determine the potential Zone of Instability around the pit void, which has in turn informed the placement of the pit closure safety bund, following DMPE guidelines. It is important to note that standard practice geotechnical design criteria for open pits are based on operational stability rather than closure, as such it is to be expected that the pit wall may eventually fail to the extent of the Zone of Instability at some point post closure but will not breach the closure safety bund.

The Rio Tinto D3 Standard Management of Slope Geotechnical Hazards and D5 Management of Tailings and Water Storage Facilities have been utilised in the design of the permanent engineering landforms (pit void, WRL and TSF), along with relevant industry standards and guidelines, such as the Global Industry Standard for Tailings Management (GISTM), Australian National Committee on Large Dams (ANCOLD) and International Commission on Large Dams (ICOLD).

These standards follow a Plan-Do-Check-Act approach, including the requirements for a monitoring program.

Surface Water management models have been developed for both the operational and closure timeframes to ensure water does not adversely affect the structural integrity of engineered landforms. Temporary ponding is expected at the toes of the permanent landform in extreme rainfall scenarios Whilst landforms have been designed with competent rock armour on the slopes, these designs will be validated through additional geotechnical analysis of the design, including the underlying geology, and site trials prior to closure. This will also include assessment of the impacts of any perched water in the closure landforms as the ponding gradually drains.

This is discussed in more detail in Section 8.1.3.4.

Preliminary groundwater models have been developed and utilised in geotechnical assessments. These will require further data and validation during operations to improve the understanding of changes in pore pressures as groundwater is dewatered and recovers post dewatering.

Future Mine Closure Plan updates will include details of updates to designs for permanent landforms informed by an expanded closure knowledge base including:

- Development and updates of coupled hydro/geotechnical models to assess pore pressure changes during Groundwater recovery
- Additional seismic surveys for foundation conditions under permanent landforms

- Assessment of impact of ponding during extreme rainfall events
- Updates to geotechnical, groundwater and surface water models
- Updates to chemical and physical characterisation of mineral wastes
- Details of monitoring plans to collect data to calibrate preliminary designs with field data during operations
- Details of closure monitoring plans to validate model performance.

6.4.14. Excessive erosion from the final landform leads to loss of growth media and generation of sediment resulting in failure of revegetation and down-gradient impacts to cultural heritage or environmental values

The creation of permanent landforms to manage mineralised waste is an inherent part of the mining process at the Winu Project. As these landforms will exist post closure the basis of design includes appropriate long-term time frames.

6.4.14.1. Risk mitigation

The only option to eliminate the creation of permanent waste landforms, would be to place the mineral wastes into the pit void at closure. This is not feasible, due to the nature of the ore body. Any backfill would result in sterilisation of ore, significant carbon emissions and be cost prohibitive due to significant rehandling of waste.

Substitution in the risk hierarchy is demonstrated through the holistic characterisation and segregation of waste materials into those with beneficial and deleterious qualities. In doing so, the mineralised wastes that will be subject to erosive forces (i.e. those close to the surface of the final landforms) have been substituted from simple ‘run of mine’ placement to those with the most appropriate characteristics.

These characteristics have then been incorporated into the engineered designs of the exposed surfaces of the permanent landforms.

Fundamental controls can be described using a Plan-Do-Check-Act approach:

- Plan: initial and ongoing comprehensive characterisation of materials, development of preliminary designs
- Do: establishment of trials to test effectiveness of final landform designs
- Check: monitoring of trials, validation of characterisation, compliance to plan of waste material placement
- Act: ongoing review and update of mine plans and designs to incorporate best available knowledge.
- Finally administrative controls will be enacted through the use of appropriate procedures at both the corporate level (existing Rio Tinto Design Standards - D3 Standard Management of Slope Geotechnical Hazards and D5 Management of Tailings and Water Storage Facilities) and site specific (Winu S&MP, Winu Rehabilitation Handbook)
- In addition, benchmarking of closure landforms at other sites in similar environments has commenced (Landloch, 2020) and will continue through operations.

Ultimately the WRL will reach a height of approximately 80 m above ground level (four 20 m high lifts), approximately 2 km wide (east/west) and 2 km long (north/south). A key element of the WRL is that the HST cells will be encapsulated by the western outer wall of the WRL, as well as WRL extensions to the north and south of the HST cell, creating a stable integrated WRL/TSF landform. Refer to Section 8.1.2 for more detail on the WRL domain.

Conceptual landform erosion modelling (Landloch, 2020) and WRL cover design (O'Kane Consultants, 2020) was completed to inform the WRL closure design in order to maximise WRL landform stability, minimise erosion and seepage and maximise rehabilitation success. This design has been informed by:

- Landform erosion modelling (Landloch, 2020) recommending the most suitable competent, inert waste rock for emplacement on the design outer slope during operations
- 20-metre-wide back sloping berms guided by Landloch, DEMIRS (Department of Mines, Industry Regulation and Safety (DMIRS), 2023) and feedback from experience of rehabilitation of waste rock landforms in the Northern Pilbara
- 15-degree batter slope angle for the 20-metre-high lifts, with perimeter bunds, guided by Landloch and feedback from experience of rehabilitation at Telfer (EarthSystems, pers comms 2023).

Figure 6-5 depicts the planned modifications to the outer profile for the WRL post-closure to promote stability, minimise surface erosion and promote vegetation re-growth.

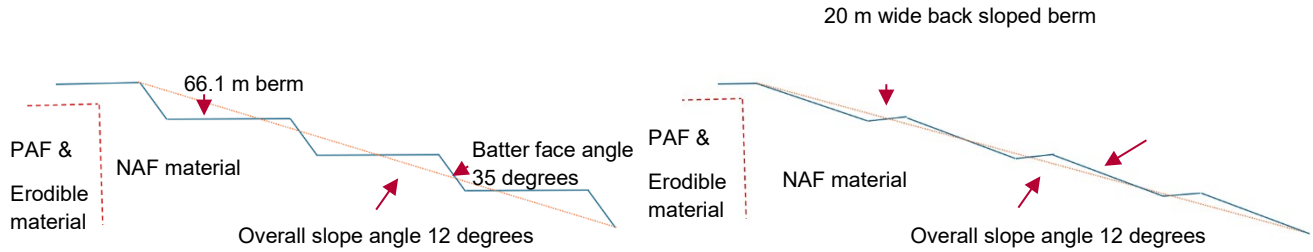


Figure 6-5: Profile of the WRL Outer Wall During Operations and Following Closure

Future Mine Closure Plan updates will include the following:

- Updated mineral waste characterisation details
- Landform design guidelines for use in operations
- Details of planned and executed research and trials
- Details of planned and executed progressive rehabilitation
- Details of planned and executed monitoring programs
- Details of Winu Rehabilitation Handbook
- Development and reporting of closure enabling operational KPIs (e.g. spatial compliance to plan).

6.4.15. Final integrated landform design (combined WRL and TSF) does not consider the local physiography of the natural landscape resulting in visual amenity impacts

The existing Winu landscape comprises low dunal structures between 8m and 20m high. The Winu project will result in the development of a permanently altered landscape at closure, with the construction of the WRL and TSF permanent landforms.

To inform Traditional Owners and other stakeholders, a visual impact assessment has been completed to better describe the visibility of permanent landforms from various viewshed locations in the region. The visual amenity report is available in Appendix C and is depicted and summarised in Figure 6-6 and Table 6-3.

Visual impacts associated with the above ground permanent landforms (WRL and TSF) are assessed as being either not visible or having a low (level 3) visual impact.

Table 6-3: Visual Impact Levels

View Location	Visual Impact Level
Camp 1	None
Nyangumarta Hwy & Wirlkirr Wirlkirr Rd	Level 3 (Turbines)

	None (TSF, WRL)
Wirlkirr Wirlkirr Rd & Copperhead Rd	Level 1 (Turbines) None (TSF, WRL)
Copperhead Road (NW Approach)	Level 1 (Turbines) Level 3 (TSF, WRL)
Copperhead Rd (intersecting mining lease)	Level 1 (Turbines) Level 3 (TSF) None (WRL)
Magnum Camp	Level 3 (Turbines) None (TSF, WRL)
Airstrip	Level 3 (WRL, Turbines) None (TSF)
Martu NTD Boundary	Level 3 (TSF, WRL, Turbines)
Proposed Accommodation Camp	Level 1 (Turbines) Level 3 (WRL) None (TSF)
Winu Soak	Level 3 (TSF, WRL, Turbines)
Near Mine East	Level 1 (Turbines, WRL) None (TSF)
Airstrip West	Level 3 (Turbines, WRL) None (TSF)
Texas	Level 3 (Turbines, WRL) None (TSF)
Rimfire	Level 3 (Turbines) None (TSF, WRL)
Magnum West	None

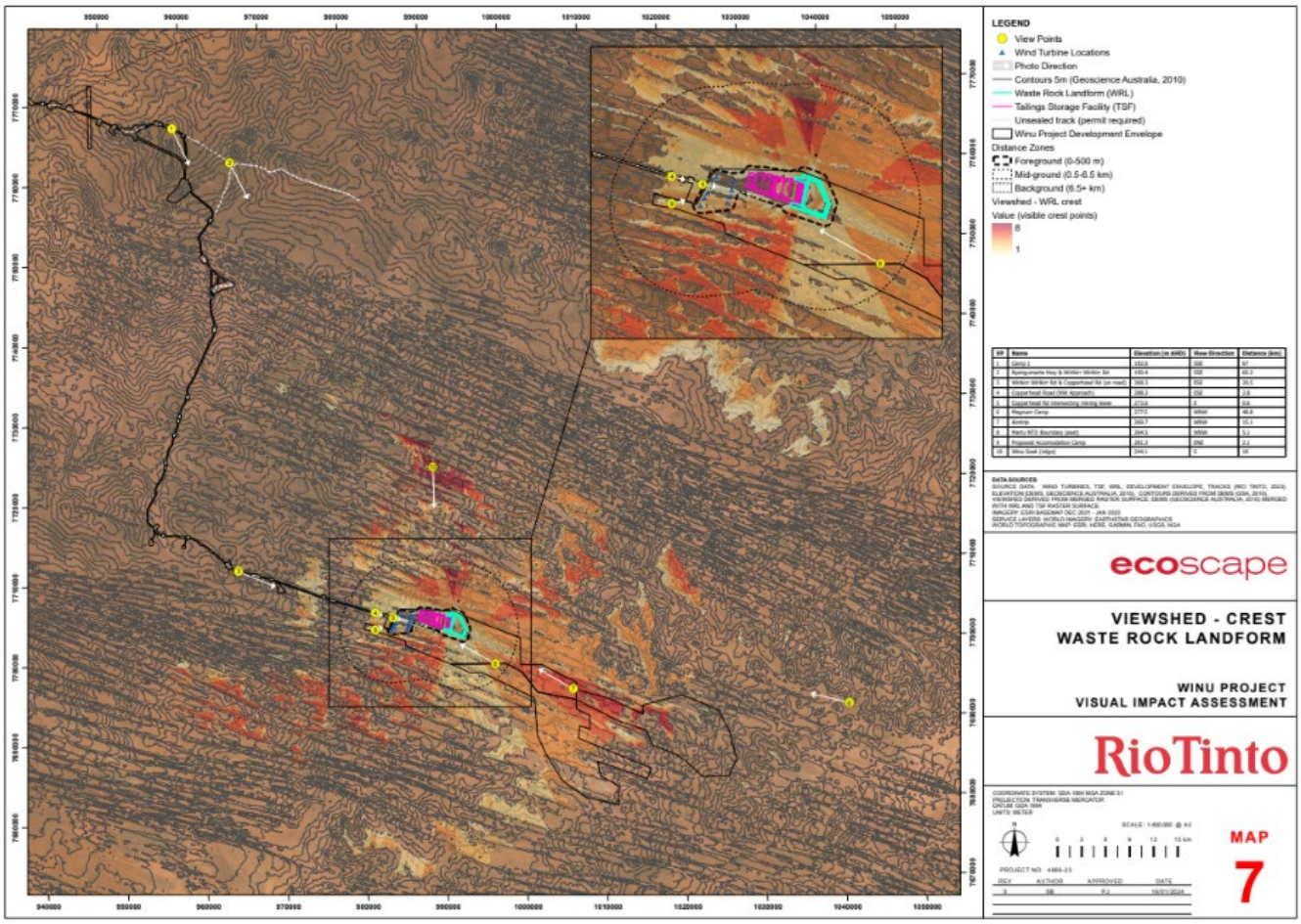


Figure 6-6: Viewshed of Waste Rock Landform

6.4.15.1. Risk Mitigations

- Elimination of permanent landforms is not economically feasible to the Project
- Landform designs have been a trade-off between height and footprint due to minimizing disturbance to the dunes.
- Permanent landforms have been designed with a maximum height of 80m and will be reshaped and vegetated.
- Visual impact studies have been undertaken and shared with stakeholders. The Project is a significant distance from the nearest community. The studies demonstrate no impact from culturally significant locations or access roads. The study reports have been shared and discussed with the Nyangumarta People and Martu People.

Future updates of the MCP will include details on the following:

- Modified landform designs based on outcomes from landform evolution modelling
- Details of vegetation plans
- Assessment of viability of geomorphic landform design potential.

6.4.16. Revegetation fails due to insufficient or poor quality growth medium resulting in an inability to meet biological closure outcomes

Whilst a Winu Asset Closure Strategy had been developed, along with associated conceptual closure outcomes, successful delivery will require ongoing attention throughout the Project lifecycle. The overarching

intended post mining land use for Winu is for the site to be rehabilitated to create a safe, stable and non-polluting landscape revegetated with self-sustaining native species.

Detailed completion criteria will be required to demonstrate that these outcomes have been achieved and will be reliant on increasing maturity of the closure knowledge base from the Project stage through to closure.

As the closure knowledge base matures, changes to operational and closure plans may be required to ensure that the closure criteria can be met.

6.4.16.1. Risk mitigation

Wherever possible activities at Winu have been designed to eliminate environmental impact through the construction and operations phases. For example, planned mine and infrastructure (bore field locations) have been relocated during the Project stage to minimise disturbance to significant features or species.

Detailed baseline studies have been completed for both the immediate project area that will be disturbed and adjacent areas, which will not be directly disturbed by the Winu operation. Planned disturbance has been minimised as far as is practicable and is governed via a Ground Disturbance approval system.

Areas of high environmental significance have been excluded from the Project's development envelope.

Preliminary technical studies have been completed, including the development of conceptual models and plans. These will be validated and updated as operations progress and the knowledge base increases, for example Surface and Ground Water Management plans.

Implementation of a well-developed EMS and integrated mine plans will ensure that operational activities are managed, such that any potential impacts to the successful delivery of closure outcomes are identified and remediated in a timely manner.

In the areas where disturbance is unavoidable, topsoil and other beneficial materials for closure have been characterised, and management activities incorporated into integrated mine, such that they will be available for future closure activities.

Similarly, management for those materials that have deleterious characteristics (erosion prone, potentially acid forming) have also been incorporated into mine plans.

Weed management will be a consistent risk that requires management throughout the life of the operations, accordingly the EMS includes appropriate Weed Management procedures.

High level learnings from rehabilitation at other Rio Tinto operations and those in similar environmental settings have been incorporated into this MCP and will continue to be evaluated.

Future Mine Closure Plan updates will include the following:

- Updates of closure knowledge base
- Progressive rehabilitation trials including landform designs
- Development of a Winu Rehabilitation handbook that incorporates learnings from similar projects
- Seed management and procurement program
- Soil Management Plan
- Development and reporting of closure enabling operational KPIs (e.g. spatial compliance to plan)
- Skilled and resourced closure planning team within Winu
- Preliminary Research and Development program and associated trials
- Increasing maturity of completion criteria
- Details of planned and executed progressive rehabilitation
- Details of planned and executed monitoring programs that enable early intervention.

6.4.17. Revegetation fails due to inadequate weed management practices during operations and closure execution resulting in an inability to meet biological closure outcomes

The Winu site is largely undisturbed and hence there have been minimal weeds detected in the Project area. Four weed species have been encountered to date and are detailed in Section 3.2.5.8. The construction of the project will result in significant movements of vehicles to the site and presents a risk of the spread of weeds. Weed Management practices will be embedded into operations, however a risk remains for transmission of seeds, including by non-vehicular means (fauna movements).

6.4.17.1. Risk Mitigation

The disturbance footprint will be minimised to minimise the development of conditions favourable for weed species.

Engineering controls will be established during construction of the project to maintain vehicle hygiene (wash down facilities) throughout the life of operations and into closure. Throughout the operating timeframe, and in to closure any redundant vehicle access tracks will be ripped to limit vehicle movements into undisturbed areas.

Mapping of weed populations adjacent to access routes will be undertaken and used to inform the development of a Weed Management Plan, including targeted treatment. This will be updated as the project moves into Closure execution.

Future updates of the MCP will include details of any closure specific weed management actions specific to closure execution and details of management actions for weeds detected in progressive rehabilitation.

6.4.18. Rehabilitation techniques are not sufficient to meet the required completion criteria and associated biological closure outcomes

Whilst conceptual closure outcomes have been developed, the Project is at an early stage, therefore associated completion criteria are also conceptual in nature and yet to be agreed with key stakeholders. Timely progression of agreed closure outcomes and increasing maturity of completion criteria will be required to manage the risk of completion criteria not being agreed upon by the time closure eventuates.

6.4.18.1. Risk mitigation

Management of this risk requires a regular and ongoing dialogue with all stakeholders and has strong links to many of the other risks presented in this section. As such a specific Closure Stakeholder Engagement Strategy will be developed.

As the technical knowledge base matures, this data will be used to develop and refine appropriate completion criteria with stakeholders. Completion criteria will be developed in line with SMART principles. Leading Key Performance Indicators will be established to ensure operational activities that enable effective closure are undertaken (e.g. spatial compliance to plan for waste), as well as the development of completion criteria to confirm closure outcomes have been met.

Future Mine Closure Plan updates will include the following:

- Closure Stakeholder Engagement Strategy and outcomes
- Updates of closure knowledge base
- Development and reporting of closure enabling operational KPIs (e.g. spatial compliance to plan).
- Increasing maturity of completion criteria
- Development of a Winu Rehabilitation Handbook that includes details of planned and executed research and trials, planned and executed progressive rehabilitation, and planned and executed monitoring programs.

7. CLOSURE OUTCOMES AND COMPLETION CRITERIA

7.1. Closure outcomes

As the Winu Project is still subject to approval processes, preliminary closure outcomes have been proposed. The preliminary closure outcomes have been developed with consideration of Rio Tinto's general vision for closure, which is to:

- Relinquish its mining leases to the Western Australian State Government, as Unallocated Crown Land
- Preserve, protect and manage the cultural heritage and values of the area in cooperation with the Traditional Owners and other stakeholders to develop and implement strategies for closure that consider the implications on local communities
- Achieve completion criteria that have been developed with stakeholders and agreed with WA Government
- Develop landforms that are safe, stable and compatible with the surrounding environment and post-mining land use (including land use restrictions, where necessary)
- Achieve environmental outcomes that are compatible with the surrounding environment
- Achieve successful closure in a cost-effective manner.

Rio Tinto's overall goal of mine closure for the Winu Project is to relinquish the tenements to the State Government through demonstrating that the agreed closure outcomes have been achieved. This can only occur once the government and community agree that the condition of the site is compatible with agreed post-mining land use(s). Closure outcomes do not represent the full range of issues that need to be addressed upon closure; rather they represent the key outcomes against which the ability to relinquish will be assessed. The proposed closure outcomes are presented in Table 7-1.

7.1.1. Winu closure outcomes

Closure outcomes presented in this initial MCP have been developed to generally align with the standard closure outcomes presented in the DMPE, formerly DEMIRS, Guideline for preparing Mine Closure Plans (Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), 2025a). Some of the DMPE standard outcomes have been amended to reflect the specific needs for the site. Non-standard (NS) outcomes have also been added to either address additional aspects of closure.

Closure outcomes for Winu are presented in Table 7-1.

Table 7-1: Winu closure outcomes

Aspect	Winu ID	Rio Tinto Winu Closure Outcome
Physical and geochemical stability	C1	Constructed landforms are physically and geotechnically stable, have minimal erosion and support native revegetation and/or the post-mining land uses
	C2-A	Footprint of constructed landforms, cultural heritage sites and permanent infrastructure are located outside the potential Zone of Instability of pit voids
Landscape	C3	Constructed landforms are designed with consideration of visual amenity, cultural values and local topography
Geotechnical stability	C4	Constructed landforms are geochemically non-polluting
Land contamination	C5	All environmentally hazardous chemicals, rubbish and contaminating materials have been removed, treated, managed and/or disposed in a manner that does not preclude the post-mining land use
Surface water	C6-A	Water quality and altered surface water regimes do not have a detrimental impact on sensitive receptors and do not preclude the post-mining land use(s)

Groundwater	C7-A	Pit lakes do not have a detrimental impact on sensitive receptors or other water resources
	C8-A	Water quality and altered groundwater regimes do not have a detrimental impact on sensitive receptors and do not preclude the post-mining land use(s)
Flora and vegetation	C9	Rehabilitated land is consistent with agreed reference vegetation communities and/or with the post-mining land use
Fauna	C10	Rehabilitated land provides habitat for native fauna, indicative of the target ecosystem and/or post-mining land use
Ecosystem function	C11-A	Rehabilitated land has function and resilience indicative of the target ecosystem and/or post-mining land use
Physical safety	C12-A	The rehabilitated landscape is made safe to humans and animals as far practicable
		Not applicable
Infrastructure	C14-A	No infrastructure left in-situ, above 1m below ground level. Heavily reinforced concrete foundations associated with wind turbines, will be removed to ground level and capped with up to 1m of cover material to facilitate vegetation establishment with appropriate species.
Stakeholder engagement	C15-NS	Key stakeholders have been actively engaged regarding closure to ensure expectations are considered and met where practicable
Cultural heritage	C16-NS	Nyangumarta and Martu cultural heritage values have been preserved during closure implementation where practicable, in consultation with Traditional Owner representatives

The intent is that closure outcomes remain consistent throughout the life of the asset, however, there may be instances where they are amended based on regulator guidance or stakeholder engagement.

Closure outcomes may be amended in future iterations of the MCP as the Project progresses through internal and external approvals, knowledge gaps are addressed, and stakeholder engagement progresses. Preliminary completion criteria and measurement tools to support each closure outcome are presented and discussed in Section 7.2.

7.2. Completion criteria

Completion criteria are defined as the indicators used to determine whether closure outcomes have been met; they are used to measure the success of closure implementation, and to facilitate relinquishment of mining tenure.

The completion criteria summary presented in Table 7-2 address key closure risks and reference the proposed closure outcomes required to meet the post-mining land use(s) for Winu. Detailed tables presenting associated verification and monitoring requirements will be developed and presented in future version of this MCP.

Each revision and update of the Winu MCP will include further refinement of closure outcomes and completion criteria – based on regulator, Traditional Owner and other stakeholder feedback - and tested through analysis of monitoring results.

As the Winu project is at the planning stage and subject to approvals, the presented completion criteria are conceptual in nature, specific to domains and provided for guidance purposes only. As operations commence, stakeholder relationships mature, and operational experience develops, more specific, measurable, actionable, realistic and time based (SMART) criteria will be developed. This approach will be in line with leading practice closure guidance references; (Department of Mines, Industry Regulation and Safety (DMIRS), 2023), (Young, et al., 2019), and (ICMM, 2019).

Table 7-2: Winu closure outcomes and completion criteria

Risk ID	Aspect	Closure outcome	Risk Pathway	Completion Criteria
1	Stakeholder engagement	C15-NS Key stakeholders have been actively engaged regarding closure to ensure expectations are considered and met where practicable	Regulatory requirements and/or technical constraints limit adoption of stakeholder feedback resulting in closure execution that does not meet stakeholder expectations	• Safe post-closure access routes co-designed and established for Nyangumarta People and other future land use manager(s)/owner(s), excluding exclusion areas
2	Cultural heritage	C2-A Footprint of constructed landforms, cultural heritage sites and permanent infrastructure are located outside the potential Zone of Instability of pit voids C16-NS Nyangumarta and Martu cultural heritage values have been preserved during closure implementation where practicable, in consultation with Traditional Owner representatives	Closure execution results in unintended impact to cultural heritage places or values, or post-closure access restriction for the Nyangumarta People and Martu People	• Cultural Heritage Management Plan co-developed with the Nyangumarta People and Martu People • Repatriation of heritage artefacts or transfer to the Nyangumarta People and Martu People for safe keeping as per the Cultural Heritage Artefact Repatriation Plan
3	Physical safety	C2-A Footprint of constructed landforms, cultural heritage sites and permanent infrastructure are located outside the potential Zone of Instability of pit voids C12-A The rehabilitated landscape is made safe to humans and animals as far practicable C14-A No infrastructure left in-situ above 1m below ground level. Heavily reinforced concrete foundations associated with wind turbines, will be removed to ground level and capped with up to 1m of cover material to facilitate vegetation establishment with appropriate species.	Closure execution retains public safety hazards resulting in unsafe areas post-closure requiring long-term management	• Closure safety bunds have been constructed in alignment with DMPE guidelines • Construction of integrated crest bunds on the top surface of Waste Rock Landforms prevents inadvertent access to prevent inadvertent access to the outer batters by people in a vehicle/trail bike • Access to the pit lake will be eliminated, post mining land uses will be limited accordingly, to manage public safety. • Decommissioning infrastructure agreed for removal will include all services and footings up to 1 mbgl at closure, except for heavily reinforced concrete foundations, which will remain in place and a cover installed to facilitate vegetation with local shallow rooted species

4	Physical safety	C12-A The rehabilitated landscape is made safe to humans and animals as far practicable	Open holes or water storage areas remaining following closure execution leads to fauna entrapment resulting in fatality	• Removal of infrastructure as per the site Decommissioning and Demolition Plan, including decommissioning bores and open holes, removal of all unlined and lined water storage areas
5	Land contamination	C5 All environmentally hazardous chemicals, rubbish and contaminating materials have been removed, treated, managed and/or disposed in a manner that does not preclude the post mining land use(s)	Contaminating activities during operations leads to land, surface and groundwater contamination requiring remediation at closure	• Identified contaminated material removed or remediated in accordance with the Contaminated Sites Act 2003
6	Land contamination	C5 All environmentally hazardous chemicals, rubbish and contaminating materials have been removed, treated, managed and/or disposed in a manner that does not preclude the post mining land use(s)	Operational waste management and decommissioning activities leads to loss of containment into surrounding undisturbed areas which reduces environmental and cultural values	• Identified contaminated material removed or remediated in accordance with the Contaminated Sites Act 2003
7	Surface water	C6A - Water quality and altered surface water regimes do not have a detrimental impact on sensitive receptors and do not preclude the post-mining land use(s)	Mining activities alter the hydrological regime resulting in direct impacts to sensitive receptors within and down-gradient of the mine	• PAF material will be encapsulated as per the WRL and TSF design and AMD Strategy and Management Plan • Outer, exposed surfaces for the WRL will be constructed with durable, NAF waste rock such that erosion losses are minimised • Mining footprint is not within the floodplain of any surface water features • Pit void models calibrated with recovery data to demonstrate that the pit lake will not overflow • All surface infrastructure removed apart from permanent landforms
8	Groundwater	C8-A Water quality and altered groundwater regimes do not have a detrimental impact on sensitive receptors and do not preclude the post-mining land use(s)	Regional groundwater levels do not recover to pre-mining levels and require ongoing management to prevent impacts to sensitive receptors	• Pit lake rebound water levels and quality are trending as per models • PAF materials have been encapsulated to minimise the potential for post-closure pollution as per the AMD S&MP

				• Landforms located within the pit void groundwater drawdown area so that any migration of elevated solutes will be localised to the pit void • Perimeter monitoring confirms no outward flow from pit lake into ground water • Access to the pit lake will be eliminated, post mining land uses will be limited accordingly, to manage public safety.
9	Physical and geotechnical stability – Pit Void	C1 - Constructed landforms are physically and geotechnically stable, have minimal erosion and support native revegetation and/or the post-mining land uses	Changing geotechnical slope conditions or adverse environmental events leads to instability of the pit crest beyond the predicted zone, or resulting in impacts to the surrounding landscape	• Validation of geotechnical inputs into the Zone of Instability refined over life of mine • Construction of safety closure bunds which meet the design and location requirements of the DoIR 1997 Safety bund walls around abandoned open pit mines guideline to prevent inadvertent access by people in a vehicle/trail bike • Post mining land uses will be limited to protect the surface stability and development of a self-sustaining ecosystem
10	Geochemical Stability – Pit Void, WRL	C4 - Constructed landforms are geochemically non-polluting	Exposure of potentially acid forming rock leads to acidic or metalliferous drainage resulting in land or water contamination	• Pit lake rebound water levels and quality are trending as per models • Ex-pit PAF materials have been encapsulated to minimise the potential for post-closure pollution as per the AMD Strategy and Management Plan • Landforms are located within the pit void groundwater drawdown area so that any migration of elevated solutes will be localised to the pit void • Perimeter monitoring confirms no outward flow from pit lake into ground water

11	Geochemical Stability - TSF	C4 - Constructed landforms are geochemically non-polluting	Management of potentially acid forming tailings streams leads to acidic or metalliferous drainage resulting in land or water contamination	• The TSF constructed in alignment with the approved design criteria, including liners and appropriate covers for the HST and LST cells • Tailings separated and encapsulated as per TSF Closure and AMD S&MP procedures • A tension-saturated cover constructed on the HST cells at closure, with appropriate NAF cover and not be revegetated • Spillways constructed to manage 72-hour PMP rainfall events, detention bunds to attenuate flow rates • Outer, exposed surfaces constructed with durable, NAF waste rock covers such that erosion losses are comparable to surrounding analogues • Detention bunds with rockfill through-flow zones constructed with appropriate materials to manage closure surface water flows from rainfall
12	Surface Water – Permanent Landforms	C6A - Water quality and altered surface water regimes do not have a detrimental impact on sensitive receptors and do not preclude the post-mining land use(s)	Surface water drainage into pit voids leads to filling and uncontrolled overflow, or ponding against permanent landforms resulting in scour and down-gradient sedimentation impacts to cultural heritage or environmental values	• Closure designs consider flood depths under major rainfall and flooding events and remobilisation of sand dunes • Outer, exposed surfaces of permanent landforms constructed with durable, NAF waste rock such that erosion losses are minimised • Pit lake rebound water levels and quality are trending as per models
13	Groundwater – Pit Void	C7-A Pit lakes will not have a detrimental impact on sensitive receptors or other water resources	Long-term pit lake conditions leads to groundwater level or water quality changes resulting in impact to a sensitive receptor or groundwater beneficial use	• Operational and post-closure Pit lake and groundwater monitoring verify predictive model outcomes that the pit void will not migrate towards a sensitive receptor

				• PAF waste rock materials (excluding some PAF on the pit wall above the final water level) have been encapsulated to minimise the potential for post-closure pollution as per the AMD Strategy and Management Plan • Landforms are located within the pit void groundwater drawdown area so that any migration of elevated solutes will be localised to the pit void • Perimeter monitoring confirms no outward flow from pit lake into ground water
14	Physical and Geotechnical Stability - WRL	C1 - Constructed landforms are physically and geotechnically stable, have minimal erosion and support native revegetation and/or the post-mining land uses	Changing geotechnical slope conditions or adverse environmental events lead to waste rock landform slope failure resulting in down-gradient impacts to cultural heritage or environmental values	• Final landform executed with appropriate Factor of Safety • Appropriate erosion resistant materials have been utilised in the landform cover. • PAF material contained and has appropriate cover systems installed. • Erosion of outer surfaces will occur in extreme weather events, but at rates broadly consistent with the local environment.
15	Physical and Geotechnical Stability - TSF	C1 - Constructed landforms are physically and geotechnically stable, have minimal erosion and support native revegetation and/or the post-mining land uses	Changing geotechnical slope conditions or adverse environmental events lead to TSF embankment failure resulting in down-gradient impacts to cultural heritage or environmental values	• Final landform meets requirements of the Rio Tinto Group Standard - D5 Management of tailings and water storage facilities and the Global Industry Standard for Tailings Management (GISTM) • Construction of final embankments meets FoS requirements under static and seismic load • Spillways will be designed to manage 72-hour PMP rainfall events, detention bunds to attenuate flow rates

				• Detention bunds with rockfill through-flow zones have been designed and constructed with appropriate materials to manage closure surface water flows from rainfall
16	Physical and Geotechnical safety – TSF and WRL	C1 - Constructed landforms are physically and geotechnically stable, have minimal erosion and support native revegetation and/or the post-mining land uses	Excessive erosion from the final landform leads to loss of growth media and generation of sediment resulting in failure of revegetation and down-gradient impacts to cultural heritage or environmental values	• Construction of final landforms with stable slope parameters derived from the site specific climate and waste rock units in the surface of the WRL/TSF • Berms designed to contain an average annual erosion rate and peak rainfall events • Design informed by landform evolution modelling to predict areas of excessive erosion and sedimentation • Construction of integrated crest bunds sized to contain a rare rainfall event and considering the local and upstream catchment area
17	Landscape	C3 Constructed landforms are designed with consideration of visual amenity, cultural values and local topography	Final integrated landform design (combined WRL and TSF) does not consider the local physiography of the natural landscape resulting in visual amenity impacts	• Constructed landforms aligned with visual amenity agreements with stakeholders
18	Flora and Vegetation – all domains excluding HST	C9 Rehabilitated land is consistent with agreed reference vegetation communities and/or with the post-mining land use C10 Rehabilitated land provides habitat for native fauna, indicative of the target ecosystem and/or post-mining land use C11 A - Rehabilitated land has function and resilience indicative of the target ecosystem and/or post-mining land use	Revegetation fails due to insufficient or poor quality growth medium resulting in an inability to meet biological closure outcomes	• Soil balance and inventory maintained through mine life, including supplementary materials if required • Rehabilitation plans include specific topsoil requirements prior to use (weed checks, physical and chemical attributes, ameliorants if required) • Temporary wind erosion preventative measures employed, until the landforms stabilize • Fauna habitats will be constructed where safe and sustainable to do so

19	Flora and vegetation	C9 Rehabilitated land is consistent with agreed reference vegetation communities and/or with the post-mining land use C10 Rehabilitated land provides habitat for native fauna, indicative of the target ecosystem and/or post-mining land use C11 A - Rehabilitated land has function and resilience indicative of the target ecosystem and/or post-mining land use	Revegetation fails due to inadequate weed management practices during operations and closure execution resulting in an inability to meet biological closure outcomes	• Native vegetation is not impeded by weed species
20	Ecosystem function	C9 Rehabilitated land is consistent with agreed reference vegetation communities and/or with the post-mining land use C10 Rehabilitated land provides habitat for native fauna, indicative of the target ecosystem and/or post-mining land use C11 A - Rehabilitated land has function and resilience indicative of the target ecosystem and/or post-mining land use	Rehabilitation techniques are not sufficient to meet the required completion criteria and associated biological closure outcomes	• Appropriate target ecosystems and post-mining land use defined • Completion criteria developed to reflect the defined function and resilience of the chosen target ecosystem.

8. CLOSURE IMPLEMENTATION

This section discusses the key closure considerations for each domain, outcomes from relevant technical studies and how closure will be implemented through construction, operations and into closure execution.

8.1. Closure domains

Closure domains group common features which have similar decommissioning and rehabilitation requirements. Detailed closure strategies for the decommissioning and rehabilitation of individual closure domains will be documented in the MCP with increasing detail as the site approaches closure. The closure work programmes identified in Section 8.2 consider the methods used to manage key risks as discussed in Section 6.

The features grouped into each closure domain are presented in Table 8-1 and indicative locations provided in Figure 8-1.

Table 8-1: Closure domains and related features

Domains	Features
Pit	Below water table pit void. No backfill – pit lake will develop and equilibrate at 90m AHD. Closure safety bund constructed outside of Zone of Instability, with erosion resistant materials, unvegetated.
Waste Rock Landform	Ex-pit waste rock landform, maximum height of 80m, final slope angles <15 degrees. Contains PAF and high erodibility materials, fully encapsulated with erosion resistant NAF rock. Includes surface water management features. Top and outer slopes vegetated.
External TSF – HST Cells	2 x HST cells with basal liners, integrated within WRL. Tension saturated cover system to be installed at closure. Un-vegetated.
External TSF – LST Cells	2 x LST cells with basal liners. Upstream construction method. External slopes with erosion resistant NAF rock, surface water management features and top and outer slopes vegetated.
Processing infrastructure	Plant area and crushers, conveyors, process water pond, plant workshop, assay laboratory, core yard, bulk fuel storage, warehouse, hazardous materials storage, batch plant
Non-processing infrastructure	Airstrip, Solar PV Farm, Windfarm, BESS, communications infrastructure, pump stations, wash downs, ANFO facilities, water treatment facilities, workshops, laboratories, buildings, Winu Village, fuel facilities
Linear infrastructure	Powerlines, pipelines (water), communications cables
Water infrastructure	Production and monitoring bores, transfer dams, turkeys nests and water transfer tanks
Roads and other disturbance	Access road, haul roads, roads, tracks, borrow pits, laydowns, topsoil and subsoil stockpile footprints
Landfills	Putrescible landfill facilities for operational context – will be revised for closure execution requirements

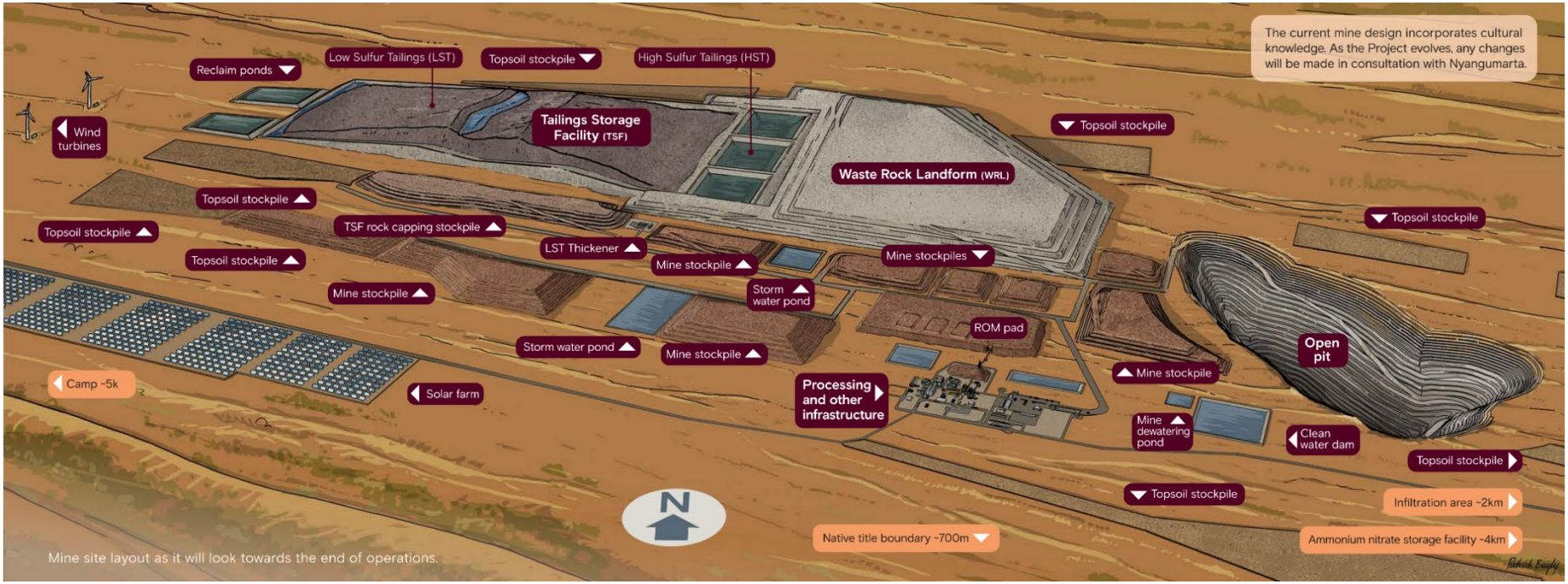


Figure 8-1: Winu closure domains

8.1.1. Pit Void

The following identified closure risks (Section 6.3) are applicable to the pit void domain:

- Closure execution results in unintended impact to cultural heritage places or values, or post-closure access restriction for the Nyangumarta People
- Regulatory requirements and/or technical constraints limit adoption of stakeholder feedback resulting in closure execution that does not meet stakeholder expectations
- Closure execution retains public safety hazards resulting in unsafe areas post-closure requiring long-term management
- Open holes or water storage areas remaining following closure execution leads to fauna entrapment resulting in fatality
- Contaminating activities during operations leads to land, surface and groundwater contamination requiring remediation at closure
- Mining activities alter the hydrological regime resulting in direct impacts to sensitive receptors within and down-gradient of the mine.
- Operational waste management and decommissioning activities leads to loss of containment into surrounding undisturbed areas which reduces environmental and cultural values
- Regional groundwater levels do not recover to pre-mining levels and require ongoing management to prevent impacts to sensitive receptors
- Changing geotechnical slope conditions or adverse environmental events leads to instability of the pit crest beyond the predicted zone resulting in impacts to the surrounding landscape
- Exposure of potentially acid forming rock leads to acidic or metalliferous drainage resulting in land or water contamination
- Surface water drainage into pit voids leads to filling and uncontrolled overflow, or ponding against permanent landforms resulting in scour and down-gradient sedimentation impacts to cultural heritage or environmental values
- Long-term pit lake conditions leads to groundwater level or water quality changes resulting in impact to a sensitive receptor or groundwater beneficial use
- Revegetation fails due to insufficient or poor quality growth medium resulting in an inability to meet biological closure outcomes
- Revegetation fails due to inadequate weed management practices during operations and closure execution resulting in an inability to meet biological closure outcomes.

Post mining, dewatering pumps will be decommissioned and removed; allowing the water levels to recover (N.B. expected to reach equilibrium below pre mining ground water levels). Water will source from two areas:

- Direct rainfall into the pit void, including runoff from the pit walls
- Groundwater infiltration from the surrounding rock aquifers into the pit void.

Despite this, the amount of evaporation (typically 3,500 mm per year in this region) will exceed the total contributions of water contributions from rainfall and groundwater recharge.

Modelling showed that the Winu pit lake water elevation reaches equilibrium after approximately ca. 90 years at ca. 90 m AHD. Although there may be some seasonal and annual variation in this level, the long-term median water level for both without and with addition of TSF seepage as pit inflow, predict pit lake elevation at <100 m AHD. That is, around 100 m lower than the pre-mining groundwater elevation (190–200 m AHD), indicating that the pit lake will likely form a terminal hydraulic sink in perpetuity sensu (McCullough, Marchand, & Jörg, 2013), where pit lake water evaporation rates exceed inflow rates in all cases.

A study by HydroGeoLogica (HydroGeoLogica, 2024) determined that the water balance for the Base Case scenario predicts that a pit lake will form and will fill to a near steady-state elevation of approximately 90 m AHD (110 Mm3) after approximately 90 years. Between 100–200 years post-closure, predicted seepage rates from the TSF decrease from a peak flow rate of 3,100 m3/day to a near-constant rate of 1,300 m3/day resulting a slight decrease in the pit lake elevation (from 91 to 85 m AHD) by the end of the 300-year modelling period. The predicted filling curve is presented in Figure 8-2 (HydroGeoLogica, 2024), together with associated inflow and outflow components.

Figure 8-2 incorporates the preliminary pit lake filling curve for the water balance developed by Advisian (Advisian, 2022) for comparison purposes. The long-term pit lake elevation for the current Base Case model is approximately 20 m higher than the preliminary prediction by Advisian. Both models predict an ultimate pit lake elevation of less than 100 m AHD. The most significant difference between the two models is the addition of TSF seepage as a pit inflow in the current model, as well as updates to the catchment runoff area calculated from the newly delineated closure safety bund. These flows are not included in the Advisian water balance.

This indicates that the pit lake will likely form a terminal hydraulic sink in perpetuity, where pit lake water evaporation rates exceed inflow rates in all cases.

Figure 8-3 illustrates the Base Case predicted pit lake filling curve and associated final pit lake area, elevation, and volume in the context of the pit shell. The figure illustrates that the ultimate pit lake elevation is likely to be at least 100 m below the pre-mining groundwater elevation (190–200 m AHD), indicating that the pit lake will likely always form a strong hydraulic sink. The ultimate pit lake is predicted to be just under 300 m deep.

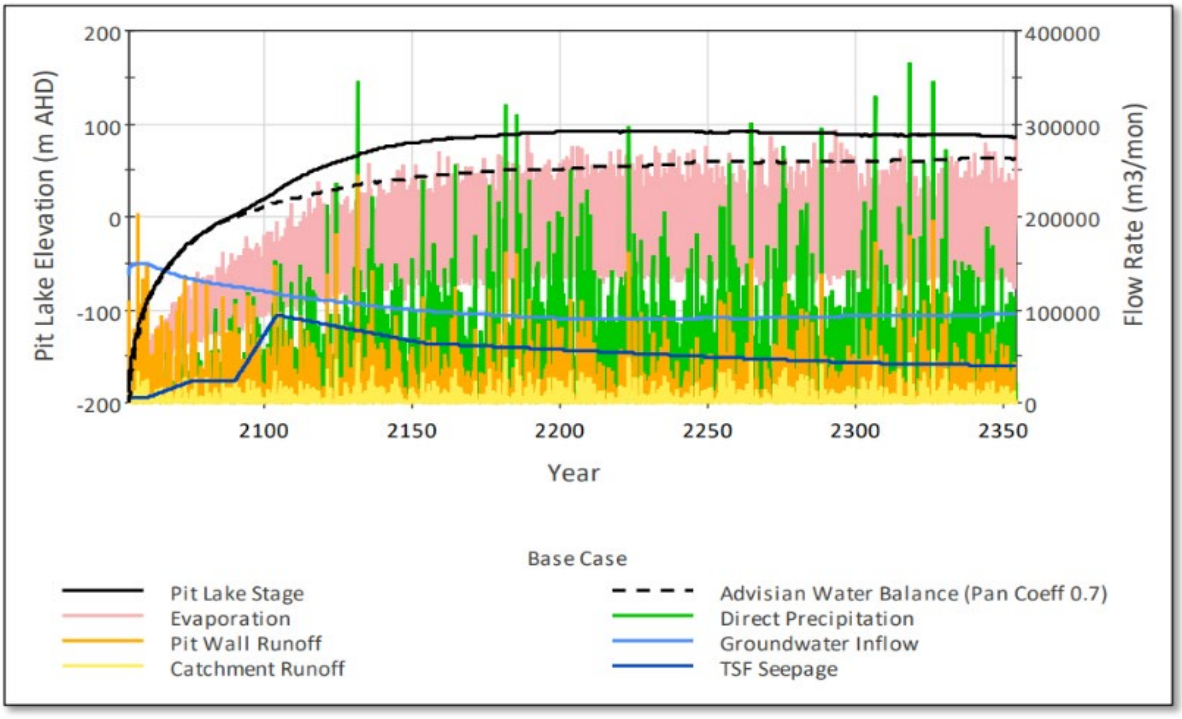


Figure 8-2: Predicted Pit Lake Filling and Flow Rates (Base Case scenario)

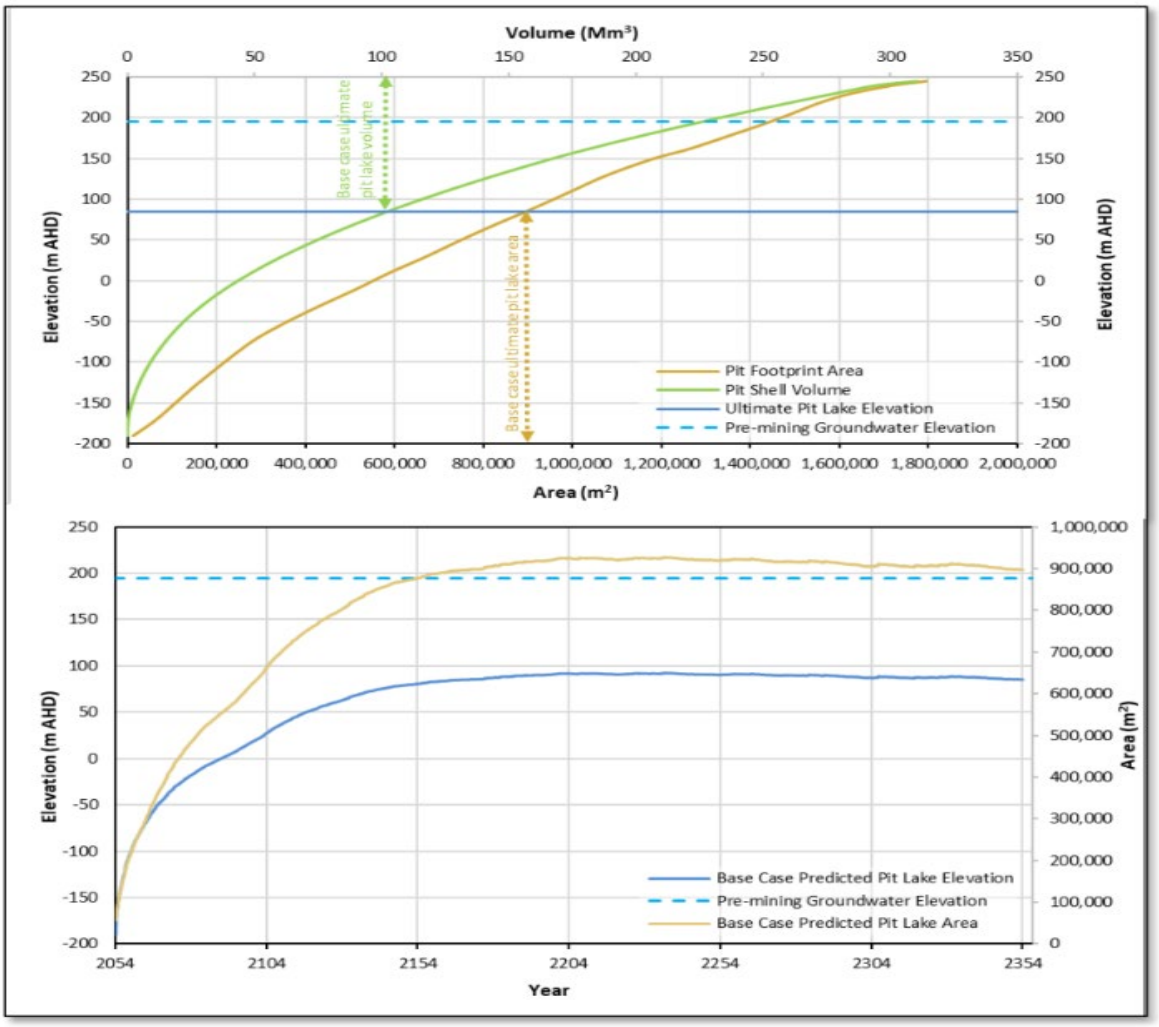


Figure 8-3: Base Case Pit Lake Filling Results, in Pit Shell Context

The development of the pit lake as a "terminal sink," means that concentrations of salts and metals may continue to increase over time (as evaporation exceeds water inputs); and water (and associated solutes) within the pit void are not expected to migrate beyond the pit void.

8.1.1.1. Management measures

Figure 8-4 shows the predicted surface area by lithology that may be present in the pit walls at closure, including the approximate level that will be submerged by the pit lake.

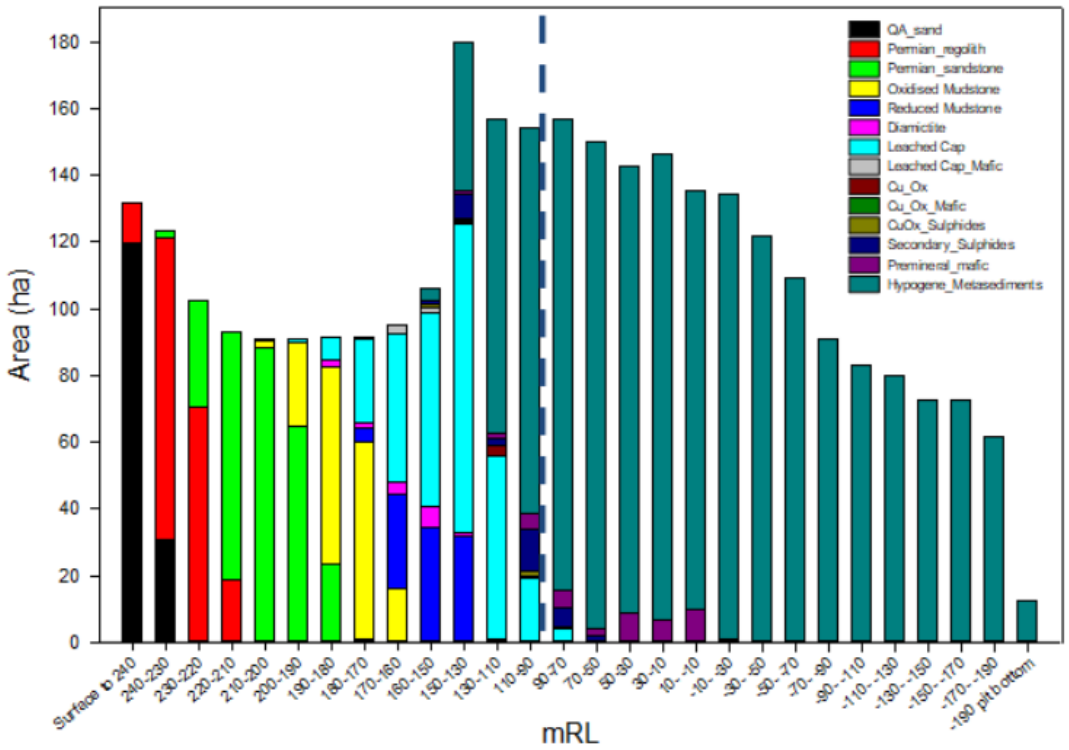


Figure 8-4: Total Area of Lithology Exposed in Walls Relative to Pit Depth

As the pit lake forms relatively quickly and submerges nearly all expected exposures of AMD, the water quality of the pit lake is not expected to rapidly deteriorate over time. Additionally, as a pit lake is expected to be a terminal sink, the impact of poor water quality over time would be localised and limited to the pit void.

Figure 8-5 (HydroGeoLogica, 2024) shows the predicted pH, alkalinity and total dissolved solids (TDS) of the Winu pit lake over the first 300 years post closure.

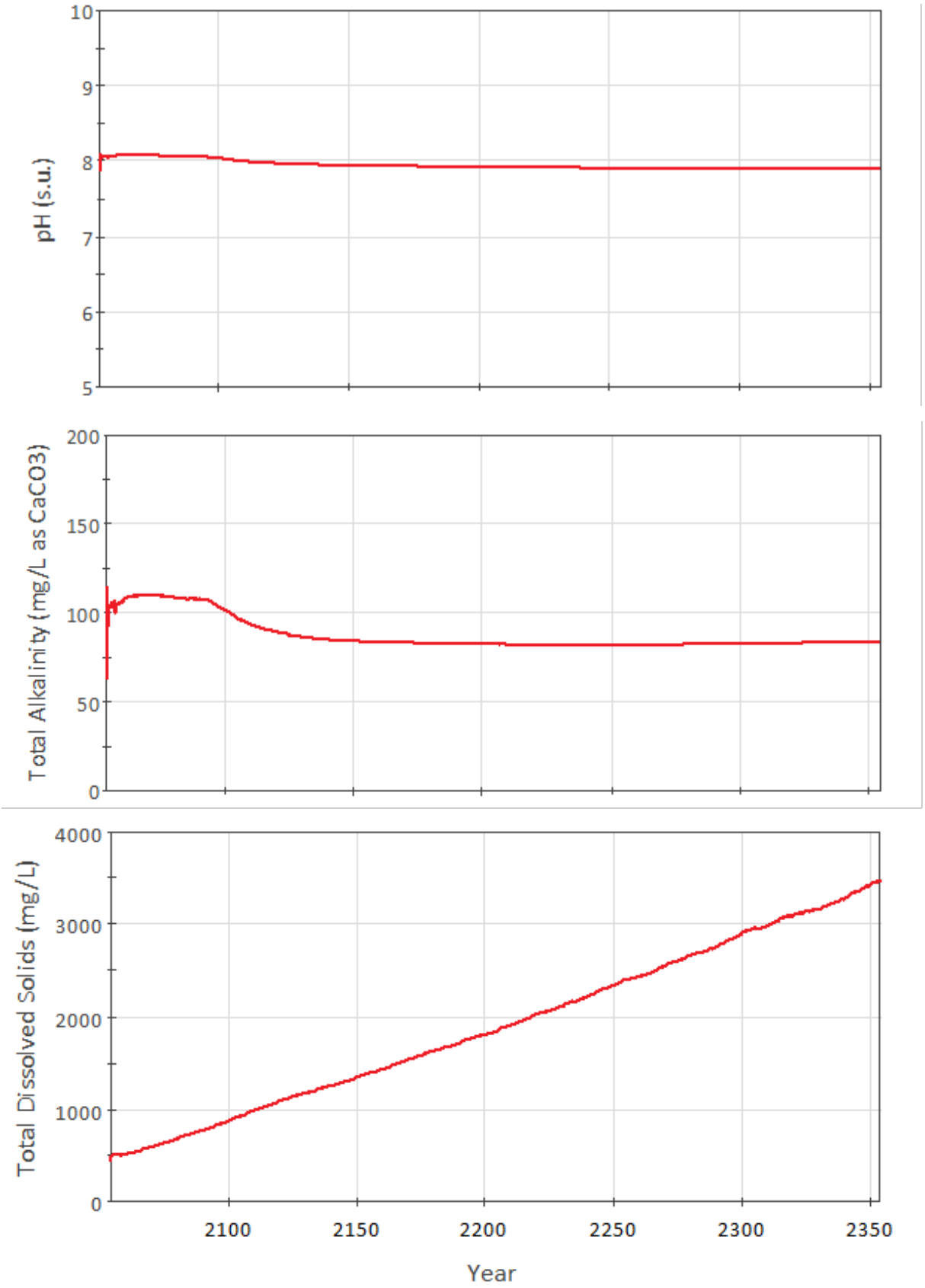


Figure 8-5: Predicted pH, Alkalinity and Total Dissolved Solids Winu Pit Lake Over 300 Years Post Closure

A risk assessment of the impacts of pit lake water quality on fauna (and particularly avifauna) was undertaken by Mine Lake Consulting (Mine Lake Consulting (MLC), 2021; Mine Lake Consulting (MLC), 2025). The mean base case pit lake water quality is predicted to exceed the thresholds for some stock

and aquatic system criteria, with the gradual increase in constituents through time due to evapoconcentration. Guidelines for aquatic systems have been developed for systems where fauna may have a lengthy temporal presence that extends over their respective life cycles. In the case of the Winu pit lake, any species that do visit the pit lake will be temporary visitors only, as a supportive ecosystem (roosting, breeding habitat, food sources) will not have developed. The MLC report describes in detail how the consideration of exposure in the risk assessment, results in the overall risk to fauna as being low (Mine Lake Consulting (MLC), 2025).

The lake is steep-sided and deep, with no littoral zone and no rehabilitated catchment. This means terrestrial animals are unlikely to access or contact lake water, and hence no soil contamination vectors (e.g., trampling, tracking, or deposition) exist. Since all potential contaminant sources (PAF walls, TSF seepage) report inward to the lake and remain contained within it, no mechanism exists for contaminants of potential concern to reach terrestrial soils. The ecological risk assessment therefore identifies no TEQ receptors and no plausible exposure pathway.

Whilst it is possible that an alternative post mine land use for the water in the pit lake may be identified by Traditional Owners during the life of operations, the final void design will not provide access to the pit lake.

To mitigate the potential risk from Zone of Instability impacts, closure safety bunds will be installed around the pit void in line with Safety Bund Walls Around Abandoned Open Pit Mines - Guideline (Department of Industry and Resources, 1997), along with removal of the upper section of the pit ramp. This is discussed in detail in Section 6.4.9.

The TUFLOW assessment has identified that due to the unique topographic landforms at the Winu project, that bund heights for surface water control are significant (approx. 14m high), when assuming a closure basis of design standard of the PMF event. Assessment of lower magnitude (extreme to very rare) events such as the 1:5000 AEP and 1:1000 AEP predict a significant reduction in bund height design (approximately 3 m and 2 m respectively in height at the highest locations [assuming no freeboard allowance]).

The closure safety bunds have been provisionally designed at 3 m height to comply with the DMPE closure safety bund guidance (to limit access), and align with expectations of Nyangumarta People. The bunds will be constructed with competent material that will allow water to drain through but at an attenuated velocity.

Additional work that may be required over the life of mine to confirm the pit lake closure management approach include:

- Ongoing engagement on potential PMLUs for the pit lake, post relinquishment, and development of associated criteria
- Additional modelling for water quality, pit stratification
- Wildlife mine water usage studies
- Updated water balance and water quality modelling
- Updated pit lake risk assessment as the knowledge base matures.

8.1.2. WRL and Stockpiles (Includes, Low Grade and Growth Media Stockpiles)

The following identified closure risks (Section 6.3 and Section 6.4.13) are applicable to the waste rock landform and stockpiles domain:

- Closure execution results in unintended impact to cultural heritage places or values, or post-closure access restriction for the Nyangumarta People
- Regulatory requirements and/or technical constraints limit adoption of stakeholder feedback resulting in closure execution that does not meet stakeholder expectations

- Closure execution retains public safety hazards resulting in unsafe areas post-closure requiring long-term management
- Open holes or water storage areas remaining following closure execution leads to fauna entrapment resulting in fatality
- Contaminating activities during operations leads to land, surface and groundwater contamination requiring remediation at closure
- Mining activities alter the hydrological regime resulting in direct impacts to sensitive receptors within and down-gradient of the mine
- Operational waste management and decommissioning activities leads to loss of containment into surrounding undisturbed areas which reduces environmental and cultural values
- Regional groundwater levels do not recover to pre-mining levels and require ongoing management to prevent impacts to sensitive receptors
- Exposure of potentially acid forming rock leads to acidic or metalliferous drainage resulting in land or water contamination
- Surface water drainage into pit voids leads to filling and uncontrolled overflow, or ponding against permanent landforms resulting in scour and down-gradient sedimentation impacts to cultural heritage or environmental values
- Changing geotechnical slope conditions or adverse environmental events lead to waste rock landform slope failure resulting in down-gradient impacts to cultural heritage or environmental values
- Excessive erosion from the final landform leads to loss of growth media and generation of sediment resulting in failure of revegetation and down-gradient impacts to cultural heritage or environmental values
- Final integrated landform design (combined WRL and TSF) does not consider the local physiography of the natural landscape resulting in visual amenity impacts
- Revegetation fails due to insufficient or poor quality growth medium resulting in an inability to meet biological closure outcomes
- Revegetation fails due to inadequate weed management practices during operations and closure execution resulting in an inability to meet biological closure outcomes
- Rehabilitation techniques are not sufficient to meet the required completion criteria and associated biological closure outcomes.

Prior to the commencement of activities, topsoil will be recovered from disturbance footprint areas and stockpiled in a manner that will promote the viability of this important rehabilitation resource. Opportunities for early rehabilitation will be identified but will be limited to redundant disturbed areas from the construction phase. There will be limited progressive rehabilitation opportunities for the operational footprint. However, as early opportunities are identified they will be prioritised for rehabilitation trials, including those that will determine the most efficient topsoil storage method for Winu.

During construction and initial stages of mining, suitable inert waste rock will be used to construct:

- Ore stockpile pads
- TSF and WRL foundations
- TSF and WRL cell walls and outer walls (described further in Section 6.4.14.1)
- Foundations for processing, non-processing infrastructure and roads.

Procedures for the identification, classification and tracking use of waste rock will be prepared and implemented for both problematic and beneficial waste characteristics, e.g. Winu AMD S&MP (Rio Tinto, 2025).

During operations, the WRL will be constructed with the following key attributes:

- A basal clay layer to minimise seepage from the WRL into the underlying groundwater table
- Competent NAF waste will form the outer layers of the WRL to contain PAF material and potential AMD runoff
- Tip heights will be limited to 20 m vertical height. This creates traffic compacted layers within the WRL to minimise seepage and oxygen movement through the WRL
- Any PAF waste and erodible waste will be located within PAF cells within the WRL, fully contained by NAF waste (Figure 8-8)
- The WRL will be limited to four 20 m high lifts
- Prior to closure, basal clay material from the ore and low-grade stockpiles will be recovered and stored as PAF in the WRL.

Ultimately the WRL will reach a height of approximately 80 m above ground level (four 20 m high lifts), approximately 2 km wide (east/west) and 2 km long (north/south). A key element of the WRL is that the HST cell (refer Section 6.4.14.1 will be encapsulated by the western outer wall of the WRL, as well as WRL extensions to the north and south of the HST cell, creating a stable integrated WRL/TSF landform. Figure 8-6 and Figure 8-7 shows the WRL design and a conceptual construction sequence, showing the encapsulation of PAF and erodible materials.

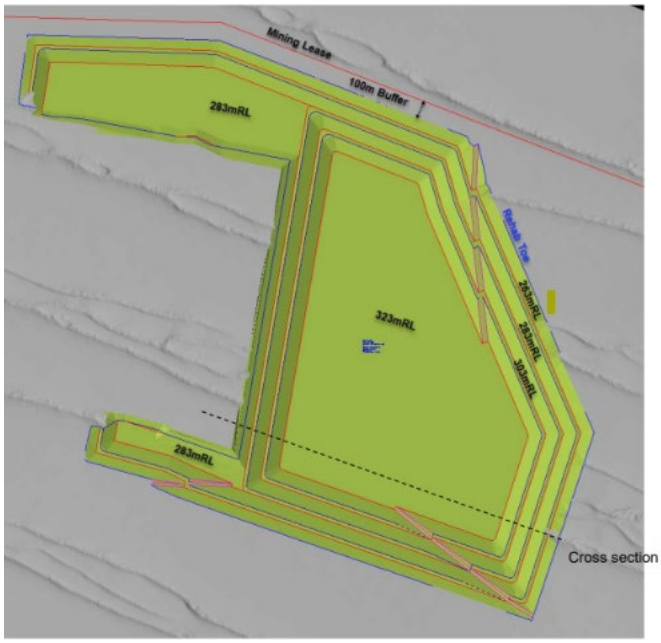
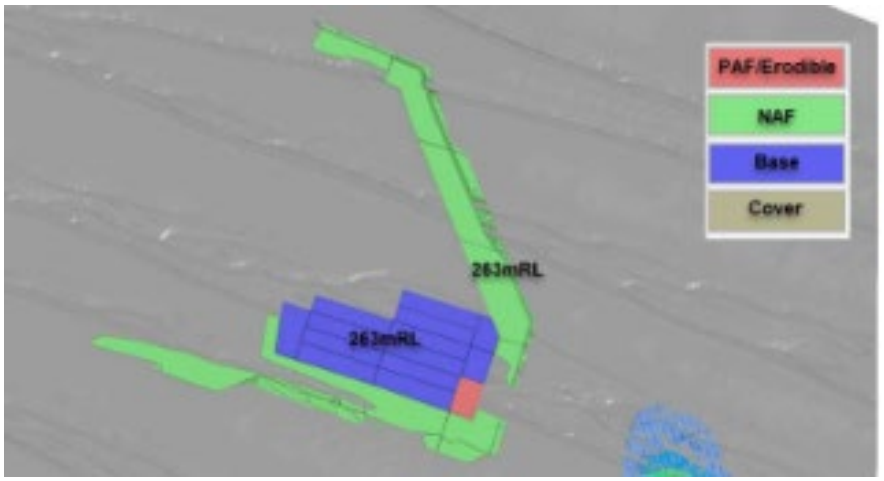
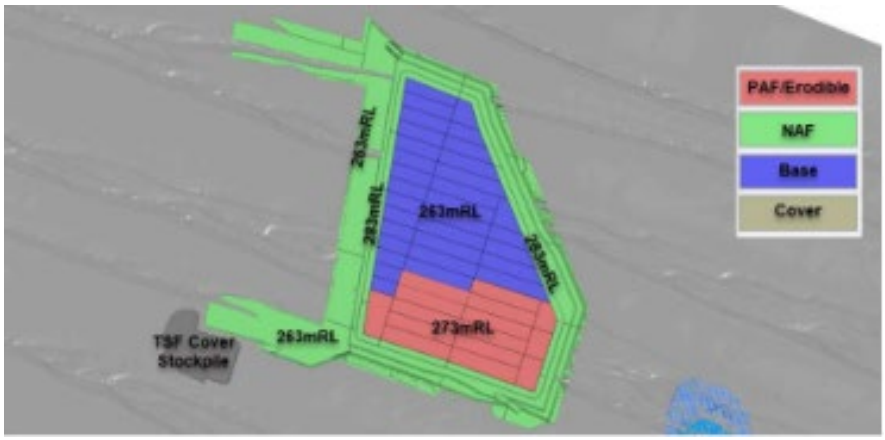


Figure 8-6: Waste Rock Landform Conceptual Operational Design


PAF/Erodible
NAF
Base
Cover
263mRL
263mRL


PAF/Erodible
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263mRL
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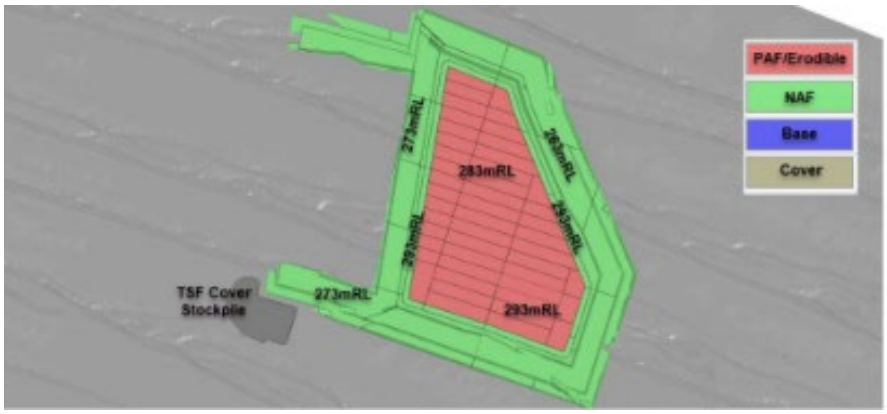
263mRL
273mRL
TSF Cover Stockpile


PAF/Erodible
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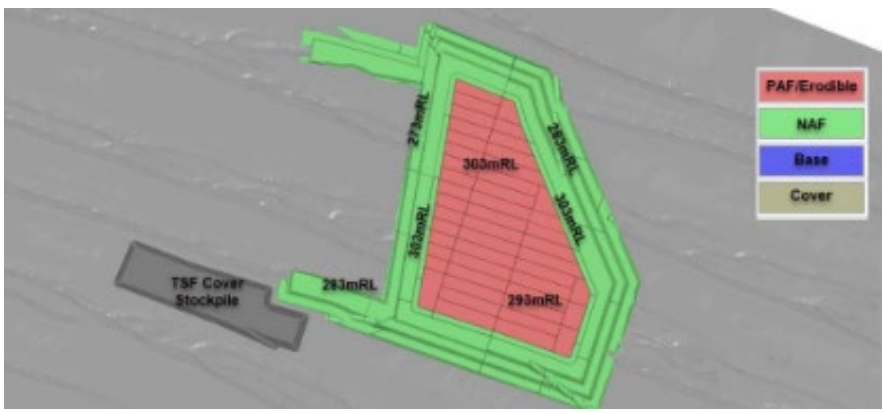
TSF Cover Stockpile


PAF/Erodible
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293mRL
293mRL
TSF Cover Stockpile

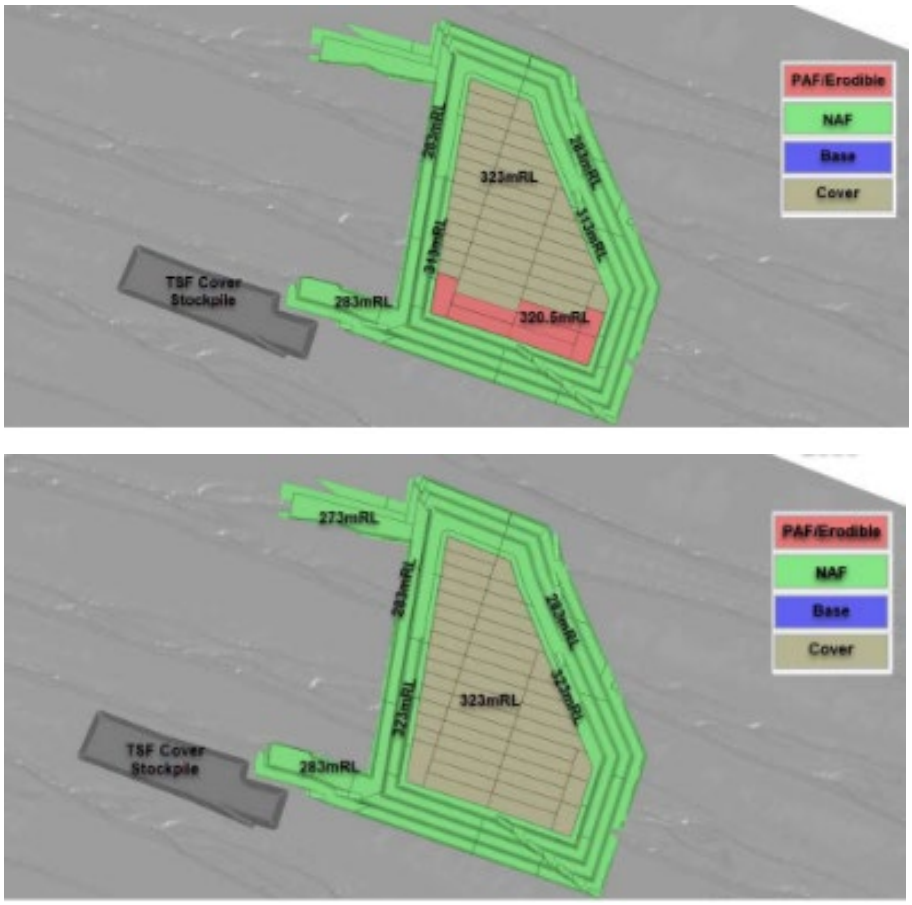


Figure 8-7: Conceptual Progression of WRL Dumping Sequence

8.1.2.1. Management Measures

Conceptual landform erosion modelling (Landloch, 2020) and WRL cover design (O'Kane Consultants, 2020) was completed to inform WRL closure design to maximise WRL landform stability, minimise erosion and seepage and maximise rehabilitation success. The conceptual closure design for the outer slopes of the WRL is depicted in Figure 8-8. This design has been informed by:

- Landform erosion modelling (Landloch, 2020) recommending the most suitable competent, inert waste rock for emplacement on the design outer slope during operations
- 20-metre-wide back sloping berms guided by Landloch, DMPE (Department of Mines, Industry Regulation and Safety (DMIRS), 2021) and feedback from experience of rehabilitation of waste rock landforms in the Northern Pilbara
- 15-degree batter face angle for the 20-metre-high lifts, guided by Landloch and feedback from experience of rehabilitation at Telfer (EarthSystems, pers comms 2023).

Figure 8-8 depicts the planned modifications to the outer operational profile for the WRL to promote stability, minimise surface erosion and promote vegetation growth.

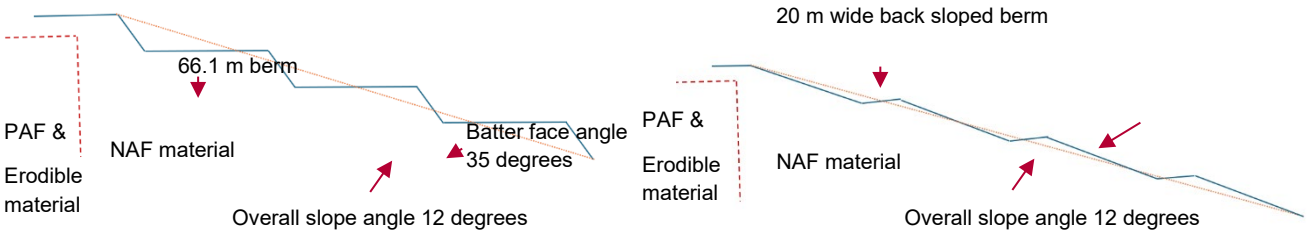


Figure 8-8: Profile of the WRL Outer Wall During Operations and at Closure.

Outer landform slopes and berms will be topsoiled, deep ripped and vegetated with a native, appropriate provenance seed mix. Perimeter bunding will be installed to minimise the movement of water from flooding events. Soil stabilisation treatments may be required until vegetation has established. Compliance to plan, reconciliation and survey control processes will be imperative to achieve final landforms that perform as predicted.

During operations and once waste material types are exposed and re-tested, landform erosion modelling and site-specific rehabilitation trials will be undertaken to confirm closure design parameters.

The top surface of the WRL will be rehabilitated with a store and release cover as per the concept design in Figure 8-9 (O'Kane Consultants, 2020). Suitable waste rock for the cover has been identified within the Winu resource model; life of mine planning has scheduled this material for temporary stockpiling during mining so there is confidence that there will be sufficient material to build the cover at closure.

Conceptual modelling indicates that a cover thickness of 2.5 m will prevent approximately 95% of the incident rainfall onto the cover from migrating through the cover before being removed by evaporation. Cover thickness of 3 m and 4 m were modelled and demonstrated that no additional benefit is derived from emplacing a thicker cover (O'Kane Consultants, 2020).

The cover design will continue to be evaluated during the life of mine as identified waste material is mined and can be tested to confirm suitability.

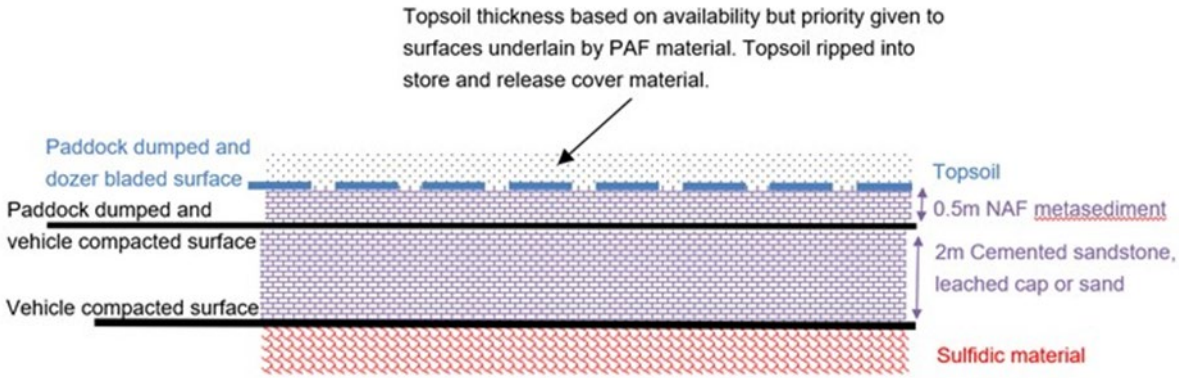


Figure 8-9: Conceptual Store and Release Cover Design.

Once the store and release covers are installed, topsoil or growth media (nominally 200 mm thick) will be placed on the cover, ripped, and seeded with local native species. Allowance for fauna habitats will be incorporated into final landform designs. Bunding will be installed at crests to minimise the potential for water to flow from the top surface of the WRL during flood events.

Refer to Section 8.1.3.4 for detail on the consideration of surface water and flood events with respect to permanent landforms (WRL, TSF and pit void).

Any ore/low grade stockpiles and ROM pads remaining after processing has been decommissioned will be treated as PAF material and relocated to the WRL for encapsulation prior to final closure of the WRL.

Post-closure, a monitoring regime will be established to determine the effectiveness of executed closure activities in meeting the agreed completion criteria and enable relinquishment to proceed.

8.1.3. TSF

The following identified closure risks (Section 6.3) are applicable to the TSF domain:

- Closure execution results in unintended impact to cultural heritage places or values, or post-closure access restriction for the Nyangumarta People
- Regulatory requirements and/or technical constraints limit adoption of stakeholder feedback resulting in closure execution that does not meet stakeholder expectations
- Closure execution retains public safety hazards resulting in unsafe areas post-closure requiring long-term management
- Open holes or water storage areas remaining following closure execution leads to fauna entrapment resulting in fatality
- Contaminating activities during operations leads to land, surface and groundwater contamination requiring remediation at closure
- Mining activities alter the hydrological regime resulting in direct impacts to sensitive receptors within and down-gradient of the mine
- Operational waste management and decommissioning activities leads to loss of containment into surrounding undisturbed areas which reduces environmental and cultural values
- Regional groundwater levels do not recover to pre-mining levels and require ongoing management to prevent impacts to sensitive receptors
- Management of potentially acid forming tailings streams leads to acidic or metalliferous drainage resulting in land or water contamination
- Surface water drainage into pit voids leads to filling and uncontrolled overflow, or ponding against permanent landforms resulting in scour and down-gradient sedimentation impacts to cultural heritage or environmental values
- Changing geotechnical slope conditions or adverse environmental events lead to TSF embankment failure resulting in down-gradient impacts to cultural heritage or environmental values
- Excessive erosion from the final landform leads to loss of growth media and generation of sediment resulting in failure of revegetation and down-gradient impacts to cultural heritage or environmental values
- Final integrated landform design (combined WRL and TSF) does not consider the local physiography of the natural landscape resulting in visual amenity impacts
- Revegetation fails due to insufficient or poor quality growth medium resulting in an inability to meet biological closure outcomes (excluding HST)
- Revegetation fails due to inadequate weed management practices during operations and closure execution resulting in an inability to meet biological closure outcomes
- Rehabilitation techniques are not sufficient to meet the required completion criteria and associated biological closure outcomes.

The Winu TSF has been designed to safely contain mining waste from copper and gold processing operations. The facility consists of four cells: two designated for LST, approximately 91-95% of tailings, and two for HST, approximately 5-9% of tailings. The TSF has a total capacity of approximately 283 Mt, split between two tailings products.

- LST: Approximately 94% of total tailings, deposited as slurry, thickened using high-rate thickeners before deposition
- HST: Approximately 6% of total tailings, deposited sub-aqueously as a low-density slurry (to avoid oxidation and acid formation).

Figure 8-10 demonstrates the operating design for the HST, which includes a basal LLDPE/bituminous layer and a wet cover for the HST cells.

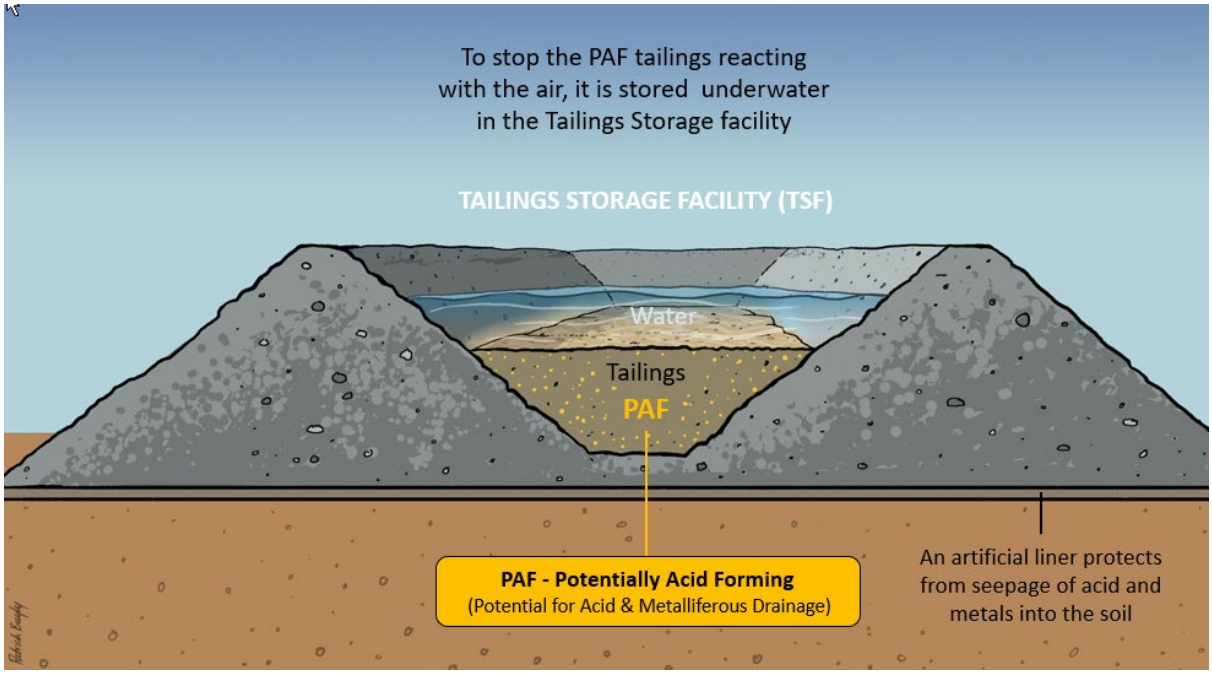


Figure 8-10: Conceptual Operating Design for the High Sulfur Tails Contained within the TSF

Two classes of tails will be generated and separately stored, Low Sulfur Tailings (LST) and High Sulfur Tailings (HST). HST will be stored in a dedicated cells in the eastern part of the facility. The HST cell lateral dimensions will remain static during the TSF life, encapsulated to the north, south and east by the WRL and west by the LST.

The northern and southern TSF outer walls will progressively rise during the operating life of TSF. Constructed embankment walls will be approximately 1:3 gradient. To further promote stability and minimise TSF outer wall erosion, a rock armour external wall will be progressively constructed. This external TSF wall will be at a constant gradient of approximately 1:6 (i.e., 100).

Figure 8-11 shows a typical internal embankment cross section of HST cells during operations.

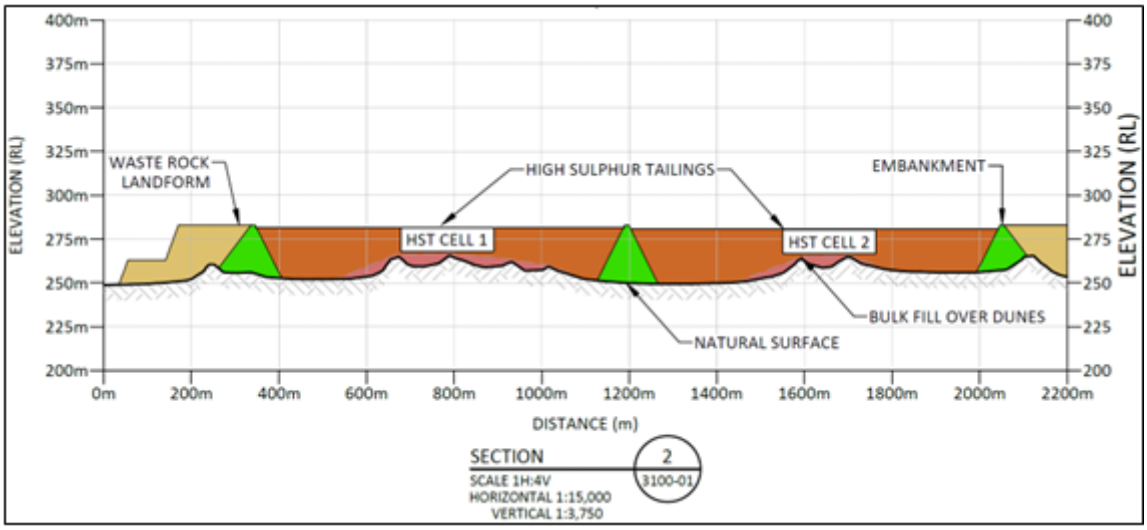


Figure 8-11: Internal Embankment Cross Section of Typical HST Cell During Operations

Figure 8-12 shows a conceptual section through the LST cell at the end of operations prior to closure cover construction. The waste rock slope cover is indicated in yellow and details will be confirmed in the field during construction. Drainage to the environment is implemented only at closure. During operations all water is contained within the TSF complex.

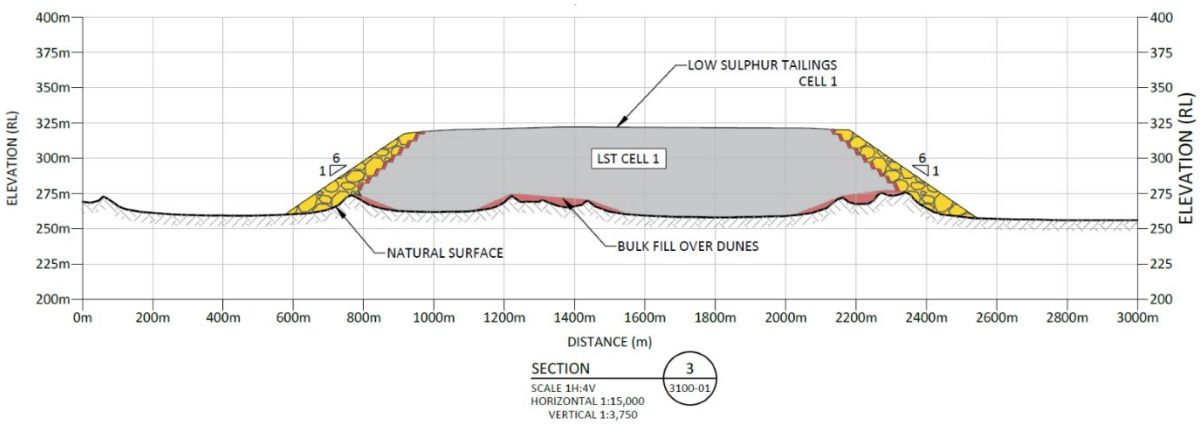


Figure 8-12: Cross Section of Conceptual LST Cell at the end of Operations Prior to Closure Cover Construction

Operation of the TSF will be in line with a TSF Management Plan, which will be developed and refined during subsequent stages of the Winu project development to ensure that the facility is built within the design parameters of the facility. The Management Plan will include verification of compliance to design processes.

The conceptual closure plan for the TSF follows relevant regulatory, industry and internal Rio Tinto guidelines. The following TSF classifications have been used to define the geotechnical and hydrotechnical design for closure:

- DMPE classification: Category 1 (high hazard) (DMP, 2015).
- ANCOLD classification: High C (ANCOLD, 2022).
- Rio Tinto D5 standard (Management of tailings and water storage facilities): Major (Rio Tinto, 2017).
- GISTM: High (ICMM; UN Environment Programme; PRI, 2020).

The closure objectives for the TSF are to:

- Minimise dust generation from the tailings surface
- Prevent acid generation from the oxidation of sulfides
- Protect surface and groundwater from contamination
- Ensure embankment stability and minimise erosion risks
- Reduce long-term maintenance requirements
- Obtain approval from regulators
- Revegetated where technically appropriate.

8.1.3.1. Closure Design and Construction

A GISTM requirement is the development of a TSF Closure Plan. WWL have developed a conceptual closure plan for the TSF (WWL, 2025a) and is attached as Appendix G. It contains detail on the basis of design for closure and supporting technical assessments. This plan will be updated and provided in subsequent versions of this Mine Closure Plan.

Some Closure measures have been tailored to the specific characteristics of LST and HST due to their acid generating potential and management requirements, these are summarised below:

8.1.3.2. Low Sulfur Tailings (LST) Closure Measures

The LST cells have been designed as water shedding landforms, with appropriately designed long term storm water runoff management measures, that include:

- Final Top Cover System 0.5 m of metasediments (hard, non-acid forming rock) to minimise erosion and up to 0.2 m of topsoil (that has been stored during mining operations) ripped into the metasediments to encourage vegetation growth
- Spillways have been engineered to manage stormwater and prevent uncontrolled overflow

- Detention Bunds have been designed to detain runoff and reduce peak flow rates
- Embankment slopes 1(v): 3(h) against which a 1(v): 6(h) rockfill wedge is formed around the entire outer perimeter
- Drainage System has been engineered as a continuous operation to facilitate consolidation and manage infiltration water, through operations and post closure until closure criteria have been met.

Figure 8-13 shows across section through the LST downstream embankments at closure, prior to revegetation.

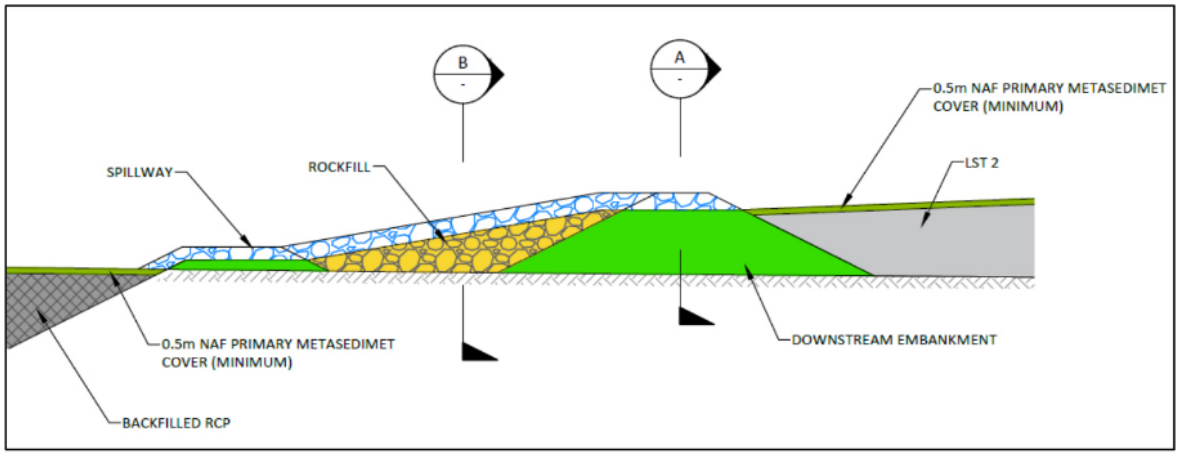


Figure 8-13: Typical section through LST Downstream Embankment Prior to Revegetation

8.1.3.3. High Sulfur Tailings (HST) Closure Measures

The closure design intent for the HST cells is to ensure that the HST will remain saturated post closure, and that runoff from extreme storm events can drain off the HST without overtopping the embankments. Specific management measures include:

Final Top Cover System: 6m of LST to maintain saturation. It is proposed that the first 2m of LST will be placed hydraulically and the balance mechanically. This approach will be trialled and modified as necessary during operations. A final 0.5m surface layer of metasediments will be placed to control surface erosion. O'Kane (O'Kane Consultants, 2024) completed numerical modelling of the HST cover system to assess the conceptual cover system design for the HST storage facility and confirmed that the proposed capping design met its performance objective of maintaining a high degree of saturation (>85%) within the HST cells. Designed saturation levels were predicted to only be breached when both a 0.3m vegetated topsoil layer was included, and extreme climate change conditions were simulated.

Accordingly, to discourage vegetation, topsoil and revegetation activities have not been included in the HST cover system design to reduce the risk of future desaturation of HST. Additional measures that will be investigated to maintain saturation include, directing runoff water on and around the high sulfur tailings cells to collect on and infiltrate into the HST; and inclusion of a hummocked terrain on the high sulfur tailings cells to increase infiltration.

Spillways have been designed to direct runoff away from the tailings cells into LST1 and out via the LST1 spillways. Spillways will be designed to manage 72-hour PMP rainfall events and include detention bunds to attenuate flow rates.

External Embankment slopes have been eliminated through the integration of the HST cells within the WRL.

Basal engineered liners have been incorporated into the design to prevent groundwater contamination. The liner will cover the entire floor of the HST Cells and extend up the inner slope faces of the confining embankments. Additionally, the liner is continuous below the divider embankments between the HST Cells as well as LST Cell 1, ensuring complete containment.

8.1.3.4. Surface Water Modelling for Final Closure Landforms

TUFLOW modelling was conducted for the PMF, 1:5000 AEP and 1:1000 AEP events (Worley, 2024a) to identify surface water management measures needed to protect final closure landforms in a range of very rare to extreme rainfall events. The model included the WRL, TSF and closure safety bunds as the only structures remaining at closure.

The TSF Closure Report (Appendix G; (WWL, 2025a)) includes detailed information on surface water management related to the TSF. Key aspects are summarised below and in Figure 8-14 through Figure 8-1717.

- Runoff from the WRL will be routed around the HST cells and discharged via the spillways
- Two spillways will service the residual beach areas in each of LST Cell 1 and LST Cell 2.

Rock-lined spillways between the HST LST cells will ensure that the probable maximum flood (PMF) can flow from the HST cells to the LST cells without being stored on the HST cells. The HST cells will only discharge to LST Cell 1 once freeboard is used up.

LST cells will have cross slope rockfill bunds constructed to slow the movement of water. The bunds will be constructed with competent material that will allow water to drain through but at an attenuated velocity. More detailed designs will be developed during Feasibility study and as part of closure execution plans.

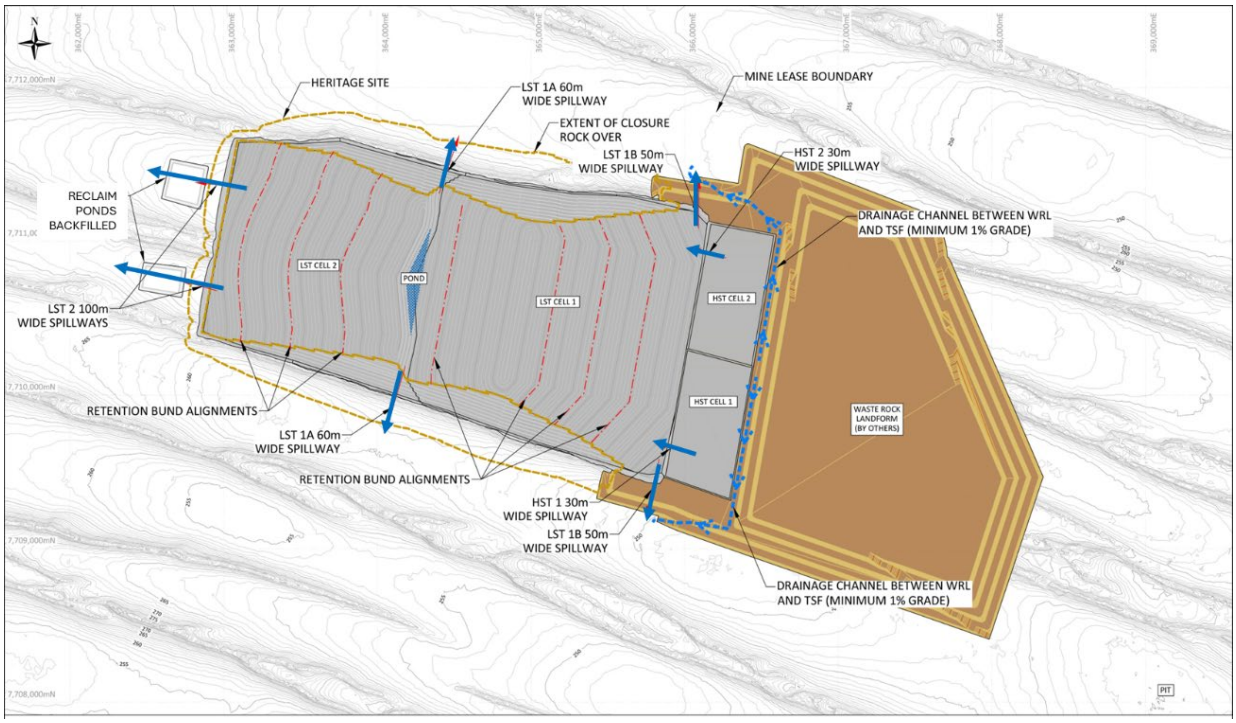


Figure 8-14: TSF Surface Water Management Design

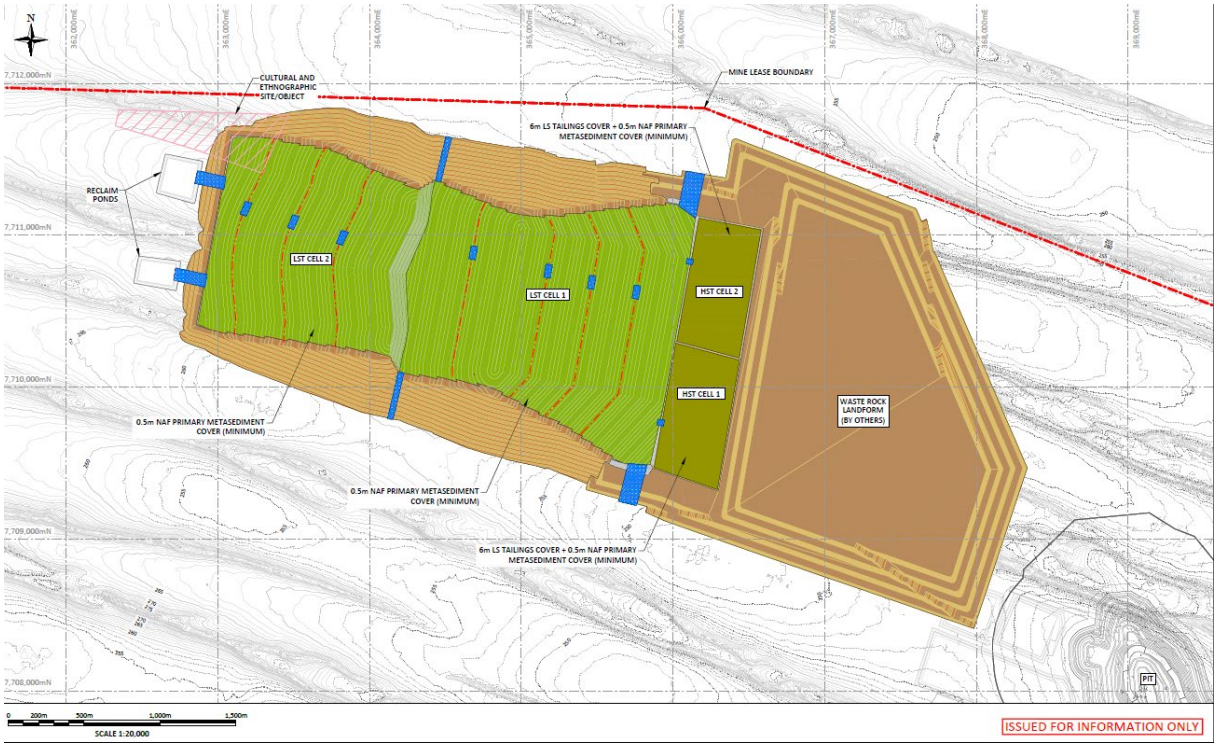


Figure 8-1515: Layout of TSF at Closure Showing Spillways

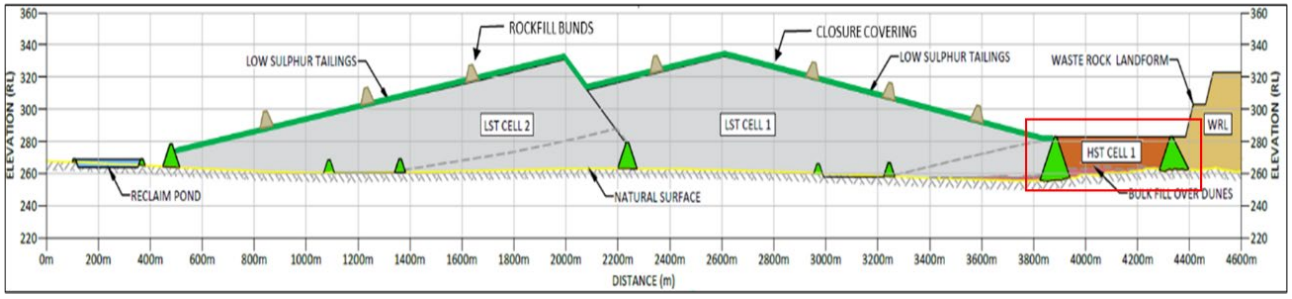


Figure 8-16: After closure – Cross Section Through TSF

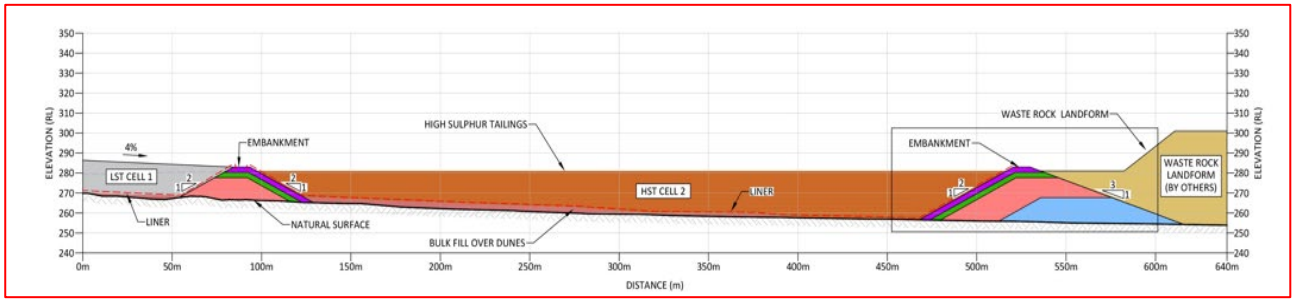
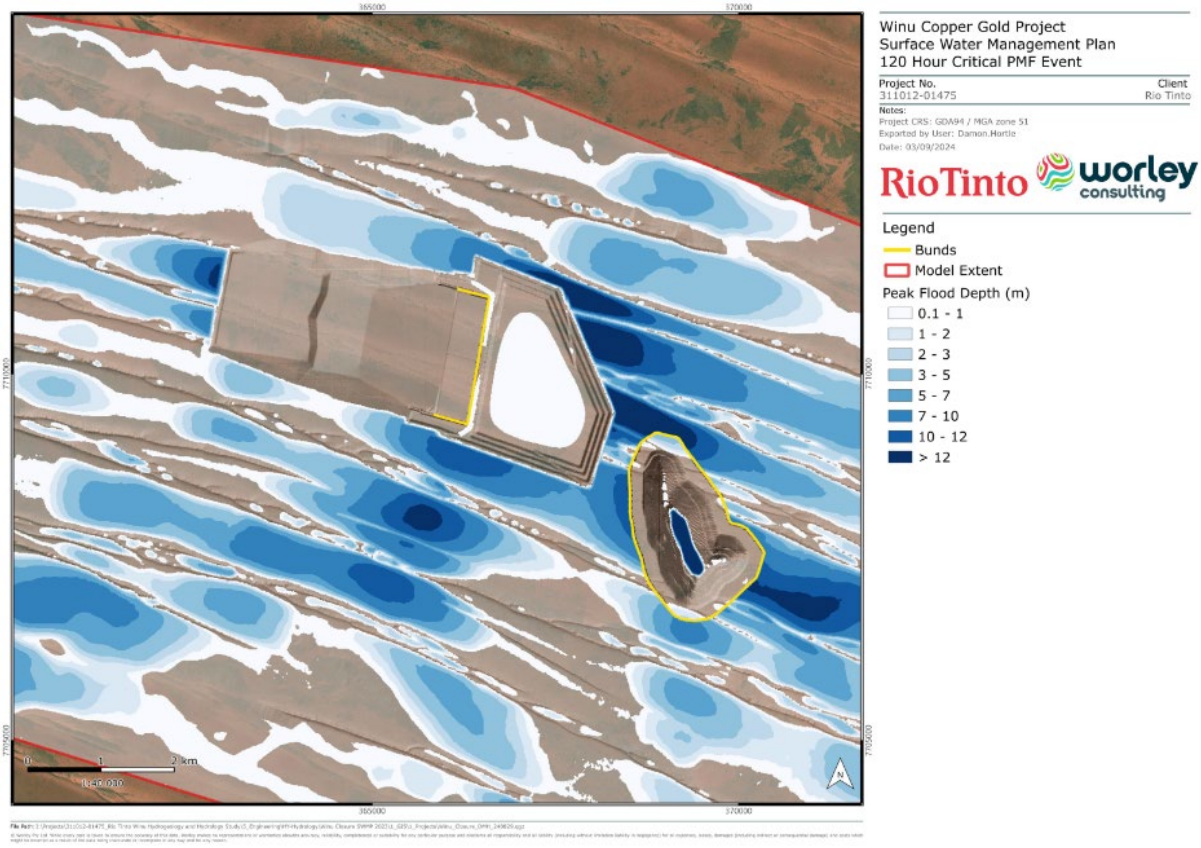


Figure 8-1717: After Closure - Detail at HST cells

Given the internally draining landforms at the WRL and TSF, water will pond within low points in the sand dunes and infiltrate into the ground after exiting landform spillways.

Ponding to the east of the WRL is predicted to be more significant due to the area being a natural low point within the catchment. Figure(s) 8-1818 shows the predicted flood depths for selected rainfall event scenarios; 120 Hr PMF, 24 Hr 1:5000 AEP and 24 Hr 1:1000 AEP. Permanent ponding is not expected, as inundation durations are estimated at between 6 and 13 days for the scenarios assessed.


Winu Copper Gold Project
Surface Water Management Plan
120 Hour Critical PMF Event
Project No.
311012-01475
Client
Rio Tinto
Notes:
Project CRS: GDA94 / MGA zone 51
Exported by User: Damon.Hortle
Date: 03/09/2024
RioTinto
worley consulting
Legend
Bunds
Model Extent
Peak Flood Depth (m)
0.1 - 1
1 - 2
2 - 3
3 - 5
5 - 7
7 - 10
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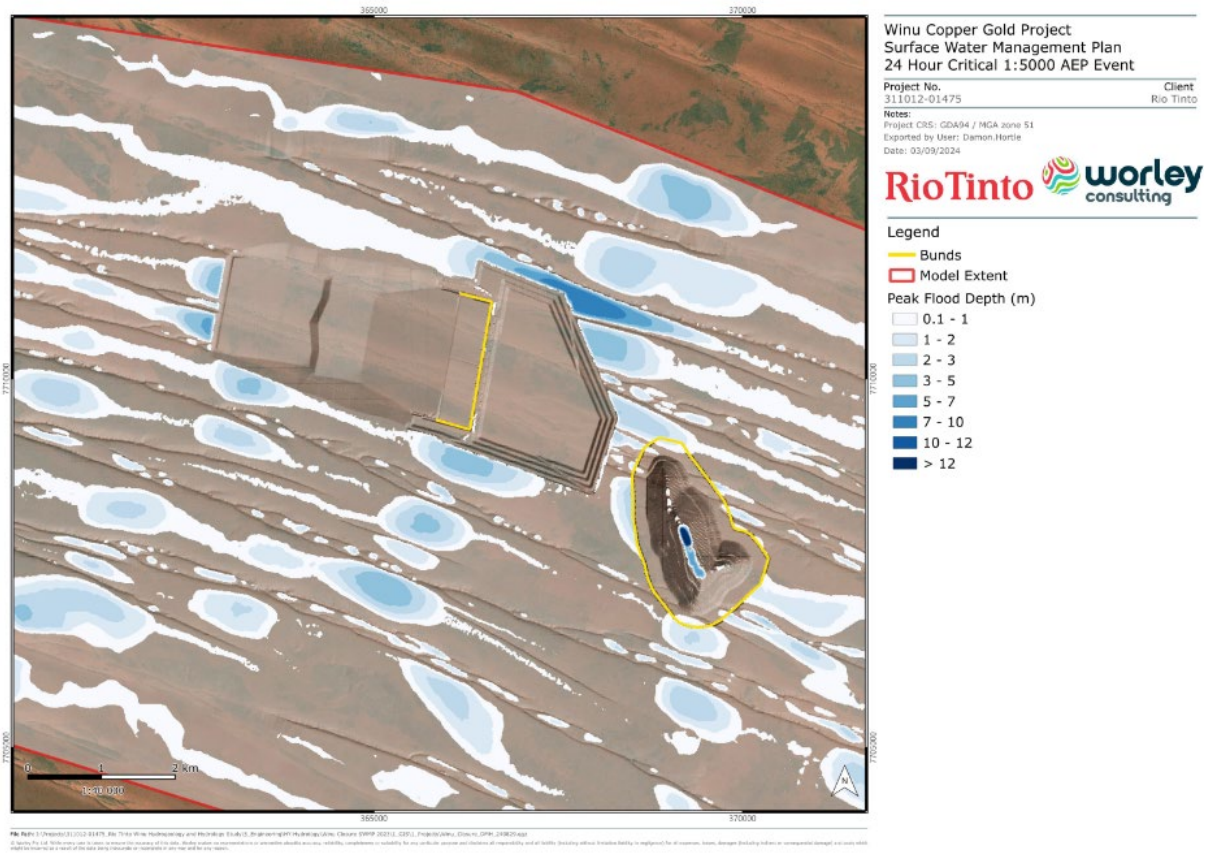
Winu Copper Gold Project
Surface Water Management Plan
24 Hour Critical 1:5000 AEP Event
Project No.
311012-01475
Client
Rio Tinto
Notes:
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RioTinto
worley consulting
Legend
Bunds
Model Extent
Peak Flood Depth (m)
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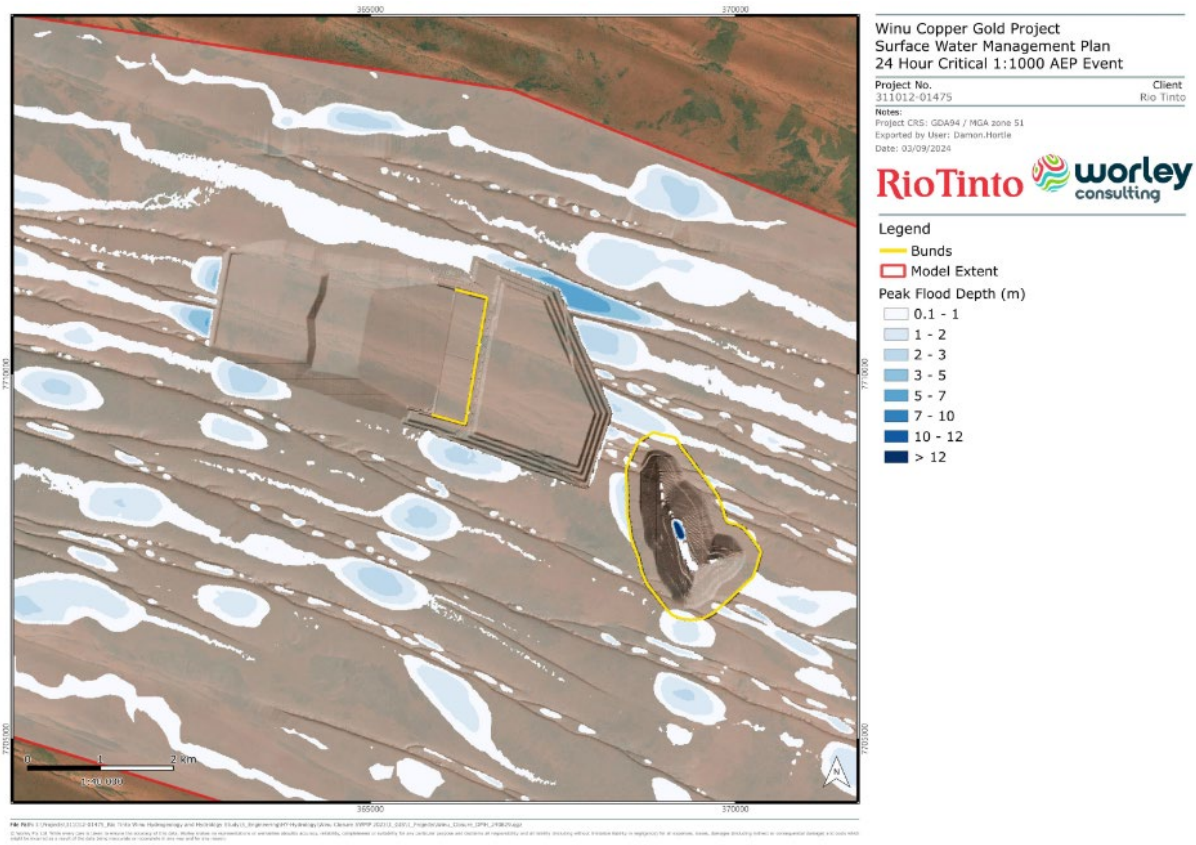

Figure(s) 8-1818: Results of Flood Depth Modelling in 120 Hr PMF, 24 Hr 1:5000 AEP and 24 Hr 1:1000 AEP Event

8.1.3.5. Closure management measures

Closure covers

Following decommissioning of the TSF, the following closure activities will be undertaken across all LST and HST cells:

- Drainage (LST only), settlement, and stabilisation of the contained tails
- Reshaping of the TSF top surface
- Removal of the reclaim water ponds, surface infrastructure and cleanup of any residual material.

Suitable waste rock for the cover has been identified within the Winu resource model; life of mine planning has scheduled this material for temporary stockpiling during mining so there is sufficient material to build the cover at closure. Topsoil or growth media (nominally 200 mm thick) will be emplaced on the cover, ripped, and seeded with appropriate provenance flora (excluding HST top surface).

A conceptual closure design for the rock armoured external walls of the TSF has been developed, and will allow for the inclusion of vegetated surfaces, except for the top of the HST cells. The cover design will continue to be evaluated during the life of mine as identified waste material is mined and can be tested to confirm suitability.

Surface water management structures have been incorporated into the closure design of the TSF. At the HST Cells surface water from events below a 72-hour Probable Maximum Precipitation (PMP) rainfall event will remain on the HST cells, and the net water infiltration will maintain saturation of the underlying tailings. Events above this level will report to spillways and discharge to the environment. Modelling predictions are that this will not result in any environmental impacts

Whilst landforms have been designed with competent rock armour on the slopes, these designs will be validated through additional geotechnical analysis of the design, including the underlying geology, and site trials prior to closure. This will also include assessment of the impacts of any perched water in the closure landforms as the ponding gradually drains.

N.B. In discussions with NWAC, it was agreed that the Proponent will carry out work during the Feasibility Study (FS) phase to see if a detailed design can be developed that facilitates the future potential for HST associated with the 280Mt mineral resource to safely go back into the pit, once the pit is sterilised. This work will be developed with NWAC. Future versions of this MCP will be updated accordingly.

Dam Break Assessment

Dam Break Assessments have informed the TSF closure design, completed by WWL (WWL, 2025b) which has been designed to eliminate credible failure modes at Closure. Notwithstanding, the TSF post-final deposition of tailings has been subject to a Dam Break Assessment. The projected extent of tailings spread in the event of either the LST northern wall (Figure 8-19) or southern wall (Figure 8-20) breach are illustrated below.

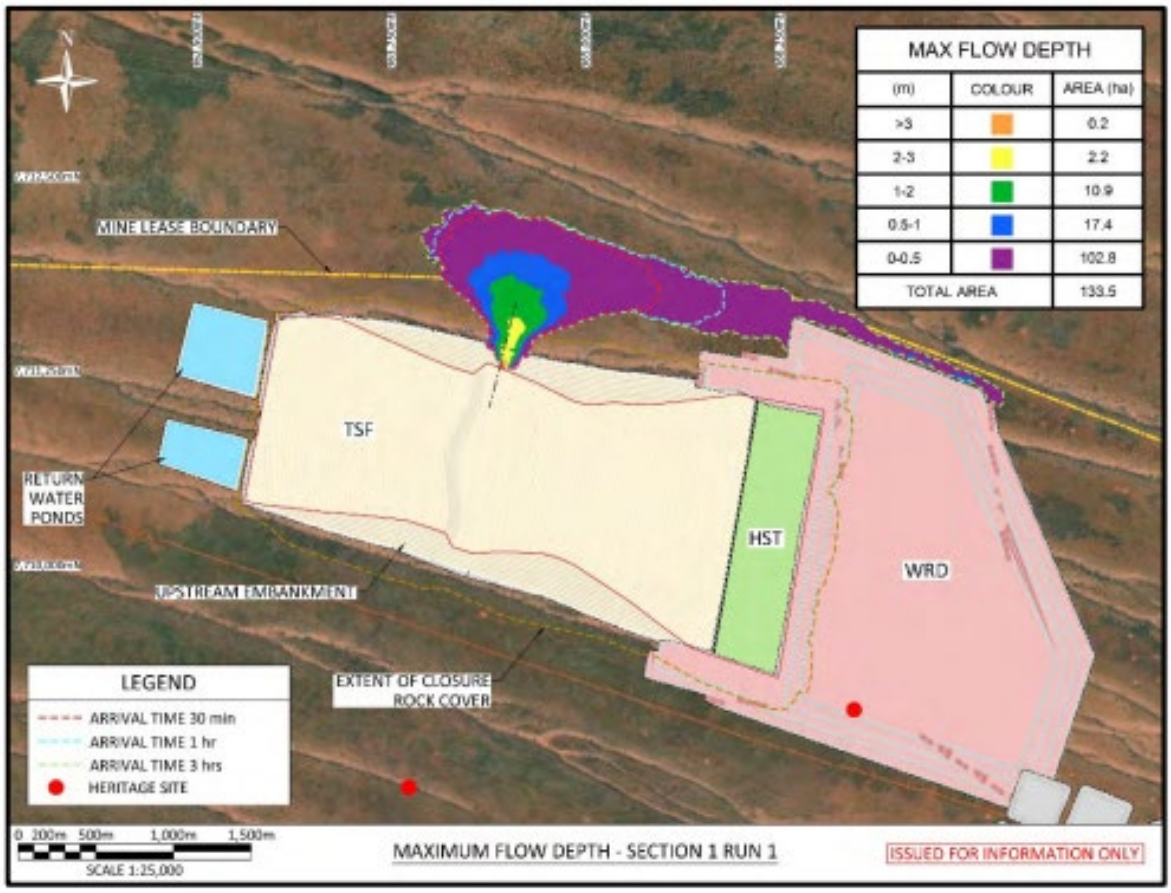

Figure 8-19: Predicted Extent of Tailings Flow in the Event of Northern LST Wall Failure – Prior to Closure Cover

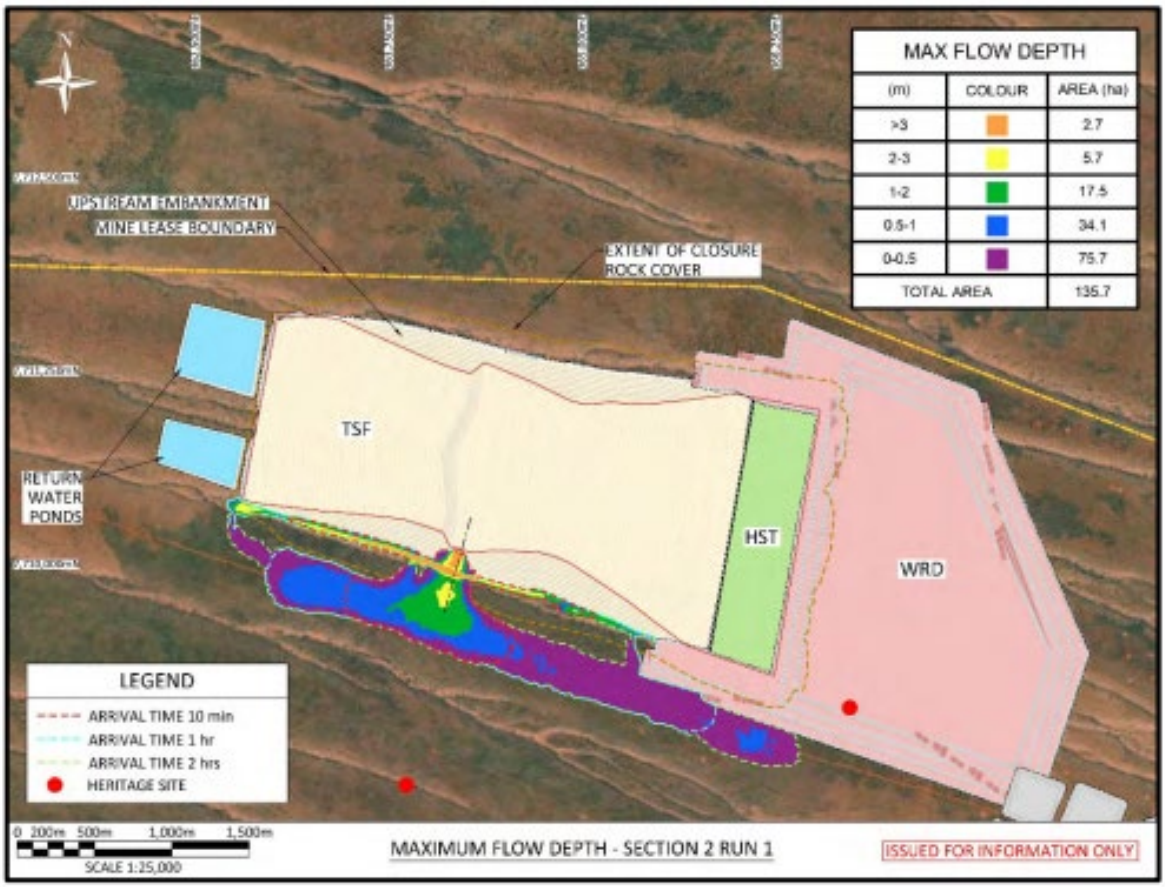

Figure 8-20: Predicted Extent of Tailings Flow in the Event of Southern LST Wall Failure – Prior to Closure Cover

Dam break assessment of the HST cells indicated that dam break failure was highly unlikely to occur as the cell is effectively bounded by the WRL to the north, east and south, with the LST cell bounding the HST cells to the west (WWL, 2025a).

Seepage

During operations, seepage would be extremely limited and controlled only by minor imperfections in the liners, with no significant liner degradation expected during the operational period. A basal seepage flux of only 0.15 mm/year is predicted, equivalent to 0.04% of annual rainfall, meaning any seepage would only move a few centimetres into underlying soils over the life of mining.

Two lined reclaim ponds will be constructed to the west of the TSF as an additional water management option. The ponds enhance operational water recovery and reduce hydraulic head on the LST liners, helping minimise seepage.

Water can be transferred from cell to cell, or to the reclaim ponds, before returning to the processing plant. These ponds are part of the closed-loop water recovery system and are not intended to discharge to the environment. The TSF design philosophy emphasises liner integrity and extremely low seepage rates for the water-holding structures.

The TSF and ponds sit above a thick unsaturated zone (15–70 m), meaning even hypothetical leakage could not reach groundwater within the operational period.

Hence TSF seepage to groundwater during operations is negligible and not expected to reach the water table.

Monitoring

Post-closure a monitoring regime will be established to determine the effectiveness of executed closure activities in meeting the agreed completion criteria. This may include groundwater borehole monitoring, erosion monitoring and mapping revegetation success.

8.1.4. Infrastructure domains

Processing and non-processing facilities are treated as domains, with similar closure scope, albeit with different scales. Non-processing facilities includes roads, access tracks, exploration, water dams, bore fields, camp, energy infrastructure, workshops, warehouse, offices, and landfills.

The following identified closure risks (Section 6.3) are applicable to the Processing and Non-Processing Facilities domains:

- The safety risk for people entering Winu after it has been rehabilitated and closed has not been effectively mitigated
- Implementation of the closure strategy does not meet the expectations of Traditional Owners
- Inadequate management of contaminating activities (hazardous materials /chemicals etc.) at Winu during operations requires management at closure
- Failure to reach agreement with the State on suitable completion criteria for Winu.

As Winu is a remote greenfield project with limited previous disturbance, the objective of closing the Processing facilities domain will be to remove all above ground infrastructure and rehabilitate the processing footprint with appropriate local native flora. Key activities would be:

- Decommission and clean all processing infrastructure including pipes, vessels, and conveyors.
- De-energise and make safe all processing infrastructure in preparation for removal
- Demolish all processing infrastructure, including footings and services above 1 mbgl at closure, with the exception of heavily reinforced footings. The surface of these will be broken up and be left in place, with up to a 1m growth medium cover applied
- Dispose demolition materials on site, to an appropriate facility, unless there is a feasible salvage or recycling opportunity identified as decommissioning plans mature
- Undertake preliminary site (PSI) and detailed site (DSI) investigations in line with WA *Contaminated Site Act 2003*. Undertake cleanup activities as required
- Backfill any areas where contaminated materials have been removed to restore the ground level to original RL
- Construction of closure safety bunds and surface water control features
- Drainage of any ponds or turkey's nests and reshape to promote drainage
- Remove water pumping headworks and pipelines, cap, and seal boreholes (unless to be preserved for post-closure monitoring) to below ground level ready for rehabilitation
- Topsoil, deep rip and seed residual footprint areas with appropriate native species
- At closure, specific management actions in alignment with the International Cyanide Management Institute (International Cyanide Management Institute, 2002) will be developed to address potential risks from residual cyanide reagents (including in the LST cells) and decontamination of equipment used in the Carbon in Leach (CIL) process.

A key discussion point with the Nyangumarta People was the ability to leave in place serviceable roads, but there is a trade-off for this benefit against the risk of increasing unauthorised access by third parties. The Proponent will continue to work collaboratively with the Nyangumarta People and Martu People to identify optimal road networks appropriate for post-closure land use, such as potential to reduce the width of the main access road from the Great Northern Highway.

Any infrastructure that is formally agreed with a third party to remain (e.g. airstrip, renewable power) will be formally transferred as per the terms of the specific agreement, including accountability for post transfer maintenance. Any infrastructure will be presented in a serviceable state as agreed between the two parties. Where no formal agreement is in place for any item of infrastructure (including roads, office, transmission lines, telecommunications) this will be removed from site to mitigate any ongoing liability.

8.2. Closure work schedule

Table 8-2 outlines a high-level closure work schedule. In addition, Section 12.2 presents a more detailed knowledge gap table and the and proposed activities to close them. Both tables are aligned with risk management discussed in Section 6. These will continue to be developed and updated as the Project matures and moves into the operational phase.

Table 8-2: Proposed Closure Work Plan for Winu

Activity	Purpose and Proposed Outcome	Planned Completion
Confirm post-dewatering groundwater recovery levels	Confirm that pit will act as a terminal sink, and that drawdown influence extends to include footprint of TSF and WRL. Continue to monitor and validate groundwater model as dewatering information becomes available during operations. Specifically, that pit void will act as a permanent sink	Ongoing validation – completed 10 years prior to closure
Consultation with Nyangumarta People and Martu People	• Validate acceptability of closure plans • Knowledge share as results of studies is obtained • Update post-closure land use opportunities that may arise during life of operations • Discuss opportunities for partnering with closure activities • Discuss potential infrastructure that may remain and be transferred • Confirm appropriate access to site and appropriate roads to be removed/retained. Update Land Access Protocols • Confirm design of the closure safety bund, including consideration of major flood events up to and including the PMF and any subsequent requirements for diversion drains or conveyance methods through the bund. In addition, the impact of future dune mobilisation will be considered in the design	Ongoing during all phases on the study, including feasibility, construction, and operation
Final TSF landform conceptual closure design, including outer surface design, flood and landform erosion modelling assessment	Confirm TSF conceptual closure design aligns with Winu Closure Outcomes and meets stakeholder expectations. • The Proponent will undertake a conceptual study aimed at determining the feasibility of in-pit disposal of HST as a final walkaway closure solution for the Winu Project (post resource exhaustion) • This study is intended to be underpinned by the principles of co-design • The Proponent will ensure that NWAC has ongoing involvement in the study, particularly as the study progresses through critical project gateways • This approach will ensure greater transparency and a more immediate identification of any potential issues or concerns that NWAC or Rio Tinto may have during the study • The Proponent has committed to investigating both closure options to a point where both options have been thoroughly explored and run to ground • Following the completion of the in-pit disposal study, Rio Tinto and NWAC will undertake a	Feasibility Study

	multi-criteria analysis of both closure options (subaqueous HST cell disposal and in-pit disposal of HST) to determine which option is most suitable for the Winu Project. This may include trials to demonstrate the effectiveness of dry covers over saturated tailings **Engagement approach:** • As study planning progresses, the Proponent to propose critical project gateways that will trigger NWAC involvement e.g. scoping, lit review, preliminary decision decisions etc. • The Proponent will propose the type of engagements through the feasibility study process that would add the most value to the study • NWAC to provide feedback and on The Proponent's proposals and agree to a study framework	
Final WRL conceptual closure design, including outer surface design, flood and landform erosion modelling assessments.	Confirm WRL conceptual closure design aligns with Winu Closure Outcomes and meets stakeholder expectations	Feasibility Study
Updated closure plans	Regular updates to closure plan to meet internal and external guidance requirements, including updates to risk register, knowledge base and any changes in project scope. Refinement of preliminary Completion Criteria	TBC likely 2030, with subsequent updates every three years
Rehabilitation of borrow pits and other disturbance footprints created during construction that are not required during operations	First key opportunity for progressive rehabilitation, as well as to demonstrate good governance of optimal cleared disturbance footprint and minimise dust generating areas. Laydown areas and borrow pits to be targeted during this process.	TBC (within 2 years post-construction)
Compliance to key operations management plans	Regular compliance checks of: • Topsoil management plan • Weed management plan • AMD S&MP • TSF operation and closure plan • Surface water management plan	During construction then annually during life of operations
Material characterisation test work on mined representative samples of Winu waste rock lithologies	Confirm physical and chemical characteristics derived from drill core samples pre-mining. Updates of mineral wastes in mining models, regular reviews of waste material inventory (problematic/beneficial wastes)	As required based on the Rio Tinto E13 standard, with external independent review every 4 years
Review existing rehabilitation R&D insight at other Rio Tinto Pilbara operations and at other mine sites in the Great Sandy Desert, or other sites that are faced with similar rehabilitation challenges.	Review and develop conceptual rehabilitation research and trial plan specific to Winu Confirm methodology for seed collection, treatment, germination and planting requirements, including culturally significant native species. Develop seed collection plan post approvals and prior to topsoil stripping	Commence Feasibility Study and ongoing

Identification of progressive rehabilitation opportunities	Life of Mine plans reviewed annually to identify any areas suitable for progressive rehabilitation	Annually during life of operations
Validation of Landform Erosion Modelling for WRL and TSF final designs based on updated characterisation results	Erosion test work on additional field samples of waste materials Field scale trials on design options Confirm proposed final landform designs including: • Final design surfaces for WRL and TSF • Confirm suitable waste rock lithologies for TSF and WRL outer surfaces • Modifications to designs as appropriate	During first 10 years of mining 10 years prior to closure
Topsoil/growth media viability trials	Investigate and implement subsoil recovery plans from pit area during initial mining phases Confirm suitability of stockpiled material for use in final rehabilitation designs., with reference to physical and biological properties.	Feasibility Study Commence before 2040
Closure cost estimate	Update closure cost estimate aligned with Feasibility Study	Feasibility Study

8.3. Research, trials and studies

An overview of key closure relevant research, trials and studies that have occurred at, or are applicable to Winu are detailed below. Detailed plans for closure and rehabilitation specific research, trials and studies will be provided in future versions of the MCP.

8.3.1. Material Characterisation and Hydrogeology

During operations, ongoing analysis work will be undertaken on representative waste rock units in line with the Winu AMD S&MP (Rio Tinto, 2025). Further characterisation (e.g. static and kinetic test work) will be undertaken on all lithologies and tailings streams to confirm that mined material displays similar characteristics to that of samples analysed to date. It is important to recognise that the small sample size available from exploration drilling may not be representative of the waste rocks extracted.

Rio Tinto is a founding member of International Network for Acid Prevention (INAP), a mining industry led and funded research group established to improve the prediction, characterisation, storage, and closure of AMD materials. Ongoing learnings and future technologies arising from INAP and other Winu related research projects (e.g. CRCTime and the University of Queensland) will be incorporated into the management of PAF materials at the Winu Project.

In addition to geochemical characterisation, physical characterisation of mined waste rock will continue to be undertaken and calibrated to inform the closure knowledge base and subsequent mine closure plan updates. For example, this knowledge will feed into updated landform erosion modelling to better determine store and release cover designs and erosion resistant outer surfaces for both TSF and WRL.

Beyond this version of the MCP, ongoing knowledge gaps will need to be closed. These include (but are not limited to):

- Pit lake chemistry development as new information on hydrogeology and geochemistry is obtained. Rebounding groundwater levels have been modelled for a PMP event, demonstrating that overtopping of the pit lake from the pit void will not occur
- Ongoing collection of monitoring data during operations to confirm current assumptions (e.g. material characterisation, groundwater response to dewatering)

- Monitoring and characterisation of LST and HST streams to determine potential to generate AMD, plus analysis of pore water, HST saturated cover and TSF reclaim water
- Ongoing geochemical characterisation studies if new material types are identified
- Long term weather patterns for the local Winu area, particularly response of local topography to flooding
- Geotechnical assessments of impacts of flooding events on the stability of the WRL and TSF, including the drain down period
- Updates of all technical models as more data becomes available.

8.3.2. Revegetation

Success in revegetation will be underpinned by appropriate processes being in place from the earliest stages of project development.

Lessons learnt from other Rio Tinto Pilbara mining sites will be used to inform the development of, and update of standard rehabilitation management practices at Winu. Insight from these research programs will be assessed for applicability to Winu, with recommendations for site-specific research and trials developed where relevant.

Opportunities to learn from rehabilitation activities at other mines in the region will also be sought (e.g. Telfer, Nifty), as well as dunal systems in other regions (e.g. Eneabba) will also be sought to inform the design and prioritisation of revegetation trials.

At the time of preparation of this Conceptual Mine Closure Plan, no dune rehabilitation has been undertaken at Winu. Accordingly, regional rehabilitation experience is considered informative in nature only and will be used to inform the design of site-specific revegetation trials rather than as a predictor of revegetation performance or outcomes.

Revegetation research and trials are likely to include the following aspects over the life of the Winu project:

- Landform specific rehabilitation designs based on mineral waste characterisation and site-specific climatic conditions
- Rehabilitation requirements considered when determining landform design
- Learnings from progressive rehabilitation; particularly the success in collecting and propagating native species
- Further work to understand the risk of the transfer of contaminants into terrestrial food-webs by their uptake by soil fauna and vegetation on rehabilitated mine-waste landforms will be undertaken
- Improved soil and seed management practices (viability testing and pre-treatment).

Rio Tinto undertakes research and development to increase its understanding of the local natural ecosystem, optimise its rehabilitation techniques and be at the forefront of technological advances; with the over-arching goal of continually improving the rehabilitation quality it can achieve. Existing Rio Tinto Iron Ore (RTIO) research and development projects range from opportunistic on ground trials, to large scale multi-partner federally funded research programs. A selection of recent research and development initiatives from RTIO are that may have relevance to Winu are summarised below.

8.3.2.1. Eco-Engineering Solutions to Improve Mine-Site Rehabilitation Outcomes

Both Rio Tinto and BHP Western Australia Iron Ore are partners in a federally funded research program investigating the rapidly developing field of Restoration Engineering, with a focus on the mining-intensive Pilbara region of Western Australia. This Global Innovation Linkages project is led by the Kings Park Science research team and has additional partners from the University of Western Australia (UWA), Greening Australia, University of California, Brigham Young University, the University of Nevada, and Natural Resource Conservation LLC (a private US-based consultancy).

The Restoration Engineering approach partner's ecological research, focussed on best practice use of seeds from a recruitment biology point of view, with innovative ecologically guided engineering solutions focussed on the invention and modification of seeding equipment needed to deliver native seeds at scale. This project hosted a workshop in 2018, bringing together a team of local and international research scientists and industry professionals involved in the advancement of UWA's recent 'flash flaming' invention and direct seeding machine development. The Project aims to:

- Critically evaluate the field limitations of current mechanised seeding techniques used in large-scale rehabilitation efforts to guide engineering modifications or new designs required to improve precision delivery of native seeds in adverse rocky, uneven and sloped landforms
- Design, construct, and field test prototype seed enhancement and direct seeding machines that can accommodate and efficiently deliver a wide range of seeds including those that differ in shape, size, and weight, and enhanced (primed, pelleted and coated) seeds, at broad acre scales
- Quantify seed placement, seedling recruitment and rehabilitation performance using the engineered direct seeding machines across different mining growth media and soil types
- Disseminate this research through peer-reviewed publications, on-ground field demonstrations on active mine sites or degraded lands and multiple conference and workshop avenues.

Whilst some knowledge within the Project remains confidential in the early research phase, there have been aspects incorporated into Rio Tinto's progressive rehabilitation trial areas. These include the use of flamed seed preparation rehabilitation, spinifex pre-treatment trials and the evaluation of several new species for flaming treatment. Work has also included an engineering trial to optimise the placement of seeds under the soil surface for increased germination results. Several trials are underway in a lab testing environment and may be phased into field trials in the future. Opportunities to incorporate research trials into the company's progressive rehabilitation projects are undertaken where possible and incorporated into the rehabilitation monitoring program. Learnings are then incorporated into seed management and rehabilitation procedures.

8.3.2.2. Pilbara Seed Provenance

Appropriate strategies for collecting seeds as the raw genetic material for restoration activities are an important consideration for revegetation programs. Traditional approaches regarding seed collection follow a precautionary principle that advocates a narrowed definition of 'local provenance' seed. This approach has been adopted by DWER, DMPE and other regulatory agencies in mining-related environmental approvals in the Pilbara, where approval owners are required to use 'locally' sourced seed. This 'local' restriction often relates to geographic distance and does not take into consideration other factors related to biogeographical setting or relevant plant ecology and seed biology. The Pilbara Seed Provenance Study was a collaboration between industry and DWER, undertaken to genetically delineate local provenance and provide clarity with respect to delimiting seed provenance zones for a suite of Pilbara species used in mine site rehabilitation and other revegetation initiatives.

Nuclear genotyping for six species *Petalostylis labicheoides*, *Indigofera monophylla, Corymbia hamersleyana, Acacia hilliana, Acacia pruinocarpa* and *Senna glutinosa subsp. glutinosa* across the Pilbara was completed. The results were finalised in 2017 and showed that several species exhibited strong patterns of population structure, indicating that each require seed to be collected from specific provenance zones, whilst others showed little to no delineation between populations, allowing for seed collection to occur across the full geographic range of the species. This knowledge contributed to addressing the uncertainty regarding seed provenance for RTIO. Whilst this knowledge is not completely applicable to the Winu environment, methodology and insight can be reviewed to inform appropriate Winu based research.

8.4. Progressive rehabilitation

Progressive rehabilitation will be undertaken where practicable throughout the life of the Project to reduce final closure liabilities and inform closure outcomes.

Progressive rehabilitation at Winu will be undertaken both as final rehabilitation for permanently redundant areas and, where uncertainty exists, to generate site-specific information from trials to inform closure planning and final landform rehabilitation design.

Where disturbed areas are not expected to be re-disturbed, and future land use is well defined, progressive rehabilitation may represent final rehabilitation outcomes that will be assessed against agreed completion criteria. In sand-dominated environments, including dunes and sandplain landforms, early progressive rehabilitation may be implemented as targeted trials where practicable, with monitoring undertaken to assess surface stability, revegetation establishment and response to climatic variability.

At the time of preparation of this Conceptual Mine Closure Plan, no dune rehabilitation has been undertaken at Winu. Accordingly, early rehabilitation activities in these environments will be used to inform the refinement of final rehabilitation approaches rather than as definitive evidence of long-term rehabilitation performance.

Outcomes from progressive rehabilitation will be monitored and used to adaptively refine rehabilitation methods, completion criteria and closure designs, and to inform future updates of the Mine Closure Plan.

Early progressive rehabilitation opportunities will likely exist in project construction areas not required for mining operations; such progressive rehabilitation activities may include:

- Rehabilitation of borrow pits along the road access corridor
- Rehabilitation of construction laydown areas
- Rehabilitation of access roads created for renewable energy.

During the life of operations, significant rehabilitation opportunities will be limited, as the key domains for revegetation (i.e. WRL, TSF, stockpiles and infrastructure) will be in use throughout the project life. Notwithstanding, as mine plans mature, opportunities for progressive rehabilitation will be identified and implemented, particularly to progress any research needs that have been identified (refer Section 8.3).

Any rehabilitation activities that are undertaken will be reported in future Winu Annual Environmental Reports.

Rehabilitation of exploration areas in the Winu area has been underway for several years. The details of the rehabilitation activity is reported to the regulator on an annual basis, in accordance with the Winu Exploration Ground Disturbance and Rehabilitation Work Practice (Rio Tinto, 2025b). These areas will continue to be monitored and outcomes used to inform future rehabilitation activity at the Winu Project. In addition, a summary report on the performance on samples of exploration rehabilitation at Winu has been completed (Rio Tinto, 2026). The report indicates that minimisation of time between initial disturbance and rehabilitation along with time since rehabilitation are key drivers in the recovery of vegetation.

8.4.1. Rehabilitation planning and implementation

Life of mine planning processes will identify areas which are no longer required for operational activity and are therefore available for rehabilitation. Progressive rehabilitation opportunities will be reassessed regularly as part of the planning process, with a focus on areas that are redundant post project commissioning.

A Winu Rehabilitation handbook will be developed and reviewed and updated periodically to reflect changes in industry standards, reflect new knowledge obtained through research and development, and to adopt learnings from ongoing rehabilitation projects. The Handbook will include the following aspects:

- Soil resource management
- Rehabilitation techniques

- Local provenance species seeding practices
- Records and data management
- On-going monitoring.

8.4.1.1. Seed mixes

Locally collected seed is required to assist in meeting revegetation targets and the creation of a self-sustaining ecosystem. This is due to the stockpiled topsoil may not contain the seeds of all the target species of its new location, and the viability of seed declines substantially over time.

Seed used in the seed mixes for rehabilitation are of local provenance, which will likely be within 100 km and within the same IBRA subregion. Each rehabilitation site has a specific seed mix taking into consideration species in near-by unmined areas, landscape position and slope. In areas where erosion risks are identified or where a cover system is in place for hazardous material (for instance where a shallow-rooted seed mix is indicated), seed mixes may be modified to include or increase the portion of species that provide rapid cover. Culturally significant species to the local Traditional Owner group/s will also be included in the seed mix where appropriate.

Given numerous issues associated with rehabilitating rare and threatened flora species in rehabilitation, the focus of rehabilitation programs will be to restore vegetation complexes that include the more common species present in the habitat type, and to achieve a diverse range of strata. Seed mixes may include species of conservation significance if they are available.

Some issues associated with establishing flora species in rehabilitation include:

- Habitat preference – generally these species have a preference for drainage lines, gullies, calcretes or other habitat which are limited in rehabilitation landscapes
- Abundance - very few, or small, populations from which to source seed
- Seed production - some species do not regularly produce seed
- Difficult or unresolved taxonomy issues and thus status of species highly uncertain
- Propagation methods - some species may not be able to germinate from seed and cuttings may be required which is not a suitable method for broad scale application in an arid environment
- Availability of seed at the time when rehabilitation occurs
- Seed dormancy.

8.5. Conceptual closure landscape

As per Section 5 there will be limitations on post mining land use for the permanent closure landforms, i.e. the TSF, WRL and Pit void, due to the need to preserve the closure measures that will be executed.

All other areas will be revegetated with native species and will not preclude post closure land uses that the Nyangumarta may wish to progress, post relinquishment.

Notwithstanding, initial conversations have been held with Nyangumarta People regarding post-closure land use. Nyangumarta raised the following potential alternatives as being of interest to them:

- Renewable energy
- Conservation reserve
- Water based industry utilising the pit lake.

Discussions with the Martu People took place regarding transfer of ownership of the Airstrip. This has now been resolved, with agreement that the Proponent will retain responsibility for decommissioning and removal of the Airstrip at closure.

Stakeholder engagement on post closure land uses will be undertaken throughout the life of mine and will incorporate outcomes from research and investigations currently underway by CRCTiME (Rio Tinto

is a partner of this initiative), and University of Queensland's Sustainable Mining Initiative (SMI) into alternative post-closure land use. This will be relevant to understand the viability of any identified post-closure alternatives.

8.6. Contingencies for premature or early closure or suspension of operations

Currently the Winu Project is subject to external and internal approvals. If the Project does not proceed, all exploration and pre-development activities (e.g. water bore construction and testing) would be rehabilitated and all infrastructure removed from site to the approval of the Nyangumarta People and Martu People and in line with existing closure requirements for current tenements.

Once the Project is approved, and prior to construction an Unplanned Closure Strategy will be prepared and reported in future versions of this MCP.

The strategy would include an update of the environmental risk assessment to aid with prioritisation of actions, and an update of the MCP, to address the following:

- Stakeholder engagement to communicate the strategy to be implemented and address concerns of key stakeholders
- Review closure outcomes and completion criteria to determine any which may be difficult to achieve given premature closure, and communicate these with relevant key stakeholders to determine a way to resolve issues
- Amended landform designs for permanent landforms and associated surface water control structures where the proposed design could no longer be met
- Review of topsoil and other rehabilitation materials balances to determine any deficiencies in materials, and options to address this
- Undertake contaminated land assessment, and where required, remediation works, of all areas of the Project used to manufacture, store, or utilise hazardous materials
- Update the final void groundwater model where the proposed extent of mining did not occur to determine if the closure strategy requires amendment
- Finalise any rehabilitation or closure trials to determine if findings are adequate to implement
- Review and update monitoring and maintenance requirements
- Revise and update of the closure cost estimate to determine any financial constraints associated with altered designs or deficit of rehabilitation materials
- Address all safety obligations required under Sections 42 and 88 of the WA *Mines Safety and Inspection Act 1994* relating to mine suspension or abandonment. One of those obligations is to notify the relevant DMPE District Inspector before a mining operation is suspended or abandoned.

8.6.1. Suspended operations under care and maintenance

In case of temporary suspension of operations or a period of care and maintenance the following high-level plan will be implemented:

- Notify DMPE prior to suspension of mining or entering a period of care and maintenance as required under Section 10 of the WA *Work Health and Safety* (*Mines) Regulations 2022*, and meet all relevant safety obligations
- Undertake a detailed Site Audit to establish the status of all landforms and infrastructure to ascertain environmental risk
- Prepare an Environmental Risk Assessment to inform the Care and Maintenance Plan
- Submit a detailed Care and Maintenance Plan (C&M) plan to DMPE within three months of suspension of operations

- Continued implementation of progressive rehabilitation management plan of areas that can be rehabilitated during C&M
- Continued pre-closure monitoring, including the addition of safety/site access monitoring.
- Continued maintenance of drainage systems
- Continued erosion control activities
- Continued road maintenance activities.

8.6.2. Permanent early closure

Early permanent closure of Winu would likely result in modifications of the proposed mine closure strategies detailed in this MCP and its subsequent revisions.

In the event of early closure, revision and update of the closure risk assessment would occur to determine key areas for closure works and any change in residual risk from premature closure. Outcomes of the review will be used to prioritise closure tasks.

A revision and update of the MCP and development of a decommissioning plan will be completed to address changed circumstances and gain approval from relevant key stakeholders where strategies may require amendment.

- As required under Section 10 of the WA *Work Health and Safety* (*Mines) Regulations 2022*, Rio Tinto will notify the DMPE prior to entering mine closure and meet all relevant safety obligations.

These plans would require the following as a minimum:

- Stakeholder engagement to communicate the amended closure strategy and address stakeholder concerns
- Review closure outcomes and completion criteria to determine any which may be difficult to achieve in given premature closure. Communicate these with relevant key stakeholders to determine a way to resolve issues
- Amended landform designs for all permanent landforms and mining voids where the proposed design could no longer be met
- Review of topsoil and other rehabilitation materials balances to determine any deficiencies in materials, and options to address this
- Undertake contaminated land assessment, and where required, remediation works, of all areas of the site used for storage or utilise hazardous materials
- Update the final void groundwater model where the proposed extent of mining did not occur to determine if the closure strategy requires amendment
- Finalise any rehabilitation or closure trials to determine if findings are adequate to implement.
- Review and update monitoring and maintenance requirements
- Revision and update of the closure cost estimate to determine any financial constraints associated with altered designs or deficit of rehabilitation materials.

8.7. Decommissioning and execution

As the Project is in the planning phase, this section will be updated in future versions of the Winu Mine Closure Plan. Section 8.1 discusses the dominant domains associated with decommissioning Notwithstanding, the general approach to decommissioning will be as follows:

- Development of a decommissioning plan, inclusive of stakeholder engagement, and a cost estimate (at an appropriate level of accuracy)

- At cessation of ore processing, equipment and facilities will be decommissioned prior to removal (except those items identified to remain post closure). Where appropriate, process circuits and storage vessels will be decontaminated, electrical distributions de-energised and stocks run down prior to decommissioning commencing. Compliance to the Cyanide Management Code will be followed for decommissioning of all facilities related to Cyanide (International Cyanide Management Institute, 2002)
- Equipment and facilities that will not remain post closure will either be dismantled for reuse or resale or demolished for on-site disposal to an appropriate facility
- Contaminated land assessments will be undertaken following removal of infrastructure, or within the vicinity of infrastructure to be handed over to a stakeholder. Where required, remediation activities will occur and the monitoring and maintenance requirements within the MCP updated
- Final landforms will be constructed, including any installation of covers, placement of growth medium, closure safety bunds and surface drainage structures. Where required, soil amendments will be made and seed mixes spread
- Groundwater production and monitoring bores not required for the post closure monitoring program, or being handed over to stakeholders, will be decommissioned to meet regulatory requirements
- Monitoring activities will commence within the required timeframes following completion of rehabilitation activities
- Revision and update of the closure cost estimate to determine any financial constraints associated with altered designs or deficient materials.

9. CLOSURE MONITORING AND MAINTENANCE

9.1. Closure monitoring program

The purpose of closure monitoring is to assess whether the agreed closure completion criteria have been met. As only conceptual completion criteria have been defined (Section 7.2), a detailed closure monitoring program will be developed during the operational period as completion criteria mature and are finalised as the site approaches closure. As such this preliminary Mine Closure Plan outlines the principles that would be employed rather than specific detail.

Notwithstanding, there are many elements of closure related monitoring that will commence prior to and during the operating period and will extend into closure. For example, leading measures for waste material management, monitoring to validate groundwater assumption, monitoring of trials and progressive rehabilitation.

These are described in the subsequent sections.

9.1.1. Phases of monitoring

Monitoring will be conducted in several phases, as outlined below, and the knowledge base section all results relevant to closure will be included in the in each revision of the MCP:

Monitoring relevant to closure will be conducted in several phases including:

- Baseline monitoring; mostly conducted prior to the commencement of development
- Operational monitoring; both compliance, license and other recommended monitoring undertaken during life of operations
- Pre-closure monitoring
- Closure monitoring; undertaken during execution of closure activities
- Post-closure monitoring: conducted on a regular basis at a defined frequency until either completion criteria can be demonstrated as met, or agreed parameters reach a steady state.

The closure and post closure monitoring programs will be developed during operations with detail finalised during the latter stages of closure planning as the site approaches closure and be informed by relevant regulatory guidance and Rio Tinto standards. The program is expected to include the following elements, and is expanded upon in the following subsections:

- Erosion monitoring
- Rehabilitation monitoring
- Fauna re-introduction
- Monitoring of groundwater recovery levels and water quality
- Pit lake monitoring for water quality and aquatic ecology
- Surface water quality monitoring
- Effectiveness of AMD management measures
- Geotechnical stability
- Ongoing collection of climatic data
- Preservation of restricted access to site prior to relinquishment, including investigation of unauthorised access.

Specific and appropriate monitoring will be conducted to ensure data is obtained to allow assessment of performance against agreed SMART completion criteria (Section 7.2). The monitoring program will be sufficiently flexible to enable adjustments if results indicate that changes in sampling intensity or type are warranted.

9.1.2. Preliminary monitoring program

The closure monitoring program will be progressively refined during operations and finalised during the five to ten years prior to planned closure when detailed closure studies are conducted. The exception to this will be monitoring associated with progressive revegetation and erosion, which monitors progressive rehabilitation during construction and operations and will continue to be applied during the post operational monitoring phases.

A preliminary monitoring program for Winu would include components presented in Table 9-1. Specific and appropriate monitoring will be conducted to ensure data is obtained to allow assessment of performance against completion criteria (Section 7.2). The monitoring program will be sufficiently flexible to enable adaptive management if results indicate that more or less monitoring is warranted at any particular phase. Specific parameters within each aspect will be further defined in subsequent MCPs.

Table 9-1: Preliminary closure monitoring program

Aspect	Phase		
	Pre-closure	During closure implementation	Post-closure to relinquishment
Erosion monitoring	✓	✓	✓
Rehabilitation (vegetation) monitoring	✓	✓	✓
Groundwater level monitoring	✓	✓	✓
Groundwater quality monitoring	✓	✓	✓
Surface water quality monitoring	✓	✓	✓
Contaminated sites assessment	✓	✓	
Heritage survey	✓	✓	✓
Geotechnical stability	✓	✓	✓
Climate monitoring	✓	✓	✓
Safety/site access monitoring			✓
Compliance Monitoring (e.g. management plans)	✓	✓	✓

9.1.3. Rehabilitation monitoring

The purpose of the rehabilitation monitoring program is to evaluate successional development of rehabilitation areas and thereby provide useful feedback for the improvement of rehabilitation techniques, and to help assess progress towards long-term rehabilitation outcomes. Rehabilitation sites and associated reference sites (undisturbed native vegetation representative of the local area will be used to inform rehabilitation practices and success) and will be monitored throughout the mine life. Further detail of the rehabilitation monitoring program and monitoring procedures will be provided in future versions of this MCP.

The results of rehabilitation monitoring will provide vital information to set realistic, achievable, and meaningful completion criteria. This will occur through evaluation of trends and trajectories in key parameters, and by comparison of monitoring results from corresponding reference or analogue sites, positioned within local areas of undisturbed native vegetation.

These programs will be designed to evaluate successional development of rehabilitation areas to provide feedback assessment against completion criteria for elements including erosion and soil

retention, native flora re-establishment (including soil bacteria and micro-organisms), weed control, and fauna re-introduction (including feral animal control).

The goal for rehabilitation monitoring is the ability to demonstrate that rehabilitated areas are achieving a degree of self-sustainability and resilience to events such as bushfires and drought. The initial rehabilitation monitoring frequency is likely to be bi-annual, with reporting annually. The frequency will be altered to an appropriate cadence as rehabilitation matures.

A Winu Rehabilitation Monitoring Handbook will be developed and incorporated into future updates of this Mine Closure Plan and will include elements such as:

- Monitoring methods – quantitative and qualitative for flora, fauna, and erosion
- Performance against revegetation completion criteria – native species richness, diversity density, plant cover (including appropriate reference sites), weed presence
- Fauna and habitat monitoring – litter cover, habitat structures, food sources, activity indicators (e.g. scats)
- Erosion - gully identification, depth and width, soil loss
- Wind erosion and deposition
- Records of events – climate and fires
- Documentation and assessment of trials.

Annual Environmental Reports will provide information on revegetation monitoring methods, raw data and subsequent analysis.

9.1.4. Water monitoring

Water monitoring during closure will focus on confirmation of groundwater recovery levels, groundwater quality (e.g. pH, metals), pit lake water assessment (quality and recovery levels) and any potential impacts to surface or sub-surface receiving environments, this will include the pit lakemonitoring program discussed in Section 6.4.13, to identify risks of failing to meet closure objectives of the pit lake domain being non-polluting.

Data collected during operational monitoring will be used to inform a specific program of monitoring for closure. This will be developed prior to decommissioning and any updates will be included in future updates to the closure plan.

Both groundwater and surface water closure monitoring programs are likely to utilise some existing and planned operational sampling locations to understand long term trends and changes from baseline conditions before mining, during operations and recovery post-mining. Sampling locations that utilise baseline and compliance points during operations will be favoured, however additional sampling locations may be needed post-mining (e.g., locate holes at potential points of interest). Water monitoring frequency is likely to initially be a combination of monthly and quarterly events, with annual reporting. The monitoring frequency will be altered to an appropriate cadence as the site evolves post-closure.

9.1.5. AMD monitoring

Operational surface and groundwater monitoring for reactive mineral waste and AMD impacts will be focused on the process circuit, storm water catchment ponds and groundwater surrounding the TSF’s and WRL’s. In addition to this sampling within the operational footprint, numerous surface and groundwater monitoring points (including seeps) will continue to be sampled outside the operational footprint.

Table 9-2 describes the preliminary view of recommended water quality sampling and frequencies to assess the effectiveness of AMD management measures and Table 9-3 describes the water parameters to be analysed. This approach will be reviewed and updated within a specific Water Monitoring Plan.

Table 9-2: Preliminary Water Quality Sampling and Frequency

Water Source	Field Chemistry	Full Chemistry	Water level	Locations
TSF Groundwater	Quarterly	Quarterly	Quarterly	Bores in the likely groundwater flow direction. Ensuring all aquifers and reasonable pathways are monitored.
TSF Surface Water	Weekly	Monthly	Weekly	• Water quality above the PAF tailings and decant water • Water level above the PAF tailings
TSF Surface Water	Ad hoc	Ad hoc	-	• Any toe seepage or ditch drain water • Water inflows to the TSF from the mine (i.e. pit or WRD runoff).
WRL Groundwater	Biannual	Biannual	Biannual	Bores in the likely groundwater flow direction. Ensuring all aquifers and reasonable pathways are monitored.
WRL Surface water	Ad hoc	Ad hoc	-	Any seepage or water collecting at the base of the WRL.
Ore Stockpiles Groundwater	Biannual	Biannual	Biannual	• Bores in the likely groundwater flow direction. Ensuring all aquifers and reasonable pathways are monitored. • Focus on high AMD risk and longer-term stockpiles
Ore Stockpiles Surface water	Ad hoc	Ad hoc	-	Any seepage or water collecting at the base of the stockpiles.
Pit collection sump	Ad hoc	Ad hoc	-	Any seepage or water collecting at the base of the pit.
Pit dewatering	Quarterly	Quarterly	Quarterly	Bores surrounding the pit, with particular focus on in-pit bores and those near PAF wall exposures

Table 9-3: AMD Water Monitoring Parameters

Parameter	Applicability
Field parameters	
pH	All
EC	All
TDS	All
ORP	
Full chemistry	
Ag, Al, As, B, Ba, Be, Bi, Cd, Co, Cr, Cu, Fe, F, Hg, Mn, Mo, Ni, Pb, Sb, Si, Se, Tl, U and Zn	All
SO_4, Cl, HCO_3, Ca, Mg, Na, K	All
Total, N, NH_3, NO_3, NO_2, Total P	All
Alkalinity or Acidity	All
TDS and TSS	All
Total Cyanide, Free cyanide, WAD cyanide, Thiocyanate cyanide	TSF sampling only

Specific monitoring to verify the effectiveness of covers on the WRLs and TSFs will also be developed and included in future versions of this MCP.

9.1.6. Heritage surveys and monitoring

Heritage assessments, monitoring and consultation will continue to be undertaken post-closure to ensure that (if) any relocation of artefacts, restoration of culturally sensitive sites or other agreed activities have been sustainably completed in an appropriate manner.

9.1.7. Contaminated sites monitoring

Contaminated sites monitoring will be undertaken as per DWER guidelines to determine impacts and areas that require remediation, and/or classification.

9.1.8. Geotechnical stability monitoring

Operational geotechnical stability monitoring of pit walls is undertaken using manual and automatic prisms, extensometers, visual inspections, and aerial survey data, and will continue throughout the pre-closure and closure implementation phases. The purpose of this monitoring is to ensure the safety of operational and closure implementation personnel. Post-closure geotechnical stability monitoring will focus on permanent landforms, to identify any signs of large-scale geotechnical instability that would prevent the closure outcome of having stable final landforms from being achieved.

The post-closure geotechnical stability monitoring program will be refined over time and will utilise the most appropriate available technology to demonstrate the closure outcome of safe and stable landforms has been achieved. Should post-closure monitoring identify conditions that do not meet the agreed closure outcomes, maintenance and rework measures will be determined and implemented as appropriate.

9.2. Post-closure monitoring program

The post-closure monitoring phase represents a critical period during which the performance of rehabilitated landforms and ecosystems is assessed against completion criteria to ensure that closure outcomes are achieved and sustained. A targeted monitoring and maintenance program, as indicatively outlined in Table 9-1 will be implemented, focusing on key closure domains such as landform stability, vegetation establishment, surface water management, groundwater quality, and contamination risks.

If monitoring data indicates that completion criteria are not being met, a structured process for remedial action will be triggered. This may include activities such as localised erosion control, replanting, soil amelioration, or drainage repairs. Adaptive management principles will be applied to address issues as they emerge, with performance continually evaluated and reported.

Recognising that many operational support functions may be significantly reduced or demobilised after closure, dedicated support mechanisms will be identified and documented prior to entering the post-closure phase. This may include establishing external service contracts and integrating closure responsibilities into ongoing business systems or asset legacy arrangements and retention of rationalised vehicle access routes. The objective is to ensure the site retains access to the necessary resources for effective monitoring, maintenance, and governance throughout the post-closure phase.

9.3. Post-closure maintenance

Post-closure maintenance will continue as required (with reference to monitoring outcomes) until it is determined that the closure outcomes and completion criteria have been met, or it is otherwise agreed with Government to allow relinquishment of the tenements. Post relinquishment, no ongoing monitoring or maintenance is envisaged.

- Post-closure (pre-relinquishment) maintenance activities may include the following:
- Periodic access inspection and maintenance of closure safety bunds
- Maintenance of monitoring equipment
- Road maintenance

- Maintenance of any retained engineered structures
- Maintenance of access routes to cultural heritage sites, and of any fencing and signage that may be required to prevent people accessing these areas from entering unsafe locations
- Maintenance of any drainage structures
- Rehabilitation repair and maintenance (including management of weeds or feral animals) to resolve issues with erosion.

10. CLOSURE COST ESTIMATION

The Proponent considers specifics of the closure cost estimate to be commercially sensitive information, therefore, this section only provides an outline of the general process used to develop the closure cost estimate.

As per the Statutory Guidelines for Mine Closure Plans the mine closure plan must include the details of closure costing methodology, including clearly documented assumptions and uncertainties.

Whilst not a requirement to provide a provisional cost estimate for mine closure at this stage of the Winu Project, the Proponent nevertheless recognises the importance of ensuring adequate funds are set aside for the rehabilitation and closure of the proposed project.

The Proponent considers specifics of the closure cost estimate to be commercially sensitive information, therefore, this section provides an outline of the general process used to develop the closure cost estimate.

Data to support participation in the Mines Rehabilitation Fund has not been included in this Mine Closure Plan due to the early stage of the Project and limited on ground disturbance. Future updates of the MCP will incorporate the provision of data for use in the MRF process.

10.1. Principles of Rio Tinto closure cost estimation

The closure cost estimate for Winu is based on the application of unit rates to areas, a method considered appropriate for preliminary cost estimates. The process involves the use of GIS data, preliminary engineering designs and a database of domain specific, closure activity rates utilised in Rio Tinto Iron Ore closure cost estimates. These unit rates have been adjusted where appropriate to reflect the characteristics of the Winu project.

For *future* closure cost estimates, the methods outlined in the Rio Tinto Closure Standard (Rio Tinto, 2021a) and the Rio Tinto Closure Cost Estimating and Reporting Procedure (Rio Tinto, 2021b) will be utilised. Closure costs are considered in the following two formats:

- Present Closure Obligation (PCO): indicative of costs associated with closure of the mine given its current footprint; this accounts for the progressive development of a site over time
- Total Projected cost of Closure (TPC): predicts the cost (in current terms) associated with closure at the end of LOM. The TPC includes areas that are not currently approved, but that feature within the LOM plan and that are considered likely to be developed in the future.

The cost estimates consider the following components[1]:

- Pre-closure studies and stakeholder engagement
- Decommissioning (i.e. removal of infrastructure) and final landform construction
- Rehabilitation, biodiversity, and heritage management
- Workforce management (i.e. training costs and redundancy payments)
- Monitoring costs
- Costs associated with the development of the final closure plan
- Costs associated with undertaking a final shutdown of operations
- Allowance for failed rehabilitation or pollution that may necessitate rework of rehabilitation areas
    - Assignment of indirect costs in accordance with Rio Tinto Closure Cost Estimating and Reporting Procedure (2021b)
    - A contingency factor.

10.2. Closure cost estimation methods

Closure cost estimation is based on methods outlined in the Rio Tinto Closure Standard (Rio Tinto, 2021a) and Rio Tinto Closure Cost Estimating and Reporting Procedure (2021b), with the level of accuracy increasing as the site approaches closure. The closure cost estimates are conducted based on the most up-to-date information of mine plans and infrastructure, with the estimate undertaken by specialist external consultants.

The PCO estimate for each site is revised annually to account for incremental mine development during the year. As part of Rio Tinto assurance processes these cost estimates are audited annually by external financial auditors to ensure the processes to generate the provisions are adequate and well maintained. The TPC estimate is revised to capture any changes to the LOM design.

Due to the Winu project being subject to approvals the cost estimates are being updated in alignment with project milestones, in place of annual reviews. Post project execution, the cost estimate reviews will move to annual cycle as outlined above.

[1] Costs associated with decontamination are assessed during MCP development but are costed separately as operating costs.

The key assumptions of the preliminary estimate, based on the Pre Feasibility Study (PFS), include:

- Costs based on inflated 2021-unit rates
- Estimated on the PFS life of mine disturbance areas
- Deconstruction/demolition costs based on engineering designs from 2021. N.B. Engineering design are being finalised; changes will be incorporated into the next MCP update and Feasibility Study cost estimate review
- Infrastructure will be decommissioned, demolished and disposed of on site in appropriate facilities, if not able to be economically salvaged or recycled. The site is sufficiently remote that deconstruction for the purposes of materials salvage and recycling is likely to be cost prohibitive; however, opportunities for salvage and recycling will be sought as the site approaches closure
- Preparation of assets for decommissioning and deconstruction as per Cyanide Management Plan.
- Removal and burial of concrete hardstand and bitumen surfaces
- Removal of foundations up to 1.0 mbgl at closure, except for heavily engineered concrete foundations associated with the wind turbines which will be left in place.
- Preliminary site (PSI) and detailed site (DSI) investigations in line with the WA Contaminated Site Act 2003
- Earthworks and revegetation include:
    - Installation of covers (as required by management plans), profiling and rehabilitation works for all WRLs, TSFs, stockpiles, ponds and borrow pits
    - Rehabilitation of general disturbance areas and haul/access roads
    - Spreading topsoil and seeding
    - Contouring for surface water management.
    - Construction of closure safety bunds and surface water control features
    - Ripping and scarifying compacted surfaces
    - Erosion prevention surface treatments
- Management costs for the closure program of works
- Contractor mobilisation and demobilisation costs
- Social closure costs
- Post closure, pre-relinquishment, costs including site inspections, maintenance, monitoring, reporting and management
- Overheads and profits for contractor related costs
- Contingency.

10.2.1. Exclusions

The costs for all trials and investigations during operations are excluded from the closure cost estimate and will be included in operational budgets.

A separate provision will be established for contaminated sites investigation and management. This is assumed to be an operational expense, with funds rolling over into closure provisions if there is any residual contamination remaining at the time of closure.

The salvage value of infrastructure at closure will not be offset against closure costs. Estimates assume that all process and non-process infrastructure (including roads etc) are removed, rehabilitated, and not retained for other post -mining land uses, unless explicitly stated. This and other assumptions will be reviewed and discussed with relevant stakeholders during the life of mine, with associated changes documented in the future updates of the MCP.

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11. MANAGEMENT OF INFORMATION AND DATA

Rio Tinto operates a comprehensive document management system, with electronic records of all key information and data. The document system, known as the Information Management System (IMS) is linked to other business units within the Rio Tinto group of companies, and processes are in place to ensure that the data contained within this system is appropriately backed up and protected. Each document stored within IMS is given a unique document identifier enabling easy retrieval from the system. IMS will continue to operate following site closure, and all relevant data will be retained according to appropriate data retention requirements.

An audit will be conducted prior to closure to ascertain whether there is any additional information stored in hard copy form at the site. Such data will be scanned and entered to IMS to ensure that it is appropriately retained post-closure.

This MCP will be updated as required to capture and summarise any changes that may be required as the Winu Project moves into construction. Examples of such changes include:

- Updates to the closure knowledge base, including changes to mine plans that influence closure
- Additional engagement with Traditional Owners and other stakeholders
- Development and refinement of completion criteria and performance indicators
- Changes to management measures based on monitoring results
- Changes to proposed monitoring strategies.

12. REVIEWED MINE CLOSURE PLANS

12.1. Revision summary table

Future updates of this MCP will document the summary of changes between MCP revisions.

12.2. Knowledge gaps progress and actions

As discussed in Section 8.2, Table 12-1presents a draft of the currently identified closure knowledge gaps and proposed actions to close. This table will be updated prior to the MDCP submission, to align with the most current state.

Table 12-1: Knowledge Gap Register

Knowledge Gap Register						
No.	**Aspect**	**Knowledge Gap**	**Planned Action**	**Action Owner Title/Role**	**Timing for Completion**	**Progress**
1	Socio-economic	Socio-economic impact of Winu closing on communities not understood.	Compile a socio-economic impact assessment prior to closure.	CSP Manager	10 years prior to closure	Not started
2	Visual amenity	Visual amenity and sense of place requirements of the post-mining landscape not yet fully understood.	Incorporate visual amenity requirements in post-closure landform design and/or sense of place requirements in the closure landscape (as per agreements with Traditional Owners or in relation to specific regulatory closure conditions).	Technical Manager	Ongoing	Commenced
3	Post-closure access	Safe post-closure access routes to Country in general and sites of cultural heritage value not yet determined.	Develop a post-closure access plan with Traditional Owners.	CSP Manager	5 years prior to closure	Not started
4	Artefact repatriation	Artefact repatriation post-closure not yet determined	Develop a post-closure artefact management and repatriation plan with Traditional Owners.	CSP Manager	5 years prior to closure	Not started
5	Cultural heritage	Potential for long-term impacts to cultural heritage sites from areas of geotechnical instability, surface water movement and sediment transport not yet understood.	Determine potential long-term impacts to cultural heritage sites from areas of geotechnical instability, surface water movement and sediment transport.	Technical Manager	Ongoing	Commenced
6	Climate change	The long-term impact of climate change on the current waste landform designs is not known.	Flood and landform evolution modelling of the closure landforms must be continually updated to consider climatic variation and the potential for extreme rainfall events as new climate change predictions become available.	Technical Manager	Ongoing	Commenced
7	Safety closure bunds - location	Final location of safety closure bunds	Consider surface water flows and ponding, final geotechnical conditions of pit wall and potential remobilisation of dunes when determining abandonment bund locations to ensure long-term post-closure stability.	Technical Manager	2032	Commenced

8	Safety closure bunds - construction	Waste material for Safety closure bunds construction	Separate and store competent low erodibility waste material for abandonment bund construction at closure.	Technical Manager	As per mine plan	Not started
9	Physical and geochemical characterisation	Material characterisation test work on mined representative samples of Winu waste rock lithologies	Confirm physical and chemical characteristics derived from drill core samples pre-mining. Confirm physical and chemical characteristics derived from bulk sample materials Ensure highly erodible material are used or away from final WRL batters (i.e. internally in WRLs) to increase landform stability. Continue with on-going sampling and erodibility testing of mineral waste as materials becomes available in the mine plan.	Technical Manager	2028 As per mine plan As per mine plan As per mine plan	Commenced Not started
10	Physical and geochemical waste management	Processes for spatial compliance to plan and reconciliation of waste materials not yet finalised	Develop spatial compliance to plan and reconciliation processes for waste materials	Technical Manager	Prior to operations	Commenced
11	Geochemical characterisation	Extent to which final pit wall exposures of PAF may exist and/or may be a source of AMD into the base of the pit or pit lake (if present) is unknown.	Update pit wall void exposures mapping. Use such information to inform pit lake evolution models.	Technical Manager	As per mine plan	Not started
12	Physical stability of WRL embankments	Erodibility of materials to be used in outer slopes of WRL's not yet finalised	Undertake erosion rates, as determined from rehabilitation monitoring of final landforms, to inform the erosional stable batter geometry parameters	Technical Manager	As per mine plan	Not started
13	Tailings	Closure strategy for the TSF not yet finalised	Determine the optimal closure design for TSF closure through relevant OOM, PFS and FS Closure studies.	Technical Manager	10 years prior to closure	Commenced
14	Landform design	Confirmation of final landform design for permanent landforms	Refine the final landform design of WRL as final landform areas near operational completion.	Technical Manager	As per mine plan	Not started
15	Landform Design	Erosional impacts from wind require further study.	Undertake additional studies to determine optimal landform design and	Environment Manager	Prior to final landform execution	Commenced

			mitigation measures for wind erosion, including potential for geomorphic design.			
16	Closure and rehabilitation materials inventory	Operational closure and rehabilitation materials inventory based on plan vs. actuals	Develop appropriate process (incl cadence) of inventory updates and reviews	Technical Manager	Prior to project execution	Not started
17	Groundwater recovery	Groundwater recovery models uncalibrated.	Update groundwater recovery models to confirm predictions of long term, stabilised hydrogeological conditions.	Technical Manager	Post dewatering and ongoing	Not started
18	Groundwater monitoring	Operational and post-closure groundwater monitoring incomplete	Operational and post-closure groundwater monitoring plans to be developed and maintained.	Technical Manager	Prior to dewatering and ongoing	Commenced
19	Flood modelling	Flood modelling for the final closure landscape not finalised.	Update flood modelling for pits, abandonment bunds and landbridges during the LOM to inform final hydrological closure design.	Technical Manager	Ongoing	Commenced
27	Pit lake(s)	Pit lake impacts on receptors not confirmed.	Verify and update a Source-Pathway-Receptor model to inform potential impact on receptors, including establishment of monitoring program	Technical Manager	Prior to pit dewatering, then ongoing	Conceptual model developed
28	Surface water monitoring	Surface water monitoring network and monitoring program required for closure not yet fully defined	Define the surface water monitoring network and monitoring program for closure.	Technical Manager	5 years prior to closure	Not started
29	Flora and vegetation	Species of ethnobotanical significance and their potential for inclusion in future seed mixes for Site rehabilitation are unknown.	Use flora species recorded in baseline and analogue surveys to inform rehabilitation seed mix(es).	Environment Manager	2 years post project execution (TBC)	Not started
30	Flora and vegetation	Weed management requirements for Closure execution to be developed.	Undertake change management for transition of the operational Weed Management Plan to closure execution context.	Environment Manager	Prior to closure execution	Not started
31	Contaminated sites	Extent of contaminated site remediation required at closure unknown	Maintain a contaminated sites register during operations and implement a contaminated sites assessment at closure in areas where known or suspected contaminating activities have occurred.	Environment Manager	Ongoing	Not started

			Develop specific plans to remediate or manage contaminants to ensure the PMLU is not precluded.			
32	Rehabilitation performance	Factors that influence successful rehabilitation not yet understood	Develop and maintain a Rehabilitation Strategy to plan, execute and monitor rehabilitation, (particularly for sand dominated landforms), including consideration of resilience to predicted climate change impacts.	Environment Manager	First 2 years of operations then ongoing	Not started
33	Rehabilitation Performance	Requirements for Fauna habitat establishment in rehabilitation not yet understood	Include fauna habitat considerations in Rehabilitation Strategy.	Environment Manager	First 2 years of operations then ongoing	Not started
34	Subsoils trials	Suitability of subsoil usage to support topsoil not yet understood	Undertake additional subsoil sample testworks from drill core and bulk samples to determine suitability Update Topsoil Management Plan with outcomes	Environment Manager	First 2 years of operations	Commenced
35	Soil ameliorants	Requirements for soil amelioration not yet understood	Include testwork and trials of soils ameliorants as part of progressive rehabilitation	Environment Manager	First 2 years of operations	Not started
36	Seed species list	Seed mixes and any pre treatment requirements not yet developed	Include seed treatment considerations within early stage rehab trials	Environment Manager	First 2 years of operations	Not started
37	BWT pits - pit lakes	Pit lake evolution models not yet calibrated	Refine source-pathway-receptor model considering pit voids and pit lakes. Pit lake closure strategy to be refined based on the final void pit lake model AND/OR pit lake solute transport model. Update of pit lake risk assessment	Technical Manager	Post pit dewatering commencement	Not started
38	Geotechnical	Final designs for permanent landforms to be finalised	Confirm waste characterisation and designs for permanent landforms meet requirements of the Rio Tinto D3 Group Standard	Technical Manager	Ongoing and finalised at least 2 years prior to final landform execution	Not started
39	Geotechnical	Final placement of closure safety bund not defined	Geotechnical assessment of the pit crest stability required to finalise Zone of Instability and Closure Safety Bund design	Technical Manager	5 years prior to closure	Commenced

40	Geotechnical	Post-closure geotechnical monitoring programs not defined	Develop post-closure geotechnical monitoring program	Technical Manager	5 years prior to closure	Not started
41	Geochemistry	Alternate placement options for HST associated with the 280Mt mineral resource not fully evaluated.	Options assessment for HST associated with the 280Mt mineral resource to be safely relocated into the pit, once the pit is sterilised, to be undertaken in conjunction with NWAC.	Technical Manager	Feasibility Study	Commenced

13. REFERENCES

Advisian. (2022). *Winu Dewatering Strategy and Groundwater Supply Update 2022.* Prepared for Rio Tinto Winu by Advisian.

Agreenco. (2025). *A Wind Erosion Study to Inform Rehabilitation Viability at Rio Tinto's Winu Project Site, Western Australia.*

AMIRA. (2002). *ARD Test Handbook: Project P387A: Prediction and kinetic control of acid mine drainage.* Melbourne: Australian Mineral Institute Research Association.

ANCOLD. (2022). *Guidelines on Risk Assessment.* Australian National Committee on Large Dams (ANCOLD).

Australia and New Zealand Minerals and Energy Council (ANZMEC) and the Minerals Council of Australia (MCA). (2000). *Strategic Framework for Mine Closure.*

Australian Government. (2016, 30 September). *Preventing Acid and Metalliferous Drainage: Leading Practise Sustainability Development Program for the Mining Industry.* Retrieved from Australian Government Industry website: https://www.industry.gov.au/sites/default/files/2019-04/lpsdp-preventing-acid-and-metalliferous-draina

Beard, J.S. (1979). *Vegetation mapping in Western Australia.*

Biota. (2018a). *Asian Renewable Energy Hub Terrestrial Fauna and SRE Fauna Survey.* Perth: Prepared for NW Interconnected Power by Biota Environmental Sciences.

Biota. (2018b). *Asian Renewable Energy Hub Migratory Shorebirds and Waterbirds Study.* Perth: Prepared for Rio Tinto Winu by Biota Ecological Sciences.

Biota. (2020a). *Winu Project Detailed Flora and Vegetation Survey. January 2020.* Perth: Prepared for Rio Tinto Winu by Biota Ecological Sciences.

Biota. (2020b). *Asian Renewable Energy Hub Detailed Fauna Assessment.* Perth: Prepared for Rio Tinto Winu by Biota Ecological Sciences.

Biota. (2021b). *Winu Project Detailed Flora and Vegetation Survey.* Perth: Prepared for Rio Tinto Winu by Biota Environmental Sciences.

Biota. (2022a). *Winu Project Area Extension Targeted Fauna Survey.* Perth: Prepared for Rio Tinto Winu by Biota Ecological Sciences.

Biota. (2022c). *Winu Project Subterranean Fauna Desktop Study and Basic Survey.* Perth: Prepared for Rio Tinto Winu by Biota Biological Sciences.

Biota. (2023a). *Winu Project Wallal Borefield Stygofauna Assessment.* Perth: Prepared for Rio Tinto Winu by Biota Ecological Sciences.

Biota. (2023b). *Winu Project Water Borefield Targeted Fauna Survey.* Perth: Prepared for Rio Tinto Winu by Biota Ecological Sciences.

Biota. (2023c). *Winu Terrestrial Fauna Interim Consolidation Report.* Perth: Prepared for Rio Tinto Winu Pty Limited.

Biota. (2024). *Winu Project Bilby Population Abundance Study.* Perth: Prepared for Rio Tinto Winu by Biota Ecological Sciences.

Biota. (2025a). *Winu Project Texas Borefield Stygofauna Assessment.* Perth: Prepared for Rio Tinto Winu by Biota Ecological Sciences.

Biota. (2025b). *Winu Project Targeted Night Parrot Survey.*

Biota. (2025c). *Winu Project SRE Invertebrate Fauna Assessment.* Perth: Prepared for Rio Tinto Winu by Biota Ecological Sciences.

Biota. (2026a). *Winu Project Vertebrate Fauna Consolidation Report.*

Biota. (2026b). *Winu Project Bilby Abundance Study.*

Biota. (2026c). *Winu Project Rimfire Borefield Stygofauna Assessment.* Perth: Prepared for Rio Tinto Winu by Biota Ecological Sciences.

Bureau of Meterology. (2024a). *Climate statistics for Australian sites.* Retrieved from Bureau of Meterology: http://www.bom.gov.au/climate/averages/tables/ca_wa_names.shtml

Bureau of Meterology. (2024b). *Groundwater Dependent Ecosystem Atlas.* Retrieved from BOM web site: http://www.bom.gov.au/water/groundwater/gde/

DCCEEW. (2021). *Australia's Bioregions.* Canberra: Commonwealth Department of Climate Change, Energy, the Environment and Water.

Department of Energy, Mines, Industry Regulation and Safety (DEMIRS). (2025a). *Statutory Guidelines for Mine Closure Plans. 4th Edition.* Perth: Department of Mines, Industry, Regulation and Safety (DEMIRS).

Department of Energy, Mines, Industry Regulation and Safety (DEMIRS). (2025b). *Guideline for Preparing Mine Closure Plans.* Department of Energy, Mines, Industry Regulation and Safety (DEMIRS).

Department of Industry and Resources. (1997). Safety bund walls around abandoned open pit mines - guideline.

Department of Industry, Science and Resources (DISR). (2016a). *Mine Closure: Leading Practice Sustainable Development Program for the Mining Industry.*

Department of Industry, Science and Resources (DISR). (2016b). *Mine Rehabilitation: Leading Practice Sustainable Development Program for the Mining Industry.*

Department of Industry, Tourism and Resources (DITR). (2006). *Mine Closure and Completion: Leading Practice Sustainable Development Prgram for the Mining Industry.*

Department of Mines, Industry Regulation and Safety (DMIRS) (then DoIR). (1997). *Safety Bund Walls Around Abandoned Open Pit Mines - Guidelines.* Perth: Western Australia Government Press.

Department of Mines, Industry Regulation and Safety (DMIRS) (then DoIR). (1997). *Safety Bund Walls Around Abandoned Open Pit Mines - Guidelines.* Perth: Western Australia Government Press.

Department of Mines, Industry Regulation and Safety (DMIRS). (2020). *Statutory Guidelines for Mining Proposals.* Perth: Government of Western Australia.

Department of Mines, Industry Regulation and Safety (DMIRS). (2021). *Waste rock dumps Guidelines V2.1.* Perth: WA Government Press.

Department of Mines, Industry Regulation and Safety (DMIRS). (2023). *Mine Closure Plan Guidance - How to prepare in accordance with Part I of the 'Statutory Guidelines for Mine Closure Plans'.* Perth: Department of Mines, Industry, Regulation and Safety.

Department of Water (DoW). (2016). *Testing of the artesian aquifers of the West Canning Basin.* Perth: Government of Western Australia.

Department of Water (DoW). (2023). *Water Register.* Accessed on 17/08/2023. Retrieved from https://maps.water.wa.gov.au/#/webmap/register

DMP. (2015). *Guide to Departmental Requirements for the Management and Closure of TSFs.*

DPIRD. (2025). *Soil Landscape Mapping Best Available.* Department of Primary Industries and Regional Development.

EPA. (1986). *WA Environmental Protection Act.* Perth: WA Government Press.

EPA. (2016). *Technical Guidance: Sampling of Short-Range Endemic Invertebrate Fauna.* Perth: Environmental Protection Authority Western Australia.

Garnett, S., Szabo, J., & Dutson, G. (2010). *The Action Plan for Australian Birds.* CSIRO Publishing.

Geoscience Australia. (2014). *Geoscience Australia.* Retrieved from http://www.ga.gov.au

Golder Associates. (2020). *Winu Water Studies Hydrogeological Assessment.* Perth: Prepared for Rio Tinto Exploration.

Golder Associates. (2022a). *H3 Hydrogeological Assessment of the Winu Project.* Perth: Prepared for Rio Tinto by Golder Associates.

Golder Associates. (2022b). *Winu Project: Site Wide Water Balance Update.* Perth: Internal Report for Rio TInto.

Hickman, A., & Bagas, L. (1999). *Geological Evolution of the Palaeoproterozoic Talbot Terrane, and adjacent Meso- and Neoproterozoic successions, Paterson Orogen, Western Australia.* Perth: Western Australia Geological Survey.

HydroGeoLogica. (2024). *Winu pit lake model.*

ICMM. (2019). *Integrated Mine Closure: Good Practice Guide (2nd Edition).* London: International Council on Mining and Metals.

ICMM; UN Environment Programme; PRI. (2020). *Global Industry Standard on Tailings Management (GISTM).*

INAP. (2018). *The Global Acid Rock Drainage Guide.* Toronto: International Network for Acid Prevention.

International Cyanide Management Institute. (2002). International Cyanide Management Code For the Manufacture, Transport, and Use of Cyanide In the Production of Gold. Washington.

Jacobs Group. (2019). *Winu Project Baseline Environmental Assessment.* Perth: Prepared for Rio Tinto Exploration.

Landloch. (2020). *Rehabilitated Waste Landforms at the Winu Project: Strategic Guiance.* Perth: DRAFT Prepared for Rio Tinto Winu.

Landloch. (2021). *Siberia Landform Evolution Modellin: Winu Project 2021a.*

Landloch. (2025). *Siberia Landform Evolutiom Modelling.* Perth.

Landloch. (2025). *Winu Project: Soil Characterisation.* Perth.

McCullough, C., Marchand, G., & Jörg, U. (2013). Mine closure of pit lakes as terminal sinks: best available practice when options are limited? *Mine Water and the Environment*, 32(4), 302-313.

Mine Lake Consulting (MLC). (2021). *Winu Mine Pit Lake Preliminary Environmental Risk Assessment.* Perth: Internal Report for Rio Tinto from Mine Lakes Consulting.

Mine Lake Consulting (MLC). (2025). *Winu Mine Pit Lake Environmental Risk Assessment 2024 Update.*

O'Kane Consultants. (2020). *Winu Copper Project - Conceptual Cover Systems Modelling.* Perth: Prepared for Rio Tinto Winu.

O'Kane Consultants. (2024). *Winu Tailings Storage Facility High Sulfur Tailings Cover System.* Brisbane.

Pavey, C., CEM, N., Cooper, J., Cole, J., & McDonald, P. (2011). Habitat use, population dynamics and species identification of mulgara, Dasycercus Blythi and D. cristicauda, in a zone of sympatry in Central Australia. *Australian Journal of Zoology*, pp. 156-169.

Red Earth Engineering. (2024). *J24050-Winu ASS deskstudy Rev1.*

Rio Tinto. (2017). *E13 – Chemically reactive mineral waste management standard.*

Rio Tinto. (2019). *Risk Management Standard.* London: Rio Tinto Group.

Rio Tinto. (2021a). *Closure Standard.* London: Rio TInto.

Rio Tinto. (2021b). *Closure Cost Estimating and Reporting Procedure.*

Rio Tinto. (2022a). *Community and Social Performance Standard.* London: Rio Tinto.

Rio Tinto. (2022b). *D05. Management of tailings and water storage facilities group procedure.* London: Rio Tinto Group.

Rio Tinto. (2024b). *Winu Waste Characterisation - Upper (Oxidised and Overburden) Zone.*

Rio Tinto. (2024c). *Winu Waste Characterisation - Secondary Sulfide (Enriched) Zone.*

Rio Tinto. (2024d). *Winu Waste Characterisation - Primary Sulfide (Hypogene) Zone.*

Rio Tinto. (2025). *Winu AMD Strategy and Management Plan V4.* Perth.

Rio Tinto. (2025a). *Winu Project Section 38 Referral Supporting Document.* Perth: Rio Tinto.

Rio Tinto. (2025b). *Winu Ground Distubrance & Rehabilitation Work Practice.*

Rio Tinto. (2026). *Winu Exploration Rehabilitation Report.*

SLR Consulting Australia. (2025). *Landforms Assessment: Winu Project.* Report prepared for Rio Tinto Winu Pty Ltd.

Van Leeuwen, S. (2002). *Biological Survey of the South-western Little Sandy Desert. National Reserve System Project N706.* Karratha: Department of Conservation and Land Management.

Van Vreeswyk, A., Payne, A., Leighton, K., & Hennig, P. (2004). *Technical Bulletin No 92: An inventory and condition survey of the Pilbara region, Western Australia.* Perth: Department of Agriculture.

Western Botanical. (2025). *Consolidated etailed Flora and Vegetation Assessment of the Winu Project.* Perth: Prepared for Rio Tinto Winu.

Worley. (2024a). *Winu Closure: Surface Water Management Plan.*

Worley. (2024b, August). H3 Hydrogeological Assessment - Winu Project Area.

Worley. (2025). *Rimfire H3 Assessment 2025 Update.*

Worley. (2025). *Winu Project – Percival Palaeovalley Assessment.*

WWL. (2025a). *Winu TSF Closure Design 10Mtpa Report 127-029-Rev 0.* Perth: Prepared for Rio Tinto.

WWL. (2025b). *PRELIMINARY WINU TSF DAM BREAK STUDY - ALTERNATIVE 5H.* Prepared for Rio Tinto.

Young, R., Manero, A., Miller, B., Kragt, M., Standish, R., Jasper, D., & Boggs, G. (2019). *A framework for developing mine-site completion criteria in Western.* Perth, Western Australia: The Western Australian Biodiversity Institute.

APPENDIX A : LEGAL OBLIGATIONS REGISTER

Legal obligations relating to closure of the Winu Project are provided in Table 13-1.

Table 13-1: Current Closure Obligations and Commitments

Relevant Tenement and Regulatory Licence Conditions		
Tenement	**Condition No.**	**Closure conditions**
M45/1288		N/A (not yet granted)
L45/476	3-1	All topsoil that may be removed ahead of pipelaying operations to be stockpiled for replacement in accordance with the directions of the Environmental Officer, DMIRS.
L45/476	8-1	All disturbances to the surface of the land made because of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, DMIRS. Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMIRS.
L45/476	9-1	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the licence area prior to or at the termination of exploration program.
L45/476	11-1	Unless the written approval of the Environmental Officer, Department of Mines, Industry Regulation and Safety is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.
L45/491	5-1	All topsoil that may be removed ahead of pipelaying operations to be stockpiled for replacement in accordance with the directions of the Environmental Officer, DMIRS.
L45/491	12-1	All disturbances to the surface of the land made because of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, DMIRS. Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMIRS.
L45/491	13-1	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the licence prior to or at the termination of exploration program.
L45/494	4-1	All topsoil that may be removed ahead of pipelaying operations to be stockpiled for replacement in accordance with the directions of the Environmental Officer, DMIRS.
L45/494	9-1	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, DMIRS. Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMIRS.
L45/494	10-1	All waste materials, rubbish, plastic samples bags, abandoned equipment and temporary buildings being removed from the licence area prior to or at the termination of exploration program.

L45/494	12-1	Unless the written approval of the Environmental Officer, Department of Mines, Industry Regulation and Safety is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.
L45/548	7-1	All topsoil that may be removed ahead of pipelaying operations to be stockpiled for replacement in accordance with the directions of Environmental Officer, DMIRS.
L45/548	15-1	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, DMIRS. Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMIRS.
L45/548	16-1	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the licence area prior to or at the termination of exploration program.
L45/549	7-1	All topsoil that may be removed ahead of pipelaying operations to be stockpiled for replacement in accordance with the directions of the Environmental Officer, DMIRS.
L45/549	14-1	The area of the miscellaneous licence to be reduced as soon as practicable after construction, to a minimum for the safe maintenance and operation of the licence purposes.
L45/549	15-1	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, DMIRS. Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMIRS.
L45/549	16-1	All waste materials, rubbish, plastic samples bags, abandoned equipment and temporary buildings being removed from the licence area prior to or at the termination of exploration program.
L45/549	21-1	Unless the written approval of the Environmental Officer, Department of Mines, Industry Regulation and Safety is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.
L45/550	5-1	All topsoil that may be removed ahead of pipelaying operations to be stockpiled for replacement in accordance with the directions of the Environmental Officer, DMIRS.
L45/550	12-1	The area of the miscellaneous licence to be reduced as soon as practicable after construction, to a minimum for the safe maintenance and operation of the licence purposes.
L45/550	13-1	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, DMIRS. Backfilling and rehabilitation being

		required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMIRS.
L45/550	14-1	All waste materials, rubbish, plastic bag samples, abandoned equipment and temporary buildings being removed from the licenced area prior to or at the termination of the exploration program.
L45/550	17-1	Unless the written approval of the Environmental Officer, Department of Mines, Industry Regulation and Safety is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.
L45/551	5-1	All topsoil that may be removed ahead of pipelaying operations to be stockpiled for replacement in accordance with the directions of the Environmental Officer, DMIRS.
L45/551	12-1	The area of the miscellaneous licence to be reduced as soon as practicable after construction, to a minimum for the safe maintenance and operation of the licence purposes.
L45/551	13-1	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, DMIRS. Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMIRS.
L45/551	14-1	All waste materials, rubbish, plastic bag samples, abandoned equipment and temporary buildings being removed from the licenced area prior to or at the termination of the exploration program.
L45/551	17-1	Unless the written approval of the Environmental Officer, Department of Mines, Industry Regulation and Safety is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.
L45/552	5-1	All topsoil that may be removed ahead of pipelaying operations to be stockpiled for replacement in accordance with the directions of the Environmental Officer, DMIRS.
L45/552	12-1	The area of the miscellaneous licence to be reduced as soon as practicable after construction, to a minimum for the safe maintenance and operation of the licence purposes.
L45/552	13-1	All disturbances to the surface of the land made as a result of exploration, including costeans, drill pads, grid lines and access tracks, being backfilled and rehabilitated to the satisfaction of the Environmental Officer, DMIRS. Backfilling and rehabilitation being required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DMIRS.
L45/552	14-1	All waste materials, rubbish, plastic sample bags, abandoned equipment and temporary buildings being removed from the licence area prior to the termination of the exploration program.

L45/552	17-1	Unless the written approval of the Environmental Officer, Department of Mines, Industry Regulation and Safety is first obtained, the use of drilling rigs, scrapers, graders, bulldozers, backhoes or other mechanised equipment for surface disturbance or the excavation of costeans is prohibited. Following approval, all topsoil being removed ahead of mining operations and separately stockpiled for replacement after backfilling and/or completion of operations.
L45/559		N/A (not yet granted)
L45/623		NIL
L45/722, 723, 725, 755 & L45/857		N/A (not yet granted)
Mining Proposal		
Condition No	**Date**	**Closure Conditions**
n/a	n/a	Mining Proposal not yet issued
Ministerial Statement		
Condition No	**Date**	**Closure Conditions**
n/a	n/a	Ministerial Statement not yet issued
EP Act Part V Works Approval		
Condition		**Aspect related to closure**
n/a		Works Approval not yet submitted
EP Act Part V Licence - WWTP		
Registration No	**Condition No**	**Closure Conditions**
R2522/2021/1	n/a	No closure related conditions
Licence to Take Water (5C) - GWL		
Licence No	**Condition No**	**Closure Conditions**
GWL2201165(6)	n/a	No closure related conditions
Legally binding commitments and promises		
Document name		**Closure commitment**
The Heritage and Land Access Agreement between Rio Tinto, the Nyangumarta People and Yamatji Marlpa Aboriginal Corporation		Ongoing exchange of information regarding Rio Tinto activities on Nyangumarta Country including rehabilitation.
The Land Access Agreement and Mineral Exploration Agreement between Jamukurna Yapalikurnu Aboriginal Corporation (JYAC) and Rio Tinto		Ongoing exchange of information regarding Rio Tinto activities on Martu Country, including rehabilitation.
Mines Rehabilitation Fund Act 2012		Ongoing updates and reporting of Mines Rehabilitation Fund Act obligations
Non-legally binding commitments and promises		
Document name		**Closure commitment**
Stakeholder communications log		Leaseholders – Ongoing consultation regarding site closure and rehabilitation.

APPENDIX B : CULTURAL HERITAGE SURVEYS

Table 13-2: Summary of Archaeological and Ethnographic Heritage Surveys Conducted to Date Across the Project Area as at November 2025

Cultural Heritage Surveys	Survey Type	Year	Level of Assessment	Surveys Completed
Nyangumarta	Archaeological (Gavin Jackson Cultural Resource Management)	2017	Site Avoidance	Report of an Aboriginal Archaeological and Ethnographic work Program Clearance Survey of the Paterson West Project (E45/4833) on the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2018		Report of an Aboriginal Archaeological and Ethnographic Work Program Clearance Survey of the Proposed Winu Drilling Program (E45/4588 and E45/4212) on the Nyangumarta Native Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2018		Report of an Aboriginal Archaeological and Ethnographic Work Program Clearance Survey of the Proposed Winu Drilling Program (E45/4833, E45/5118, E45/5120, E45/5121, E45/5124 and E45/5200) on the Nyangumarta People Native Determination Area, Great Sandy Desert, Pilbara Western Australia
		2018		Report of an Aboriginal Archaeological and Ethnographic Work Program Clearance Survey of the Proposed Winu Camp & Drilling Project (E45/4833, E45/5118 & E45/5214) on the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2019		Report of an Aboriginal Archaeological Work Program Clearance Survey of the proposed Winu and Paterson Drilling Program and Ancillary Areas (RTX tenements E45/4833, E45/5119, E45/5120, E45/04833, E45/05118 and L45/00491, Northern Reserves Pty Ltd tenement E45/05045, and Newcrest Mining Limited tenement L45/00110) on the Nyangumarta People Native Title Determination Area and an Unclaimed Area, Great Sandy Desert, Pilbara, Western Australia
		2019		Report of an Aboriginal Archaeological Work Program Clearance Survey of the Proposed Winu and Paterson Drilling Program and Ancillary Areas (E45/4833, E45/5118, E45/5120, E45/5124, E45/5200 and L45/491) on the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia

		2019		Report of an Aboriginal Archaeological Survey of the Proposed Winu and Paterson Drilling and Road Upgrade programme and Ancillary Areas (E45/4833, E45/5118, E45/5124, E45/5200, E45/4832, E45/5167, E45/5168, E45/4212, E45/2876, L45/521, L45/491 and L45/493) on the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2019		Report of an Archaeological Work Program Clearance Survey of the Proposed Winu Dune Drilling Program (E45/4833) on the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2020		Report of an Aboriginal Archaeological Report Site Avoidance Survey of proposed works within the Tailings Storage Facility, Reinjection Bores, Process Plant, Waste Rock Landform, North of Winu Pit, South of Winu Pit, Mine Area Borrow Pits, Mine Access Road, Camp, Comms Tower and Access, Explosives facility, Topsoil stockpiles, Camp and mine access road alternative, Reinjection access road, Mine Access Road Alternative, Future TSF Locations Work Area at RTX Winu Project Area (E45/4833, E45/5118, E45/560, and L45/552) within the Nyangumarta People Native Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2020		Report of an Aboriginal archaeological Site Avoidance Survey of proposed works within the Process Plant, Tailings Storage Facilities, Waste Rock Landform, Cam (incl. Access Road and Comms Tower), Borrow Pits, North of Winu Pit, South of Winu Pit, Reinjection Bores (Incl. Tracks), Explosives Facility (Incl. Access Road) and Future TSF Locations Work Areas (E45/4833, E45/5118, L45/560 and L45/552) within the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2020		Report of an Aboriginal Archaeological Site Avoidance Survey of proposed additional road areas, access and borrow pits within the Winu Work Area (E45/5200, E45/5124, L45/0491, L45/0493, L45/548, L45/549, L45/0550, L45/0551 and L45/0552) within the Nyangumarta People native title Determination Area, Great Sandy Desert, Pilbara, Western Australia. Trip 1
		2020		Report of an Aboriginal Archaeological Site Avoidance Survey of proposed additional road areas, access and borrow pits within the Winu Work Area (E45/5200, E45/5124, L45/0491, L45/0493, L45/548, L45/549, L45/0550, L45/0551 and L45/0552) within the Nyangumarta People native title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2020		Report of an Aboriginal archaeological Work Program Clearance Survey of proposed drilling activities, access tracks and camp/laydown locations within the Paterson North, Iron Hill and Winu Orbit Work Areas (E45/5121, E45/5241, E45/5349, E45/5454, E45/5119, E45/5120, E45/4832, E45/5118, E45/5124, E45/5200, E45/4833 and L45/0491), within the Nyangumarta People native title Determination Area, Great Sandy Desert, Pilbara, Western Australia

		2021		Report of an Aboriginal archaeological Site Avoidance survey of proposed works within the process plant, TSF, WRD, camp (incl access road and comms tower), bps, north of Winu pit, south of Winu pit, reinjection bores(incl tracks), explosives facility (incl access road) and future TSF location work areas (E45/4833, E45/5118, L45/560 and L45/552) at Rio Tinto Explorations Winu Project are, within the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, WA
		2021		Report of an Aboriginal archaeological Work Program Clearance Survey of proposed access tracks, drilling activities, camps and laydowns at Rio Tinto Exploration's Paterson West and Paterson North Project Areas (E45/4832, E45/4833, E45/5118, E45/5119, E45/5120, E45/5121, E45/5124, E45/5168, E45/5200, E45/5241, E45/5349, L45/563 and E45/5045), within the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2022		Report of an Aboriginal archaeological Site Avoidance Survey of areas for proposed drilling activities and tracks (E45/4833, M45/1288, L45/563 and L45/0552) at Rio Tinto Exploration's Winu Project Area, within the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2022		Report of an Aboriginal Archaeological Site Avoidance survey of areas associated with mine related infrastructure planning in the Rio Tinto Exploration's Winu Project Area (E45/4833, E45/5118, E45/5125, L/45/0560, L45/0552 and M45/1288), within the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2023		Report of an Aboriginal Archaeological Site Avoidance Survey of proposed work areas related to Rio Tinto Exploration's Winu Project (tenements E45/4833, E45/4832, E45/5118, L45/552, M45/1288 and L45/0560), within the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2023		Report of an Aboriginal archaeological Site Avoidance Survey of proposed works within Rio Tinto Exploration's (RTX) Winu Project Area and the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2023		Report of an Aboriginal Archaeological Site Avoidance Survey of proposed work areas related to Rio Tinto Copper's (RTC) Winu Project (tenements E45/4833, E45/5118, L45/0552, L45/0623), within the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
	Archaeological	2022	Site Avoidance	Final Report regarding an archaeological heritage survey for Rio Tinto Exploration's Winu Project areas undertaken by Nyangumarta participants and Yamatji Marlpa Aboriginal Corporation

	(Yamatji Marlpa Aboriginal Corporation)	2024	Site Avoidance	Report regarding the archaeological site avoidance heritage survey of Rio Tinto's Winu and Winu Road Access project areas undertaken by Nyangumarta representatives and Yamatji Marlpa Aboriginal Corporation and Big Island Research
	Ethnographic (Nyaparu Consulting)	2017	Site Avoidance	Report of an Aboriginal Archaeological and Ethnographic work Program clearance of the Paterson West Project (E45/4833) on the Nyangumarta People Native Title Determination, the Great Sandy Desert, Pilbara Western Australia
	Ethnographic (Nyaparu Consulting)	2018	Site Avoidance	Report of an Aboriginal Archaeological and Ethnographic work program clearance survey of the proposed Winu Drilling Program (E45/4833 and E45/4212) on the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara Western Australia
		2018		Report of an Aboriginal Archaeological and Ethnographic Work Program clearance survey of the proposed Winu Drilling program (E45/4833, E45/5118, E45/5120, E45/5121, E45/5124 and E45/5200) on the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara Western Australia
	Ethnographic (Stevens Heritage Services)	2018	Site Avoidance	Report of an Aboriginal and Ethnographic work Program work Program clearance survey of the proposed Winu camp and Drilling Project (E45/4833, E45/5118, & E45/5214) on the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
		2019		Report of an Ethnographic Site Avoidance Heritage Survey at Winu Project Orbit and Paterson Regional Target, Located in the East Pilbara Region of Western Australia
	Ethnographic (Yamatji Marlpa Aboriginal Corporation)	2019	Site Avoidance	Final report regarding the ethnographic work program clearance survey of Rio Tinto Exploration's Paterson West (Scope RTX 2019_06 and RTX 2019_08) and Winu (Scope RTX 2019_03, RTX 2019_05, and RTX 2019_09) project areas undertaken by Nyangumarta Warrarn Native Title Group representatives and Yamatji Marlpa Aboriginal Corporation
		2023	Site Avoidance	Ethnographic Site Avoidance Heritage Survey within Wallal E45/05560, E45/05212, L45/00549, L45/00551, L45/00550 and Three Bears E45/05241, E45/05349for Rio Tinto Exploration and the Nyangumarta Warrarn Native Title Holders, Western Australia
	Ethnographic (Stevens Heritage Services)	2019	Site Avoidance	Report Regarding the Winu and Paterson Ethnographic Site Avoidance Heritage Survey in the East Pilbara Region of Western Australia
		2019		Report of an Ethnographic Site Avoidance Heritage Survey at Winu Project Orbit and Paterson Regional Target, Located in the East Pilbara Region of Western Australia
		2020		Report of a Nyangumarta Ethnographic Work Program Clearance and Work Area Clearance Heritage Survey in Relation to Rio Tinto Explorations RTX_2020_01 Winu Project Drilling Program in the East Pilbara Region of Western Australia

		2020		Report of a Nyangumarta Ethnographic Site Avoidance Heritage Survey in Relation to Rio Tinto Exploration's RTX_2020_02_Part A Winu Project Access Road, in the East Pilbara Region of Western Australia
		2020		Report of a Nyangumarta Ethnographic Work Program Clearance Heritage Survey in Relation to Rio Tinto Exploration's RTX_2020_04 Drilling Programs in the Paterson Region; including Winu Orbit and Iron Hill, in the East Pilbara Region of Western Australia
		2021		Report of a Nyangumarta Ethnographic Site Avoidance Heritage Survey in Relation to Rio Tinto Exploration's Winu Project in the East Pilbara Region of Western Australia. RTX 2020_02 (Part B Ethno) April 2021
		2021		Report of a Nyangumarta Ethnographic Site Avoidance Heritage Survey in relation to Rio Tinto's Winu Project in the East Pilbara Region of WA. RTX_2020_02_V5 Ethno, September 2021
		2021		Report of a Nyangumarta Ethnographic Work Program Clearance Heritage Survey for the RTX_2021_06 scope at Rio Tinto Exploration's Paterson and Winu Project Areas in the East Pilbara of Western Australia
	Ethnographic (Yamatji Marlpa Aboriginal Corporation)	2022	Site Avoidance	Report for a Nyangumarta Ethnographic Site Avoidance Survey within Rio Tinto's Winu Project Area, Great Sandy Desert, Western Australia
		2022		Site Avoidance Ethnographic Survey Final Report for NWAC, YMAC and Rio Tinto Exploration on Nyangumarta Country
	Ethnographic (Nyangumarta Warrarn Aboriginal Corporation)	2022	Site Avoidance	Report for a Nyangumarta Ethnographic Site Avoidance Survey within Rio Tinto's Winu Project Area, Great Sandy Desert, Western Australia
	Ethnographic (B Rochelle consulting)	2023	Site Avoidance	Final report regarding the regarding the ethnographic work program clearance heritage survey of Rio Tinto Exploration's Winu West survey area Great Sandy Desert, Western Australia
	Ethnographic (B Rochelle consulting)	2024	Site Avoidance	Final report regarding the regarding the ethnographic site avoidance heritage survey of Rio Tinto Exploration's Winu survey area, Great Sandy Desert, Western Australia.
	Ethnographic	2024	Site Avoidance	Final Report of an Aboriginal ethnographic site avoidance heritage survey to inform planning for Rio Tinto Winu mine infrastructure and resource development (tenements: L45/548,

	(R Vokes consulting)			L45/549, L45/550, L45/551, L45/552 E45/5212, E45/5124, E45/5560, E45/04833, L45/623 and E45/05118) on the Nyangumarta People Native Title Determination Area, Great Sandy Desert, Pilbara, Western Australia
Martu	[redacted]			

APPENDIX C : SURFACE WATER MANAGEMENT PLAN (WORLEY 2024)

APPENDIX D : STAKEHOLDER ENGAGEMENT REGISTER

Table 13-3: Closure Specific Stakeholder Engagement Register

Stakeholder Group	Date	Issue Raised	Proponent Response *(Current August 2025)*
NWAC	9-11 Oct 2023	Outer WRL surfaces may be too steep at 18°, based on experience of NWAC technical experts re: Telfer.	Current WRL design modified to 15° inter-batters, with 20m wide berms.
		TSF HST cell could result in AMD seepage longer term where the liner integrity is compromised.	Groundwater recovery modelling post-closure is expected to result in a long-term groundwater gradient towards the pit void. Hence any seepage into the groundwater would terminate in the pit lake groundwater sink. The Proponent to undertake alternative storage options assessment of HST.
		How to prevent unauthorised access post-closure?	Proponent to collaborate with NWAC regarding post-closure road access requirements and other measures to minimise unauthorised access.
		The impacts of the local climate and inevitable establishment of vegetation will have on the efficacy of the HST cover system.	The Proponent has completed additional cover design modelling, and the recommended cover thickness is sufficient to maintain saturation. The Proponent acknowledges that there may be some natural vegetation establishment, which is not expected to desaturate the HST, but the closure concept would be to not encourage that.
		The decision not to revegetate TSF slopes.	TSF operational design includes rock slopes for closure at 1:6 gradient. The detailed Closure Design will be provided to NWAC which includes design details on both cover and slopes designs, materials and vegetation.
		The single 2m high bund is not an acceptable approach to preventing access to the closed pit area.	The Proponent has produced a Closure Safety Bund memo that articulates the rationale behind the designed closure measures.
NWAC	15-19 April 2024	Clarity if catchment ponds will be left in place or rehabilitated at closure.	The Proponent confirmed catchment ponds will be rehabilitated at closure.
DEMIRS	16 Nov 2023	• How will the processing circuit be set up to generate separate HST and LST streams. • Backfilling of pit void versus sterilisation of potential future economic resources.	Will provide processing plant overview information to DMPE for review. The Proponent has produced a memo on ex-pit vs in-pit tailings management options and decision

Stakeholder Group	Date	Issue Raised	Proponent Response *(Current August 2025)*
NWAC	1 – 2 April 2025	Subaqueous disposal of the HST in the pit void should be adopted as the final walk-away solution for closure.	The Proponent is seeking consent from Nyangumarta and approvals from regulatory bodies, in respect of a project scope limited to 280 million tonnes (Mt) of mineral resources of 741 Mt (as publicly reported in 2024). As a result, disposing of the High Sulfide Tailings (HST) in the pit void is not a viable solution for closure of the 280Mt project (which is the project currently under consideration). This is due to risks associated with mineral stewardship and the potential sterilisation of the remaining economic mineral resource. The Proponent will carry out work during the Feasibility Study (FS) phase to see if a detailed design can be developed that facilitates the future potential for HST associated with the 280Mt mineral resource to go back into the pit. This work will be shared with NWAC.
		Require more detail on how drainage and erosional stability will be managed on the final LST surface after closure.	Will be further detailed as part of the FS. Further characterisation and associated design updates will be completed when additional samples (including bulk samples) of waste materials are available for test work.
			An allowance has been made for up to a 300mm layer of topsoil on top of the LST to facilitate vegetation. This topsoil thickness will be reviewed and validated during more detailed designs and field trials during operations. Cross slope attenuation bunds have been incorporated to slow the movement of surface water. Preliminary characterisation of the physical and chemical properties of waste materials has been completed and used to inform the preliminary TSF closure design and landform erosion modelling.
		A 3m high closure safety bund should be adopted, and the bund is bolstered using oversize rock wherever possible	Following the recommendation from NWAC, the closure safety bund has been redesigned to a height of 3m, constructed with appropriately durable rock, including available oversize rock that can be practically placed.
		The geochemistry model for the pit lake should be run for a longer timeframe, until salinity and other analytes plateau	Beyond 300 years there can be significant uncertainty with predictions due to impacts such as climate and environmental changes and hence it would be misleading to use absolute predictive values instead of the trend model or a more qualitative or narrative analysis. A conscious decision

Stakeholder Group	Date	Issue Raised	Proponent Response *(Current August 2025)*
			was made to make the period of evaluation 300 years, in consultation with the pit lake external reviewer, Mine Lakes Consulting. This follows the best practice guidance described in APEC (2018).
		Consider the possibility of regular, significantly larger events than the current 1:100-year rain events in its Surface Water Management Planning	For closure, 20 hr PMF, 24 hr 1:5000 AEP and 24 hr 1:1000 AEP storm events have been modelled. Modelling will be updated prior to final closure design execution and will use the latest climate modelling data.
		Further information required on the waste rock lithotype classifications and quantities	Preliminary landform evolution modelling has been completed, with associated waste material balances (supply vs demand) incorporated within mine schedules, as a standard practice. Additional test work will be completed once bulk samples are available and inventories and schedules updated accordingly. This has been included in the Closure Risk Assessment, with associated actions included in the Forward Work Plan.
NWAC	23 July 2025	Further discussion on management of HST at final closure (post extraction of all economically viable mineralisation)	Summary of Discussion/Agreed Outcomes: • The Proponent will undertake a conceptual study aimed at determining the feasibility of in-pit disposal of HST, post the extraction of all economically viable mineralisation. • The intention to undertake this study will be captured in the stakeholder engagement and closure implementation sections within the MCP. • This study is intended to be underpinned by the principles of co-design. • The Proponent will ensure that NWAC has ongoing involvement in the study, particularly as the study progresses through critical project gateways. • This approach will ensure greater transparency and a more immediate identification of any potential issues or concerns that NWAC or Rio Tinto may have during the study. • The Proponent has committed to investigating both closure options to a point where both options have been thoroughly explored and run to ground. • Following the completion of the in-pit disposal study, the Proponent and NWAC will undertake a multi-criteria

Stakeholder Group	Date	Issue Raised	Proponent Response *(Current August 2025)*
			analysis of both closure options (subaqueous HST cell disposal and in-pit disposal of HST) to determine which option is most suitable for the Winu Project. • The confirmed closure option to be implemented after the extraction of all economically viable mineralisation will be detailed within the Mine Closure Plan to be submitted with the Mining Proposal to DMP prior to mining. **Action Items:** • As study planning progresses, Rio Tinto to propose critical project gateways that will trigger NWAC involvement e.g. scoping, lit review, preliminary decision decisions etc. • Rio Tinto to propose the type of engagements through the feasibility study process that would add the most value to the study. • NWAC to provide feedback and on Rio Tinto's proposals and agree to a study framework.
NWAC	27 August 2025	Additional written feedback on the Closure safety bund to not include dunes as part of the bund design and to not revegetate the bund to preserve the visual delineation. Additional considerations to be addressed: 1) Flood depth and velocity under major flood events up to and including the PMF. 2) Surface water depth and velocity for the local drainage network under major rainfall events up to and including the PMP. This should consider the requirement to divert drainage around and/or convey it through the bund, and the potential for sour erosion of the bund. 3)The potential impact of remobilised dune sands and dunes on the long-term effectiveness of the bund.	The Mine Closure Plan has been updated to explicitly not include dunes as part of the bund design and to not rehabilitate the bund. The additional considerations will be incorporated into the forward work plan, with any resultant design changes discussed, agreed and documented in the MCP.

APPENDIX E : MINING LAKE CONSULTING REPORT

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APPENDIX F : VISUAL AMENITY REPORT

APPENDIX G : WINU TSF CLOSURE DESIGN REPORT (WWL 2025)