Copi Mineral Sands Project

Application Number: **02515** Commencement Date: **22/07/2024** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Copi Mineral Sands Project

1.1.2 Project industry type *

Mining

1.1.3 Project industry sub-type

Mineral sand mine

1.1.4 Estimated start date *

01/07/2026

1.1.4 Estimated end date *

30/06/2051

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

The Project would generally include the following components (see att 1_Project Description).

- Mining using a combination of traditional dry (excavate, load and haul) and wet (dredging) mining techniques to extract up to approximately 46.8 million tonnes per annum (Mtpa) of overburden, 44.1Mtpa of interburden and 27.1Mtpa of ore.
- On-site processing to produce up to 475,000tpa of mine products.
- The Extraction Area comprises an area approximately 1,983ha
- The Disturbance Area for the Site consists of approximately 3,798ha of Mine Site and 219ha of the Site Access Road and realigned Anabranch Mail Road.
- Transportation of mine products in sealed containers from the Mine Site to the existing Broken Hill Rail Facility.
- Progressive establishment of a final landform with re-established ecosystem function.
- Construction and use of ancillary infrastructure.
- The life of the Project will be 26 years, comprising an initial 3-year construction period, followed by 18 years of mining operations and a further period of 5 years of rehabilitation.

The Project would initially consist of following activities to deliver the proposed action

- Initial vegetation clearing for site establishment and construction
- Infrastructure development

The following activities would then occur progressively along the mine path

- Vegetation clearing for mining
- Soil stripping and management.
- Dry mining (removal of overburden and interburden)
- Dredge Mining (extraction of interburden and ore from within the water table)
- Reject management and placement into Off Path Storage Facility
- Progressive rehabilitation.

During operation, the Project would also include the following activities to deliver the proposed action.

- Transport of material to the Rare Earth Concentrate Plant.
- Transport of mine products to Broken Hill Rail Facility
- Waste and Water Management
- Mine closure and rehabilitation

The proposed activities required to deliver the proposed actions for the Project will result in the following impact.

- Project Area impact area: 19,725ha
- Mine Site Limit of Disturbance area: 3,798ha
- Linear Corridor Disturbance area: 219ha
- Total Limit of Disturbance area: 4,020ha

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

No

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

The Project requires the following State and Commonwealth legislation considerations.

Development Consent

As a mining mineral mining operation, the Project is classified as “State Significant Development” under Clause 5(1)(a) of Schedule 1 of the NSW State Environmental Planning Policy (SEPP) (Planning Systems) 2021. The Development Application will therefore require assessment under Division 4.7 of Part 4 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act).

In accordance with Section 4.5(a) of the EP&A Act Environmental Planning and Assessment Act 1979, the consent authority for the Project will be the Independent Planning Commission should one of the following criteria, identified in Section 2.7 of the Planning Systems SEPP, be met.

- Wentworth Shire Council provides a submission objecting to the Project.
- There are more than 50 submissions objecting to the Project.
- The Applicant has made a reportable political donation.

If these thresholds are not met, the determining authority would be the Minister for Planning and Public Spaces. In practice, it is understood that the Minister has delegated their authority to determine such applications to a senior officer of the Department of Planning and Environment.

Mine Site and Site Access Road

The Mine Site is located wholly on land zoned under the Wentworth Local Environmental Plan 2011 (Wentworth LEP) as RU1 – Primary Production. Open Cut mining is permissible with consent in this zone. These objectives of the zone have been considered during the design and planning process of the Project.

See att 12_Land Zoning.jpg

Anabranch Mail Road and Associated Intersections

Anabranch Mail Road is an existing local road that would be realigned and upgraded as a result of the Project (see att_20_Intersection plans). The road between the intersection of the Site Access Road and the Silver City Highway occurs on land zoned as follows.

- RU1 – Primary Production.
- SP2 – Infrastructure

Roads are permitted without consent within Zone RU1 – Primary Production and Zone SP2 - Infrastructure.

Broken Hill Rail Facility

The Rail Facility is located wholly within the Broken Hill Local Government Area (LGA). Under the Broken Hill Local Environmental Plan 2013 (Broken Hill LEP), the land on which the Rail Facility is located is designated as:

- Zone SP2 – Infrastructure (Rail Infrastructure Facility); and
- Zone SP1 – Special Activities (Mining)

Development for the purpose of a Rail Facility is permissible under each of these zones.

The proposed works to be undertaken at the intersections of Patton and Comstock Streets and Comstock and Eyre Streets are on land zoned:

- R1 – General Residential; and
- B4 – Mixed Use.

Roads are permitted without consent in both these zones.

Other Approvals

The following presents the approvals that would otherwise be are required for the Project but and cannot be refused under Section 4.42 of the EP&A Act.

- A Mining Lease under the Mining Act 1992.

RZ Resources would require a new Mining Lease, to permit mining of minerals. Mining Lease Application MLA646 has been submitted to cover the area of proposed mining operations.

- An Environment Protection Licence under Chapter 3 of the Protection of the Environment Operations Act 1997.

The Project would disturb more than 4ha for the purposes of mining of minerals. As a result, the Applicant would apply for an Environmental Protection License (EPL) for Project.

A Permit under Section 138 of the Roads Act 1993. Permits (and an associated Works Authority Deed where relevant) will be required from:

- Transport for NSW for works within the Silver City Highway road reserve;
- Broken Hill City Council for works within the Holten Drive, Eyre Street, Comstock Street and Patton Street road reserves;
- Wentworth Shire Council for works within the Anabranch Mail Road road reserve.

The following presents the approvals would otherwise be required but are not required for the Project under Section 4.41(1) of the EP&A Act.

- A water use approval under section 89, a water management work approval under section 90 or an activity approval (apart from an aquifer interference approval) under section 91 of the *Water Management Act 2000.*
- An Aboriginal Heritage Impact Permit under section 90 of the *National Parks and Wildlife Act 1974.*

The following presents other approvals that are required to carry out the Project that have not been addressed above.

- Environment Protection and Biodiversity Conservation Act 1999
  The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) details the general obligations regarding the management of biodiversity and conservation under Commonwealth legislation.

Biodiversity assessments indicate that no significant adverse impacts on Matters of National Environmental Significance are considered likely to occur as a result of the Project (see att 3b_Copi MNES_Redacted). However, consultation with Cth DCCEEW indicated it would be best practice to refer the proposed action for further assessment.

Water Management Act 2000

Water Management Act 2000 (WM Act) approvals required for the Project that are not otherwise exempted under Section 4.41 of the EP&A Act, include Water Access Licences (WALs) issued under the Water Sharing Plan for the NSW Murray Darling Basin (MDB) Porous Rock Groundwater Sources Order 2020 to account for groundwater extracted from the production bores and evaporative losses from the dredge pond.

Under the NSW Harvestable Rights Policy, as the Project is located within the Western Division, no WALs are required for harvesting, storage or use of incident rainfall within the Mine Site.

- Protection from Harmful Radiation Act 1990 Licences to store, handle and transport Monazite Product

1. The Monazite Product is expected to be classified as a Class 7 (Radioactive Material) under the Australian Dangerous Goods Code. Up to 7,500tpa of Monazite Product would be produced.
2. A licence under Section 6 of the Protection from Harmful Radiation Act 1990 will be required for the storage of Monazite Product.
3. Licences under Paragraph 59(1)(c) of the Commonwealth Australian Radiation Protection and Nuclear Safety Regulations 2018 will be required for transportation of Monazite Product from the Mine Site. The required approval would be issued by the Australian Radiation Protection and Nuclear Safety Agency.

- Construction Certificates, Occupation Certificates, etc
  All necessary approvals under Division 6.3 of the EP&A Act would be obtained from Wentworth Shire Council for construction, erection and/or placement of buildings, structures and appropriate water treatment systems for the Project.

Section 2 of the Amendment Report for the Project (see att 2_Strategic Context) outlines the legislation, planning frameworks and policy documents are also relevant to the strategic context of the proposed action and how they are relevant.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

RZ Resources is committed to ongoing, open, and transparent communication with all affected stakeholders throughout the Project.

RZ Resources has engaged with landholders, the wider community, the Aboriginal community, and government agencies regarding the Project.

RZ Resources' Community Engagement Strategy was prepared in accordance with the guidelines published by the Department of Planning and Environment and implemented throughout the Project's design and planning phases.

Since 2018, a variety of formal and informal methods of engagement have been employed, including:

- Face-to-face meetings.
- Telephone discussions.
- Direct mail and email.
- Public and community meetings.
- Public displays.
- Hosting an information stall at the Wentworth Show.
- Presentations to key groups such as business groups and supplier groups.

Establishing a local presence has been important to RZ Resources. Since mid-2018, a full-time Exploration Manager has resided within the Wentworth LGA. The exploration team during peak exploration operations expanded to more than 20 people on a full-time equivalent basis. Currently there are 9 local people employed on a full-time basis, however roles are still being developed, and there is a commitment to ensure the majority of RZ Resources personnel will be locally based.

RZ Resources will develop a Cultural Heritage Management Plan in partnership with the Registered Aboriginal Parties.

RZ Resources will continue to encourage two-way communication that is meaningful, relevant, and respectful with community members and stakeholders, offering various formal and informal opportunities for engagement, including the planned opening of a local shopfront.

A detailed consultation log with over 750 individual consultation events has been prepared since January 2018. For privacy reasons this log has not been provided with this application. A copy may be supplied on a confidential basis on request.

Key matters of interest raised during landholder and community engagement included the following.

- Transportation routes and proposed road and intersection upgrades.
- Potential effects on groundwater, particularly within the Middle and Lower Aquifers.
- Potential effects on neighbouring agricultural operations.
- Location of the Mine Site and site infrastructure.
- Rehabilitation of the Mine Site.
- The Project's ability to improve communication and safety in the local area.
- Employment and economic opportunities.

RZ Resources will develop a Cultural Heritage Management Plan in partnership with the Registered Aboriginal Parties.

RZ Resources will continue to encourage two-way communication that is meaningful, relevant, and respectful with community members and stakeholders, offering various formal and informal opportunities for engagement, including the planned opening of a local shopfront.

Section 5 of the EIS (see att 5_EIS Sect 5) presents the extent of public consultant undertaken by the Applicant during preparation of the EIS, and Section 5 of the Amendment Report (see att 6_Amendment Report Sect 5) presents the extent of public consultation undertaken by the Applicant during preparation of the Amendment Report.

1.3.1 Identity: Referring party

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	31002033712
Organisation name	R.W. Corkery & Co
Organisation address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067

Referring party details

Name	Rebecca Raynal
Job title	Graduate Environmental Consultant
Phone	0429 635 975
Email	rebecca@rwcorkery.com
Address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	23160863892
Organisation name	RZ Resources LTD
Organisation address	Level 8/10 Eagle St, Brisbane City QLD 4000

Person proposing to take the action details

Name	Ashley Beechey
Job title	Manager - Environmental and Approvals
Phone	0419 008 736
Email	abeechey@rzresources.com
Address	Level 8/10 Eagle St, Brisbane City QLD 4000

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

No

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

RZ Resources has undertaken mineral exploration within the Mine Site since 2017. During that time extensive mineral exploration programs have been completed without significant environmental incident.

In 2020, the Resources Regulator advised of a compliance audit of RZ Resources exploration activities. As a result of their investigation, the Company was notified of potential contraventions sections of the Mining Act 1992 (Mining Act) and exploration codes of practice. The alleged contraventions related to matters of an administrative and compliance nature. In March 2023 the Resources Regulator and the Applicant agreed to an enforceable undertaking under the Mining Act noting that there were potential issues with past exploration activities and where practices and processes will be improved going forward.

Prior to finalisation of the enforceable undertaking, RZ Resources had already taken an extensive range of actions to improve environmental and consultation practices on all its tenements, including additional workplace training, resources, systems, and software. Additional third-party auditing of the company's rehabilitation activities enabled the company to make improvements to its rehabilitation practices and align with industry best practice.

On 18 April 2023, the Resources Regulator commenced an investigation in relation to 50 alleged non-compliances with Section 378D and 140 of the Mining Act related to rehabilitation of exploration-related disturbance on a neighboring property within the Mine Site. On 24 January 2024, the Applicant was notified by the Resources Regulator that none of the allegations were sustained and no further action was required.

In May 2025, Resource Regulation audited exploration leases EL8312 and EL9496 for the Copi Project (refer att_9_Draft Audit Report). The audit found RZ Resources' exploration operations were well managed, with robust systems in place to identify and manage compliance. Records were properly maintained, and environmental performance had significantly improved since previous inspections. RZ Resources were compliant with license conditions, activity approvals, and relevant codes of practice. No non-compliances were identified.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

RZ resources is committed to effective environmental management in all areas of the company's business. They are working to achieve best practice in managing the environmental impacts of our exploration, mining and mineral processing operations. This includes:

- Ensuring all employees and contractors are aware of their environmental obligations and accountable for RZ Resources environmental performance,
- Operating with due regard for applicable legislation, regulations, guidelines & standards,
- Designing, developing and operating facilities that aim to reducing the impact of our operations,
- Integrate environmental issues into all aspects of planning and operational processes,
- Establishing and maintaining procedures to minimise environmental disturbance caused by operations,
- Re-establishing disturbed areas as sustainable ecosystems and community assets,
- Evaluating regularly RZ Resources environmental results, objects, targets and risk potential to achieve continuous improvement in their environmental performance,
- Ensure efficient use of all resources and reduce, reuse and recycle our wastes,
- Using resources efficiently, in particular energy, water and land, and;
- Maintain a product stewardship approach towards the use of their products.

The following attachments are examples of RZ Resources Environmental Policy and planning framework:

- RZ Resources Environmental Policy (draft) (see att_7_RZ Environmental Policy Draft).
- RZ Resources Standard Operating Procedure for Exploration Site Rehabilitation 2025 (see att_8_RZ Exploration Rehab SOP).
- RZ Resources Rehabilitation Management Plan: Risk Assessment document (see att_19_RZ Rehab Risk Assessment).

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN	23160863892
Organisation name	RZ Resources LTD
Organisation address	Level 8/10 Eagle St, Brisbane City QLD 4000

Proposed designated proponent details

Name	Ashley Beechey
Job title	Manager - Environmental and Approvals
Phone	0419 008 736
Email	abeechey@rzresources.com
Address	Level 8/10 Eagle St, Brisbane City QLD 4000

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	31002033712
Organisation name	R.W. Corkery & Co
Organisation address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067
Representative's name	Rebecca Raynal
Representative's job title	Graduate Environmental Consultant
Phone	0429 635 975
Email	rebecca@rwcorkery.com
Address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	23160863892
Organisation name	RZ Resources LTD
Organisation address	Level 8/10 Eagle St, Brisbane City QLD 4000
Representative's name	Ashley Beechey
Representative's job title	Manager - Environmental and Approvals
Phone	0419 008 736
Email	abeechey@rzresources.com
Address	Level 8/10 Eagle St, Brisbane City QLD 4000

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? *

No

1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? *

No

1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

1.4.7 Has the department issued you with a credit note? *

No

1.4.9 Would you like to add a purchase order number to your invoice? *

No

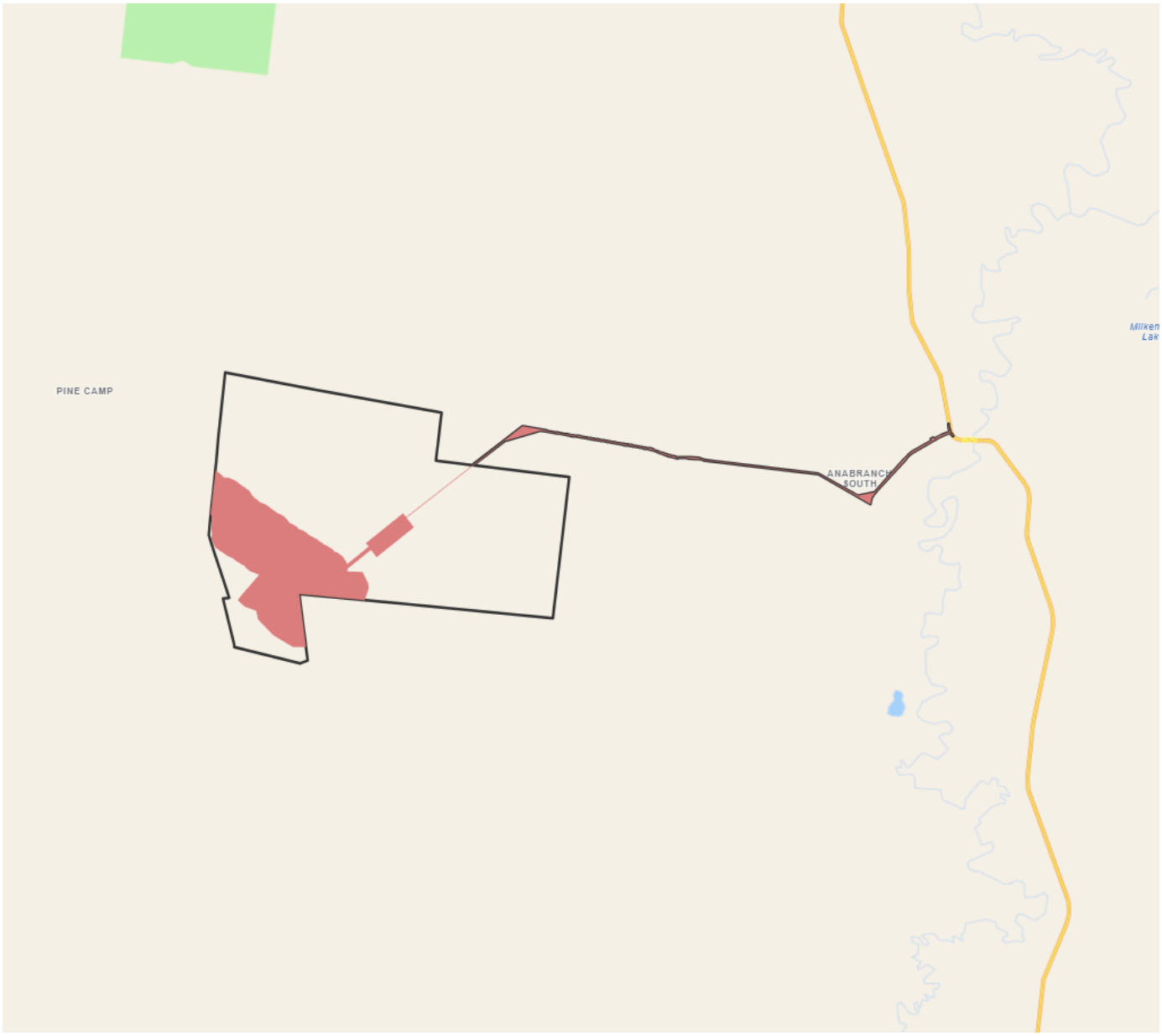
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment? *

Person proposing to take the action

2. Location

2.1 Project footprint



Project Area: 19728.07 Ha **Disturbance Footprint:** 4020.44 Ha

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

Nulla Road, Rufus Wentworth NSW 2648

2.2.2 Where is the primary jurisdiction of the proposed action? *

New South Wales

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The Project Site tenure consists of leasehold land (Western Lands Lease) and Council Road Reserves (including Nulla, Anabranch Mail). Att_11_Land Holders presents a plan showing the location of the relevant land holdings within and surrounding the Project Site. In summary, the Project Site is the subject of four Western Land Lease landholdings as follows.

- “Warwick” – held by the Wentworth Pastoral Company, an entity associated with the RZ Resources. As a result, the property is Project-related.
- “Nulla” – held by a private individual, however the Applicant has finalised a commercial agreement with the property owner. As a result, the property is Project-related.

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area’s environment.

Existing Environment

The Project is located within the Murray Darling Depression Bioregion of western NSW, dominated by a warm to hot, semi-arid climate. The bioregion lies within the Murray basin on Tertiary and Quaternary sediments characterised by dune fields, and plains and calcareous soils (National Parks and Wildlife Service (NSW), 2003).

The Project' Sites catchment encompasses the Lower Murray Darling River system flowing from Menidnee Lakes to it's junction with the Murray River at Wentworth. The topography is characterised by a series of low ridges and drainage depressions, with gentle slopes typically less than 1% or 1:100 (V:H), with localised areas with slopes of approximately 5% or 1:20 (V:H). There are no major watercourses that flow through the Mine site. However, there are a series of salt lakes that are known to be expressions of groundwater. Shallow groundwater within the Project is saline, with an electrical conductivity of ~61,000uS/cm. The Great Darling Anabranch is located approximately 20km east of the Project Site. Lake Victoria is located ~30km south of the Project Site, an integral component of the regulated Murray River system.

Biodiversity and Agriculture

The Project Site is characterised by 3 main landscapes being the Scotia Groundwater Basin, Scotia Linear Dunes and Scotia Sandplains. The landscape is characterised by the Scotia Linear. Five soil types have been identified within the Project Site as follows:

- Dunefields and Sand Plains – primarily occupying areas of higher elevation
- Blanchetown Clay – primarily occupying low lying areas.
- Lunettes – primarily comprising wind-blown material to the east of the Salt Pans.
- Lunettes with Copi – primarily occupying areas near or downwind of the Salt Pans.
- Lake Floor East - primarily occupying the Eastern Salt Pan. The soil is clayey and sufficiently saline to be toxic to plants

Results of the Biodiversity Development Assessment Report (BDAR) identified thirteen Plant Community Types (PCTs) which are present within The Project Site (Mine Site and Linear Corridor) . The land of the Project Site has undergone substantial historical grazing. The region has also been subject to drought conditions sporadically throughout the past 40 years. The majority of native vegetation within the Project Site Footprint is considered to be of very low to low condition.

The BDAR identified a range of fauna on the Project area. Surveys identified 82 bird species 29 reptile species, 17 mammal species and 3 amphibian species.

Location

The Mine Site is located approximately 75km northwest of Wentworth and 180km south-southwest of Broken Hill, within the Wentworth Local Government Area (LGA) of New South Wales.

Land Zoning

The Mine Site is located wholly on and is surrounded by land zoned under the *Wentworth Local Environmental Plan 2011* (Wentworth LEP) as RU1 – Primary Production . Open Cut mining is permissible with consent in this zone.

The Site Access Road and section of Anabranch Mail Road to be upgraded occurs on land zoned as follows.

RU1 – Primary Production.

SP2 – Infrastructure (Silver City Highway)

Roads are permitted without consent within Zone RU1 – Primary Production and Zone SP2 - Infrastructure.

(See attachment att 12_Land Zoning.jpg)

Transportation

The Project Site will be accessed from the Silver City Highway via an upgraded and slightly realigned section of Anabranch Mail Road (approximately 6.1km). The proposed Site Access Road follows an existing access track.

3.1.2 Describe any existing or proposed uses for the project area.

Existing land uses within the Project Site include agriculture, namely low intensity grazing.

Proposed land uses within the Project Site during the life of the Project would include mining, with agriculture and nature conservation within areas not subject to mining operations.

Following the closure and rehabilitation of the Project Site, the land uses would primarily comprise nature conservation, and infrastructure or industrial use subject to further approval (see attachment att 10_Final Landform.jpg).

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

The Project Site contains significant geological features in the form of gypsum soils associated with lunette rises. These soils and rises are essential habitat for the endangered (BC Act 2016) Nulla Spear Grass (Austrostipa nullanulla), a gypsum obligate species. The Project will require the removal of 3.84ha of land occupied by A. nullanulla and 135.88ha of potential habitat in the form of gypsum soils consistent with PCT 253.

Endeavors will be made to restore the disturbed soils and rises once the soils are processed and works on sectors have ceased. This will take the form of placing gypsum-rich soils on the eastern margins of salt pans, mimicking the current habitat and conditions in areas occupied by A. nullanulla.

There are no Areas of Outstanding Biodiversity Value , or any karst, caves, crevices and cliffs within the Project Site.

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The Project Site is situated within a relatively flat area of the central Murray Darling Basin. Regional topography is characterised by sequences of ridges and lunettes that rise to elevations between 50m AHD and 70m AHD. These ridges are interspersed with broad swales and drainage depressions with elevations between 30m AHD and 40m AHD.

The Project Site topography is a small-scale reflection of regional topography and is characterised by swales and drainage depressions. Within the Mine Site there are three depressions, the largest being the centrally situated Eastern Salt Pan with two lesser depressions, the central and eastern depressions. The floor of the Eastern Salt Pan is approximately 25m AHD whilst the floor of the central and eastern depressions are notably higher at between approximately 30m AHD and 40m AHD respectively. The Salt Pans are interpreted to have been formed by deflation, with wind-blown sediments deposited as lunettes on the eastern side of each structure. The Salt Pans are surrounded by gently sloping land that rises to approximately 60m AHD east of the Eastern Salt Pan. At greater distances from the salt pans, the landforms are typically flat to undulating, with rises and swales typically between 40m AHD and 70m AHD respectively. Slopes typically average <1%, with localised areas with slopes around 5% associated with the wind-blown lunettes adjacent to the Eastern Salt Pan.

The Project will not be in a marine area.

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

Flora

Field surveys undertaken as part of the BDAR identified thirteen plant community types within the Project Site as follows.

- PCT 28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone
- PCT 58 - Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion
- PCT 64 - Samphire – Water Weed – Sea Heath shrubland saline wetland of depressions of the arid and semi-arid (warm zones)
- PCT 143 - Narrow-leaved Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes
- PCT 152 - Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion
- PCT 154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains
- PCT 157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion
- PCT 170 - Chenopod sandplain mallee woodland/shrubland
- PCT 171 - Spinifex linear dune mallee mainly of the Murray Darling Depression bioregion
- PCT 215 - Woollybutt Grass open grassland on red earths of the inland plains
- PCT 221 - Black Oak – Pearl Bluebush open woodlands of the sandplains of the semi-arid warm and arid climate zones
- PCT 253 - Gypseous shrubland on rises in the semi-arid and arid plains
- PCT 254 - Black Oak - Bladder Saltbush on light clays in the arid zone

One state and nationally endangered species, *Austrostipa nullanulla,* was recorded during targeted surveys across the Mine Site. A total of 3.84ha of scattered A. nullanulla was confirmed within the Mine Site**.**

No PCTs associated with Endangered Ecological Communities (EECs) under the *Biodiversity Conservation Act 2016* were identified as a part of the BDAR analysis (ground truthed data and analysis of the diagnostic keys). Therefore, no EECs were identified to occur within the Project Site (refer att 3b_Copi MNES_Redacted).

The following EPBC Act listed flora species were identified as having the potential to occur within the Project Site based on historical records in the locality and/or PCT associations.

- MacNutt's Wattle (*Acacia macnuttiana*)
- Velvet Wattle (*Acacia pubifolia*)
- Rodd's Star Hair (*Astrotricha roddii*)
- *Callistemon pungens*
- Bluegrass (*Dichanthium setosum*)
- Ovenden's Ironbark (*Eucalyptus caleyi subsp. ovendenii*)
- McKie's Stringybark (*Eucalyptus mckieana*)
- Narrow-leaved Peppermint (*Eucalyptus nicholii*)
- Blackbutt Candlebark (*Eucalyptus rubida subsp. Barbigerorum*)
- Heath Wrinklewort (*Rutidosis heterogama*)
- Austral Toadflax (*Thesium australe*)
- Keith's Zieria (*Zieria ingramii*)

The following EPBC Act listed species were predicted likely to occur based on suitable habitat being present (refer to att 3b_Copi MNES_Redacted, Appendix 2, Table 25).

- A Saltbush (*Atriplex infrequens*)

- Winged Peppercress (*Lepidium monoplocoides*)
- Desert Greenhood (*Pterostylis xerophila*)
- Menindee Nightshade (*Solanum karsense*)
- Slender Darling-pea (*Swainsona murrayana*)
- Yellow Swainson-pea (*Swainsona pyrophila*)

It is noted that none of the above species were found present during extensive flora and fauna surveys across the Project Site.

Fauna

Surveys detected 82 bird species 29 reptile species, 17 mammal species and 3 amphibian species (see att 3b_Copi MNES_Redacted, Appendix 2, Table 25). A summary of targeted survey methods and identified EPBC listed species is detailed below (refer to att 3b_Copi MNES_Redacted, Appendix 2, Table 25):

- **Active herpetological searches** – No threatened species identified
- **Diurnal bird surveys** – Four species identified:
  - *Melanodryas cucullata cucullata* (South-Eastern Hooded Robin) - Endangered
  - *Lophochroa leadbeateri leadbeateri* (Pink Cockatoo) - Endangered
  - *Aphelocphala leucopsis* (Southern Whiteface) – Vulnerable
- **Hollow bearing tree search** – Thirty-nine hollow bearing trees were located with a total of 65 hollow identified. However, only nine were identified within the Mine Site.
- **Nocturnal spotlight surveys** – No threatened species identified.
- **Nocturnal call playback** – No threatened species identified.
- **Elliot trapping and pitfall trapping** - No threatened species identified.
- **Microbat call recording** - No threatened species identified. An unconfirmed call of a Nyctophilus genus identified and was noted to potentially be *Nyctophilus corbeni* (Corbens Long-eared Bat) - Vulnerable. Further surveys would be needed to confirm the species presence.

The following EPBC Act listed fauna species were identified as having the potential to occur within the Project Site based on historical records in the locality and/or PCT associations (refer toatt 3b_Copi MNES_Redacted, Appendix 2, Table 25).

- Murray Mallee Striated Grasswren (*Amytornis striatus howei*)
- Malleefowl (*Leipoa ocellata*)
- Grey Falcon (*Falco hypoleucos*)
- Australian Bittern (*Bitaurus poiciloptilus*)
- Sharp-tailed Sandpiper (*Calidrus acuminata*)
- Curlew Sandpiper (*Calidrus ferruginea*)
- Latham's Snipe (*Gallinago hardwickii*)
- Painted Honeyeater (*Grantiella picta*)
- Black-eared Miner (*Manorina melanotis*)
- Blue-winged Parrot (*Neophema chrysostoma*)
- Red-lored Whistler (*Pachycephala rufogularis*)
- Plains-wanderer (*Pedionomus torquatus*)
- Regent Parrot (*Polytelis anthopeplus monarchoides*)
- Australian Painted Snipe (Rostratula australis)
- Diamond Firetail (*Stagonopleura guttata*)
- Southern Bell Frog (*Litoria raniformis*)
- Grey Snake (*Hemiaspis damelii*)
- Burrowing Bettong (*Bettongia leseur leseur*)
- Greater Stick-nest Rat (*Leporillus conditor*)

- Numbat (*Myrmecobius fasciatus*)
- Corben's Long-eared Bat (*Nyctophilus corbeni)*
- Brindled Nail-tail Wallaby *(Onychogalea fraenata)*
- Koala *(Phascolarctos cinereus)*

The following EPBC Act listed species either recorded in the Project Area or were predicted to occur based on suitable habitat being present (see att 3b_Copi MNES_Redacted, Appendix 2, Table 25).

- South-eastern Hooded Robin (*Melanodryas cucullata cucullata*)
- Southern Whiteface (*Aphelocephala leucopsis*)
- Pink Cockatoo (*Lophochroa leadbeateri leadbeateri*)
- Corben's Long-eared Bat (*Nyctophilus corbeni*)

Threatened Ecological Communities
The following EPBC Act listed Threatened Ecological Communities (TEC) were identified as having the potential to occur within the Project Site based on historical records in the locality and/or PCT associations.

- Coolibah-Black Box Woodlands
- Buloke Woodlands
- Mallee Bird Community

Only the Mallee Bird Community was considered likely to occur within the Project Area (att 3b_Copi MNES_Redacted, Appendix 2, Table 25).

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

The Project Site (consisting of the Mine Site and Linear Corridor) has undergone substantial historical grazing disturbance over decades from ongoing pastoral activity including sheep and goats. The area had regular drought records over the past 40 years which has likely exacerbated these grazing pressures. The majority of the Project Site consists of Native Vegetation which is broadly in a low to low-moderate condition state across representative PCTs. NSW State Vegetation Type Mapping only partially aligns with ground-truthed PCTs within the Limit of Disturbance. A total of 13 PCTs occur within the Limit of Disturbance including 11 within the Mine Site and six within the Linear Corridor. PCTs 28 and 143 are confined to the Linear Corridor.

- PCT 28 - White Cypress Pine open woodland of sand plains, prior streams and dunes mainly of the semi-arid (warm) climate zone
- PCT 58 - Black Oak – Western Rosewood open woodland on deep sandy loams mainly in the Murray Darling Depression Bioregion
- PCT 64 - Samphire – Water Weed – Sea Heath shrubland saline wetland of depressions of the arid and semi-arid (warm zones)
- PCT 143 - Narrow-leaved Hopbush – Scrub Turpentine – Senna shrubland on semi-arid and arid sandplains and dunes
- PCT 152 - Lunette chenopod shrubland mainly of the Murray Darling Depression Bioregion
- PCT 154 - Pearl Bluebush low open shrubland of the arid and semi-arid plains
- PCT 157 - Bladder Saltbush shrubland on alluvial plains in the semi-arid (warm) zone including Riverina Bioregion
- PCT 170 - Chenopod sandplain mallee woodland/shrubland
- PCT 171 - Spinifex linear dune mallee mainly of the Murray Darling Depression bioregion
- PCT 215 - Woollybutt Grass open grassland on red earths of the inland plains
- PCT 221 - Black Oak – Pearl Bluebush open woodlands of the sandplains of the semi-arid warm and arid climate zones
- PCT 253 - Gypseous shrubland on rises in the semi-arid and arid plains
- PCT 254 - Black Oak - Bladder Saltbush on light clays in the arid zone

Refer to att 3b_Copi MNES_Redacted Table 5.

The Linear Corridor intersects five PCTs that are potentially associated with an Endangered Ecological Communities (EEC) listed under the BC Act.

- PCT 28 is associated with the EEC - Sandhill Pine Woodland in the Riverina, Murray Darling Depression and NSW South Western Slopes bioregions and Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions.
- PCT 143 and 154 are associated with Acacia loderi shrublands.
- PCT 58 and 170 are associated with the EEC Acacia loderi shrublands and Acacia melvillei Shrubland in the Riverina and Murray-Darling Depression bioregions.

Five soil associations were identified within the Project Site as follows.

- Dunefields and Sand Plains – primarily occupying areas of higher elevation.
- Blanchetown Clay – primarily occupying low lying areas.
- Lunettes – primarily comprising wind-blown material to the east of the Salt Pans.
- Lunettes with Copi – primarily occupying areas near or downwind of the Salt Pans.
- Lake Floor East - primarily occupying the Eastern Salt Pan. The soil is clayey and sufficiently saline to be toxic to plants.

The Dunefield and Sand Plains Association, covering 31% of the Limit of Disturbance is typical of surrounding land, and was rich in carbonate, alkaline and had low salinity (Table S1). Blanchetown is clayey, with non-saline topsoil over saline subsoil. The Lunettes associations were formed from sediment that has blown out of the relict lakes, The Lunettes with Copi have a high proportion of gypsite or Copi, while the Lunettes Association is sandy soil. Lake Floor East is a closed depression with shallow

groundwater, and the soil is strongly saline.

The land was rated as having low capacity to withstand high impact land use such as cropping. 66% of the Limit of Disturbance was rated as Land and Soil Capability (LSC) class 6, which is suitable for low impact uses such as grazing. The remaining 33% was LSC class 8, indicating that the land has extremely low capacity to withstand disturbance. The capability of the Dunefields and Sand Plains, Blanchetown, and Lunettes Associations was restricted by susceptibility of the sandy topsoil to wind erosion, in which the surface stability was provided predominantly by fragile cryptogram crusts (biological crusts formed by algae). Elevated salinity limited the capability of Lake Floor East Association to LSC 8. This LSC rating means that the current land use of grazing of native grasses and shrubs is consistent with the capacity of the soil to withstand disturbance.

The area with potential to contain acid sulphate soil was very strongly saline, and salinity was judged to be a greater hazard at this site than acid sulphate soil.

3.3 Heritage

3.3.1 Describe any Commonwealth Heritage Places Overseas or other places recognised as having heritage values that apply to the project area.

No Commonwealth heritage places overseas or other places are recognised as having heritage values that apply to the project area.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

An Aboriginal Cultural Heritage Assessment Report was prepared by OzArk Environment and Heritage Pty Ltd that investigates the impacts of the Project on Aboriginal cultural heritage within the Project Site. Refer to att 4_928_Aboriginal Heritage for a summary of that report.

Surveys consisted of 21 days of field survey and 12 days of test pit excavation. Registered Aboriginal Parties participated in all field work. In summary, 143 sites with Aboriginal objects were identified within the Project Area. Of these identified Aboriginal sites, 55 sites would be impacted and 88 sites would be avoided.

The impacted Aboriginal sites within the limit of disturbance consist of:

- 32 isolated finds
- 20 artefact scatters, and
- 3 artefact scatters with harths.

Of the sites in the Project Site, 136 were assessed as having low scientific significance and seven were assessed as having moderate scientific significance. All sites were identified by the Registered Aboriginal Parties as having high social or cultural value.

The local Aboriginal community has been consulted throughout the assessment process and all requests in relation to management of the identified sites have been agreed to.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

Surface Water Catchments and Flows

The Project Site is situated within a relatively flat area of the central Murray Darling Basin. The Murray Darling Basin in the vicinity of the Project Site is dominated by the Darling River. This river starts at the confluence of the Barwon and Culgoa Rivers, between Brewarrina and Bourke in northern NSW and flows in a southeasterly direction before merging with the Murray River at Wentworth. The Murray River then flows in a westerly and south-westerly direction before entering the Southern Ocean at Goolwa, in South Australia.

The Great Darling Anabranch, located approximately 20km east of the Project Site, is a relict channel of the Darling River and flows in a generally southerly direction before also merging with the Murray River at Wentworth. The Great Darling Anabranch includes a series of large, shallow, typically dry lakes such as Yelta, Wialia, Pine, Popio and Popiltah Lakes. These lakes, and many smaller drainage depressions, are believed to have been formed by wind transportation of dry exposed sediments in the base of the depression. These sediments commonly form lunettes of wind-blown material on the northeastern and eastern margins of the lakes, a reflection the dominant south-westerly wind patterns. Lake Victoria, located approximately 30km to the south of the Mine Site, forms an integral component of the regulated Murray River system, with water levels controlled by a series of embankments and locks.

There are five surface water catchments either wholly or partly within the Project Site boundary. The local drainage networks of the catchments direct runoff internally, with no catchment outlet or downstream linkages. These internal drainage networks are also indistinct and discontinuous, terminating in dams that were historically constructed to support stock watering. The land surface is also sandy which means that drainage depressions, such as the Eastern Salt Pan, will typically only receive overland flow after substantial rainfall occurs.

A brief overview of all Project Site catchments is as follows.

- Southwestern Catchment – this catchment is partly situated within, and externally drains beyond, the southwestern and western sections of the Project Site. Approximately 83ha of the northeastern section of this catchment would be disturbed by the Project.
- Central Depression Catchment– this catchment is situated in the northwest of the Project Site. Project-related activities would disturb an approximately 345ha in the southern section of this catchment.
- Eastern Salt Pan Catchment – this catchment is situated in the central eastern section of the Project Site. Catchment drainage is towards the Eastern Salt Pan. Approximately 3301ha of this catchment would be disturbed by Project-related activities.
- Eastern Catchment – this catchment is situated in the northeast section of the Project Site. Approximately 69ha of this catchment would be disturbed by Project-related activities

There are no RAMSAR listed wetlands in the vicinity of the Project Site. There are no identified flooding risks within the Project Site.

Groundwater Setting and Flows

The Project Site is located within the Lower Darling Basin with three principal aquifers (Upper, Middle and Lower). From shallowest to deepest, the stratigraphic units which variously comprise these aquifers.

The Upper Aquifer is the principal groundwater system of interest for the Project. The Upper Aquifer is underlain by the Bookpurong Beds and Gera Clay and is hydrologically disconnected from the Middle and Lower Aquifers. The Upper Aquifer is overlain in places by the Blanchetown Clay, resulting in a locally confined groundwater system.

The Upper Aquifer is hosted by unconsolidated sands of the Loxton-Parilla Sands and is characterised by water table with a very shallow gradient towards the southwest. The aquifer is characterised by a very high horizontal hydraulic conductivity (up to 30m/d) and groundwater quality within the aquifer is very poor, with

an electrical conductivity of approximately 61,000uS/cm, almost twice that of sea water (35,000uS/cm).

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	No	Yes
S21	Nuclear	Yes	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No World Heritage protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No National Heritage protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Ramsar wetland
No	No	Banrock Station Wetland Complex
No	No	Riverland
No	No	The Coorong, and Lakes Alexandrina and Albert Wetland

4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No RAMSAR Wetland protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species	Common name
Yes	Yes	Amytornis striatus howei	Murray Mallee Striated Grasswren, Striated Grasswren (sandplain)
Yes	Yes	Aphelocephala leucopsis	Southern Whiteface
Yes	Yes	Atriplex infrequens	
No	No	Bidyanus bidyanus	Silver Perch, Bidyan
No	No	Botaurus poiciloptilus	Australasian Bittern
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
Yes	Yes	Falco hypoleucos	Grey Falcon
No	No	Galaxias rostratus	Flathead Galaxias, Beaked Minnow, Flat-headed Galaxias, Flat-headed Jollytail, Flat-headed Minnow
No	No	Gallinago hardwickii	Latham's Snipe, Japanese Snipe
No	No	Grantiella picta	Painted Honeyeater
No	No	Hemiaspis damelii	Grey Snake
Yes	Yes	Leipoa ocellata	Malleefowl
Yes	Yes	Lepidium monoplocoides	Winged Pepper-cress
Yes	Yes	Lophochroa leadbeateri leadbeateri	Major Mitchell's Cockatoo (eastern), Eastern Major Mitchell's Cockatoo
No	No	Maccullochella macquariensis	Trout Cod
No	No	Maccullochella peelii	Murray Cod
No	No	Manorina melanotis	Black-eared Miner
Yes	Yes	Melanodryas cucullata cucullata	South-eastern Hooded Robin, Hooded Robin (south-eastern)

Direct impact	Indirect impact	Species	Common name
No	No	Neophema chrysostoma	Blue-winged Parrot
Yes	Yes	Nyctophilus corbeni	Corben's Long-eared Bat, South-eastern Long-eared Bat
No	No	Pedionomus torquatus	Plains-wanderer
No	No	Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)
No	No	Polytelis anthopeplus monarchoides	Regent Parrot (eastern)
Yes	Yes	Pterostylis xerophila	Desert Greenhood
No	No	Rostratula australis	Australian Painted Snipe
Yes	Yes	Solanum karsense	Menindee Nightshade
No	No	Stagonopleura guttata	Diamond Firetail
Yes	Yes	Swainsona murrayana	Slender Darling-pea, Slender Swainson, Murray Swainson-pea
Yes	Yes	Swainsona pyrophila	Yellow Swainson-pea

Ecological communities

Direct impact	Indirect impact	Ecological community
No	No	Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions
No	No	Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions
No	No	Mallee Bird Community of the Murray Darling Depression Bioregion

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

Biodiversity Australia prepared the Matters of National Environmental Significance report for the Copi Mineral Sands Project. For those protected matters that were considered to have potential to occur within the Disturbance footprint,or that were recorded within the limit of disturbance, assessments of significance were prepared, in accordance with Matters of National Environmental Significance. Significant Impact Guidelines 1.1 (DoE, 2013), as presented in att 3b_Copi MNES_Redacted, Appendix 2, Table 25.

Four EPBC Act listed threatened fauna were recorded within the Project Site including:

- South-eastern Hooded Robin (Melanodryas cucullata cucullata)
- Southern Whiteface (Aphelocephala leucopsis)
- Pink Cockatoo (Lophochroa leadbeateri leadbeateri)
- Corben's Long-eared Bat (Nyctophilus corbeni)

An additional nine EPBC Act listed threatened fauna that the PMST lists as likely to occur at the Project Site based on suitable habitat, but were not recorded within the Project Site include:

- A Saltbush (Atriplex infrequens)
- Winged Peppercress (Lepidium monoplocoides)
- Desert Greenhood (Pterostylis xerophila)
- Menindee Nightshade (Solanum karsense)
- Slender Darling-pea (Swainsona murrayana)
- Yellow Swainson-pea (Swainsona pyrophila)
- Murray Mallee Striated Grasswren (Amytornis striatus howei)
- Malleefowl (Leipoa ocellata)
- Grey Falcon (Falco hypoleucos)

Direct impacts to these species through the disturbance of approximately 3,883.08 ha (Mine Site 3,692.92 ha and Linear Corridor 190.16 ha) of known or suitable habitat are predicted as a result of the Proposed Action. The Proposed Action may also result in indirect impacts to the above threatened fauna species from construction and operation activities, including noise, dust, light and vibration.

Mallee Bird Community TEC

Although the Project Site contains two Mallee communities providing potential habitat for the Mallee Bird Community, (DAWE 2021) states the TEC is only present when at least three (3) terrestrial bird species from the list of MBC diagnostic birds are present. However, extensive bird surveys conducted in these areas recorded only two diagnostic species. Therefore the action within the impact site does not directly impact the TEC (see att 3b_Copi MNES_Redacted, Section 8.1).

South-eastern Hooded Robin (Melanodryas cucullata cucullata)

South-eastern Hooded Robin was recorded in the Project Site on multiple occasions between 2018 and 2025. Plant Community Types associated with the species and present within the Project Site include PCTs 58, 170, 171, 254 and 221. The total area proposed to be cleared that could be occupied by these species is approximately 662 ha. Refer to att 3b_Copi MNES_Redacted, Section 8.2.

Southern Whiteface (Aphelocephala leucopsis)

The Southern Whiteface was recorded in the Project Site on multiple occasions between 2018 and 2025. PCT that associated with the species are present within the disturbance footprint and include PCT 28, 58, 143, 152, 154, 157, 170, 171, 215 and 253. The total area proposed to be cleared that could be occupied by these species is approximately 2846ha. Refer to att 3b_Copi MNES_Redacted, Section 8.3.

Pink Cockatoo (Lophochroa leadbeateri leadbeateri)

The Project Site is within the known distribution of the Pink Cockatoo and the species has been recorded within the limit of disturbance on multiple occasions. Habitat critical to the survival of the species is present on the site in terms of vegetation types associated with the species and 34 trees bearing hollows greater than 10 cm in diameter; however, the lack of fresh water is likely to limit reliance in the limit of disturbance for nesting. The Action would remove approximately 802ha of potential habitat from a locality where forage habitat is not scarce and the habitat on site is heavily impacted by goats. The Action would remove nine Hollow Bearing Trees suitable for Pink Cockatoo breeding: five from the Project Site (where Hollow Bearing Trees are scarce) and four from the Linear Corridor (where 23 were recorded). The Linear Corridor would also introduce a threat from traffic strike. Refer to att 3b_Copi MNES_Redacted, Section 8.4.

Corben's Long-eared Bat (Nyctophilus corbeni)

The Project Site is within the known distribution of the Corben's Long-eared Bat. The species has not been definitively recorded within the limit of disturbance but it is assumed present in the absence of a broader detailed survey, since Anabat survey recorded a Nyctophilus species at the Site. Nyctophilus species cannot be reliably differentiated using call characteristics, so detected calls could belong to either or both of N. geoffroyi (Lesser Long-eared Bat, not listed as a threated species) or the target species N.corbeni (Corben's Long-eared Bat). No BioNet or ALA records for the species occur within 50 km of the Project Site; however suitable habitat occurs within the Project Site. Habitat critical to the survival of the species has not been defined, however the species is known from four PCT which are present in the limit of disturbance along with Hollow Bearing Trees (considered essential breeding habitat), with some or both proposed for progressive removal. Refer to att 3b_Copi MNES_Redacted, Section 8.5.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.4.6 Describe why you do not consider this to be a Significant Impact. *

Biodiversity Australia prepared the Matters of National Environmental Significance report for the Copi Mineral Sands Project (refer to att 3b_Copi MNES_Redacted).

Mallee Bird Community TEC

Suitable habitat for the Mallee Bird Community is defined according to the EPBC Conservation Advice (2021) as follows:

- Vegetation community consistent with Mallee PCTs 170 and 171;
- Native vegetation (50% or more native crown cover and 50% or more native perennial cover less than 2 m) patch is at least 10 ha with at least 5 ha of mallee;
- Tree canopy crown cover is between 5% and 70%;
- Mallee eucalypt trees are the dominant tree canopy type present; and
- At least three specialist or dependent bird species recorded from survey

The Project Site contains two Mallee PCT;s providing potential habitat for the Mallee Bird Community:
• PCT 170 Chenopod sandplain mallee woodland/shrubland.
• PCT 171 Spinifex linear dune mallee mainly of the Murray Darling Depression Bioregion.

Applying the patch size criteria, only vegetation patches along the Linear Corridor area met the criteria, with 10.17ha of PCT 170 and 6.56 ha of PCT 171. Loss of this mallee vegetation will occur from the Linear Corridor construction, though this represents less than 0.21% of mallee within a 20 km radius of the Project Site. Further, the Mallee community within much of the disturbance footprint has been heavily degraded as a result of historic and ongoing grazing and damage arising from feral goats and sheep, as well as the absence of fire activity. Extensive bird surveys conducted in these areas recorded only two diagnostic species. Based on the information above, the Mallee Bird Community of the Murray Darling Depression bioregion TEC is not considered to be present within the limit of disturbance. Therefore, The Action will have less than a remote chance of causing a significant impact on the TEC (att 3b_Copi MNES_Redacted, Section 8.1).

South-eastern Hooded Robin (Melanodryas cucullata cucullata)
Habitat critical to the survival of the species as listed in the species Conservation Advice (DCCEEW 2023) includes areas of:
• Dry eucalypt and acacia woodlands and shrublands remnants with an open understorey, some grassy areas and a complex ground layer, often in or near clearings or open areas.
• Structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.
• Standing dead or live trees and tree stumps are also essential for nesting, roosting and foraging.
• Moderately deep to deep soils, rocks and fallen timber which provides essential foraging habitat.
None of the habitat on site meets all of the above criteria, primarily due to the loss of native grasses and ground layer complexity due to impacts arising from agriculture, feral goats and sheep. The land surrounding the disturbance footprint contains large swathes of PCTs 58, 170, 171, 254 and 221, which are in the same condition or similar to that proposed for removal. The removal of 662 ha of vegetation constitutes 0.92% of the overall Project Area. Therefore, the vegetation to be removed within the disturbance footprint is a relatively minor proportion and not considered habitat critical to the survival of the South-eastern Hooded Robin. Based on the information above, the impacts of The Action on South-eastern Hooded Robin habitat are not considered to be significant under the EPBC guidelines (att 3b_Copi MNES_Redacted, Section 8.2).

Southern Whiteface (Aphelocephala leucopsis)

The Project Area is not at or near the limit of the species range, the region is not identified as a key source population, and the population is not considered to be severely fragmented, genetically distinct or have limitations to dispersal, therefore the population in the disturbance footprint is not considered to represent an important population.

Habitat critical to the survival of the species as listed in the species Conservation advice (DCCEEW 2023) includes areas of:
• Relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both.
• Habitat with low tree densities and an herbaceous understory litter cover which provides essential foraging habitat.
• Living and dead trees with hollows and crevices which are essential for roosting and nesting.

None of the habitat in the disturbance footprint meets all the above criteria; primarily due to habitat degradation leading to the loss of trees, shrubs or native grasses and herbaceous ground litter, arising from impacts of agriculture and feral goats. The land surrounding Mine Site and along the Linear Corridor contains large swathes of PCTs 28. 58, 143, 152, 154, 157, 170, 171, 215 and 253, which are in the same condition or similar to that proposed for removal. The removal of the 2846 ha of vegetation constitutes 3.93% of the overall Project Area. Therefore, the vegetation to be removed within the disturbance footprint is a relatively minor proportion and not considered to be habitat critical to the survival of the Southern Whiteface. Based on the above, the Impact on the Southern Whiteface by The Action is not considered significant under the EPBC guidelines (att 3b_Copi MNES_Redacted, Section 8.3).

Pink Cockatoo (Lophochroa leadbeateri leadbeateri)

Land surrounding the Project Area contains large swathes of native vegetation, which is in the same condition or similar, and contains habitat (such as Hollow Bearing Tree density) of equal or higher value to that proposed for removal. The removal of 802 ha of potential habitat constitutes 1.1% of the overall Subject Land, in which 68,330 ha will be retained. Therefore, the vegetation to be removed within the Impact Site is a relatively minor proportion and not considered to be habitat critical to the survival of the Pink Cockatoo. Additionally, the lack of fresh water is likely to limit reliance on the disturbance footprint for nesting (att 3b_Copi MNES_Redacted, Section 8.4).

Corben's Long-eared Bat (Nyctophilus corbeni)

The species is considered to have large home ranges, and most roost sites are used for a single day only. Large distances are travelled at night, with consecutive roost sites generally within 4 km (TSSC 2015). This appears to indicate lesser reliance on any one habitat area in a mosaic of large tracts of native vegetation, as occurs in the region. The Proposed Action is considered of moderate severity based on the impact of vegetation clearing as a single event in any one area and a medium-long term (26 years) time frame. However, these impacts are considered reversible with progressive habitat rehabilitation following cessation of mining. Based on the above, the Impact caused by The Action to the Corben's Long-eared Bat and its habitat is not considered a significant impact under the EPBC guidelines (att 3b_Copi MNES_Redacted, Section 8.5 and Appendix 2, Table 25).

Significance assessments of the following species that were not recorded on site resulted in 'no significant impact' under all the relevant criteria, indicating a low risk of a real chance of significant impact (Refer to att 3b_Copi MNES_Redacted, Tables 16-24).

- A Saltbush (*Atriplex infrequens*)
- Winged Peppercress (*Lepidium monoplocoides*)
- Desert Greenhood (*Pterostylis xerophila*)
- Menindee Nightshade (*Solanum karsense*)

- Slender Darling-pea (*Swainsona murrayana*)
- Yellow Swainson-pea (*Swainsona pyrophila*)
- Murray Mallee Striated Grasswren (*Amytornis striatus howei*)
- Malleefowl (*Leipoa ocellata*)
- Grey Falcon (*Falco hypoleucos*)

4.1.4.7 Do you think your proposed action is a controlled action? *

No

4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. *

An assessment of The Action, utilising the matrix developed from the Significant Impact Guidelines 1.2, Is presented in att 3_928 Copi MNES report, Table 4. Considering the intensity, duration, scale and timing of the proposed Actions, the Actions align most closely with the 'Moderate Severity' category across all four key factors. The proposed Actions are characterised by their moderate-high intensity, medium-large scale and medium-long term, but reversible nature through rehabilitation.

All MNES entities recorded in the limit of disturbance, and those with suitable habitat and considered likely to occur in the limit of disturbance were subject to detailed assessment to determine the significance, or otherwise, of the impact/s. These entities, which have more than remote chance of being at risk of sustaining a significant impact, have been the subject of a detailed impact assessment in line with the MNES Significant impact guidelines 1.1.

1. **Mallee Bird Community TEC** (att 3_928 Copi MNES report, Section 8.1).

Applying the patch size criteria, only vegetation patches along the Linear Corridor area met the criteria, with 10.17 ha of PCT 170 and 6.56 ha of PCT 171. Loss of this mallee vegetation will occur from the Linear Corridor construction, though this represents less than 0.21% of mallee within a 20 km radius of the Project Site. Further, the Mallee community vegetation within much of the limit of disturbance has been heavily degraded as a result of historic and ongoing grazing and damage arising from feral goats and sheep, as well as the absence of fire activity.

2. **South-eastern Hooded Robin (Melanodryas cucullata cucullata)** (att 3_928 Copi MNES report, Section 8.1).

The land surrounding the limit of disturbance at the Mine Site and along the Linear Corridor contains large swathes of PCTs 58, 170, 171, 254 and 221, which are in the same condition or similar to that proposed for removal. The removal of 662 ha of vegetation constitutes 0.92% of the overall land assessed for the Project**.** Therefore, the vegetation to be removed within the Impact Site is a relatively minor proportion and not considered habitat critical to the survival of the South-eastern Hooded Robin.

3. **Southern Whiteface (Aphelocephala leucopsis)** (att 3_928 Copi MNES report, Section 8.1).
The land surrounding the disturbance footprint at the Mine Site and along the Linear Corridor contains large swathes of PCTs 28. 58, 143, 152, 154, 157, 170, 171, 215 and 253, which are in the same condition or similar to that proposed for removal. Therefore, the vegetation to be removed within the limit of disturbance is a relatively minor proportion and not considered to be habitat critical to the survival of the Southern Whiteface.

4. **Pink Cockatoo (Lophochroa leadbeateri leadbeateri)** (att 3_928 Copi MNES report, Section 8.1).
The land surrounding the disturbance footprint at the Mine Site and along the Linear Corridor contains large swathes of native vegetation, which is in the same condition or similar, and contains habitat (such as Hollow Bearing Tree density) of equal or higher value to that proposed for removal. Therefore, the vegetation to be removed within the limit of disturbance is a relatively minor proportion and not considered to be habitat critical to the survival of the Pink Cockatoo.

5. **Corben's Long-eared Bat (Nyctophilus corbeni)** (att 3_928 Copi MNES report, Section 8.1).

Habitat critical to the survival of the species has not been defined, however the species is known from four PCTs which are present in the limit of disturbance along with Hollow Bearing Trees (considered essential breeding habitat), with some or both proposed for progressive removal. No BioNet or ALA records for the species occur within 50 km of the Project Site; however suitable habitat occurs within the disturbance footprint.

All of the aforementioned species were assessed for the likelihood that the Action would have a nonremote chance of a significant impact via the Severity Assessment Matrix framework included within the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) – 2013 Significant Impact Guideline 1.2. The Severity Assessment Matrix was used in conjunction with considerations of each species biology, distribution and sensitivity to the potential impacts of the Action, in the application of the Significant Impact Guidelines 1.1 (DEWHA 2013). From this assessment it has been confidently determined that no Matter of National Environmental Significance has more than a remote chance of incurring a Significant Impact.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Since the exhibition of the EIS, the limit of disturbance has been reduced from 5974ha to 4017ha through the removal of Huntingfield, Sunshine and Belmore Stations (Refer to att 11_Land Holders.jpg, west of the Project Area). The Linear Corridor width has been reduced (from an initial 120m to 42m) to maximise the retention of areas of intact habitat and lessen the extent of disturbance to vegetation and habitat connectivity. These amendments ensure large areas of high-quality vegetation to the north-west of the disturbance footprint will be undisturbed by the Project. Additionally, the Project has successfully avoided impacts on any BC Act listed EECs and will have no impact on any important areas from the Important Habitat Map.

RZ Resources would implement the following management and mitigation measures to minimise those residual impacts on biodiversity values which cannot be avoided.

Pre-Clearing Surveys

The clearing extent is to be inspected for fauna by a suitably qualified or experienced person immediately prior to commencement of any vegetation removal involving machinery and/or tree-felling. This is to occur each morning if clearing spans over multiple days/weeks. Pre-clearing checks would include searches of habitat and searches for bird nests. If possible, any detected fauna is to be relocated off-site to nearby suitable areas (preferably within their natural home range) prior to clearing. During the pre-inspection, any habitat features detected (e.g. hollows, logs, nests) are to be clearly marked with flagging tape to allow easy identification during clearing. A suitably qualified or experienced person is to be present on site to supervise all clearing works to retrieve any fauna detected during works and undertake appropriate action.

Hollow Bearing Tree Protocol

Hollow Bearing Trees are to be felled in a manner that will minimise the risk of injury/mortality of denning/roosting fauna within the limitation of Work Health and Safety (WHS) Guidelines. This is suggested to be achieved by the following general procedure: The Hollow Bearing Trees are to be gently bumped several times prior to removal to encourage any fauna present to vacate. Trees are to be felled in a manner that minimises injury to fauna. This includes gently pushing or ‘soft felling’ with an excavator or gradual cut down by an arborist. A suitably qualified or experienced person is to be present during felling and sectioning of the hollow bearing tree (at the proponent’s cost) in case of animal injury. Hollows are to be inspected for fauna once the tree is deposited. All uninjured animals are to be released in the retained habitat on site. If the hollow is determined to be occupied and fauna do not require assistance (e.g. roosting bats), the entrance is to be blocked, and the log placed in a shaded and protected area on the edge of the site. The obstacle is to be removed just prior to dusk to allow passive escape of the fauna within the log may then be removed if required.

Staged Vegetation Clearing and Rehabilitation

Clearing of the vegetation within the limit of disturbance will be progressively staged and rehabilitated as extraction progresses to minimise the impact to biodiversity.

As part of a Biodiversity Management Plan, the following mitigation and management measures would also be implemented.

- Ensure that soil and seed material is not transferred into the Project Site to prevent weed invasion.
- Ensure that any weed infestations within the Project Site are identified and mapped and appropriate weed management is implemented as outlined in the *Biodiversity Management Plan.*

- Implement a feral animal management program, and outline this program in the *Biodiversity Management Plan,* to reduce and/or manage populations of feral animals at the Project Site including goats, rabbits, pigs, foxes and cats.
- Ensure that site-specific management plans consider measures to mitigate impacts to biodiversity values associated with noise, vibration, waste, lighting, and air pollution.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Residual unavoidable impacts of the Proposed action will be calculated in accordance with the NSW BC Act and the Biodiversity Assessment Method (BAM) (2020). Offsets will be in accordance with the NSW Biodiversity Offset Scheme (BOS). Offsetting obligations will be delivered in accordance with the BOS, with a preference of establishing several Biodiversity Stewardship Agreements (BSA). RZ Resources is currently progressing the establishment of a BSA by engaging with surrounding landholders whose properties have been identified through desktop reviews and fieldwork as containing the required offset trade groups. RZR's priority is to secure offsets through property purchase where possible, followed by sponsored BSAs, with fund contributions considered as a last resort. Any remaining credits would be offset through purchase and retirement of existing biodiversity credits on the market or direct payment to the Biodiversity Conservation Fund (BCF). Please see att 14_Biodiversity Offset Strategic Plan, which demonstrates RZ Resources priorities for Biodiversity Offsetting on the Project Site.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species	Common name
No	No	Actitis hypoleucos	Common Sandpiper
No	No	Apus pacificus	Fork-tailed Swift
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Calidris melanotos	Pectoral Sandpiper
No	No	Gallinago hardwickii	Latham's Snipe, Japanese Snipe
No	No	Hydroprogne caspia	Caspian Tern
No	No	Motacilla cinerea	Grey Wagtail
No	No	Motacilla flava	Yellow Wagtail
No	No	Pandion haliaetus	Osprey

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.5.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

While migratory species of bird may potentially use the Project Site, the Project Site would not be classed as 'important habitat' as defined by the '*Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*' (Department of the Environment 2013), 'important habitat' is defined as:

- Habitat utilised by a migratory species occasionally or periodically within a region that supports an ecological significant proportion of the population of the species, and/or
- Habitat that is of critical importance to the species at particular life-cycle stages, and/or
- Habitat utilised by a migratory species which is at the limit of the species range; and/or
- Habitat within an area where the species is declining.

While some migratory species of bird are likely to use the Project Site and locality, it would not be classed as an 'important habitat' for the following reasons:

- No nationally or internationally important habitats for migratory wetlands species are present in the study area according to the definition provided in the EPBC Act Policy Statement 3.21—Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species (Commonwealth of Australia 2017).
- There are no important habitats in the Project Site for the 10 birds listed as migratory species under the EPBC Act (Commonwealth of Australia 2017), as outlined in the Draft Referral guideline.
- A nationally significant proportion of a listed Migratory bird population would not be supported by the habitats in the Project Site.
- The Project Site does not contain any known important foraging grounds for listed migratory species and the Project would not impact on any significant foraging habitats.
- The Project Site does not contain any known important staging grounds for migration.
- The Project Site does not contain habitat that is at the limit of a listed Migratory species' range.
- The Project Site is not located within an area where a listed Migratory species is known to be declining.

Likelihood of occurrence assessments completed by Biodiversity Australia (refer Att_15_MNES_Table 25) found no migratory species were expected to have more than a low-moderate likelihood of occurrence within the Project Site.

Common Sandpiper (Actitis hypoleucos) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

Uses riparian habitats and wetland edges. Ephemeral waterbodies may form within the Project Site in wet years, but the saline lakes are unsuitable. This species may occur opportunistically; but no critical habitat or important population supported at the Project Site.

Pectoral Sandpiper (Calidris melanotos) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species is a rare migrant and requires freshwater wetlands or marshes. The saline site lakes within the Project Site are unsuitable. This species may occur opportunistically at the adjacent farm dams.

Sharp-tailed Sandpiper (Calidris acuminata) - Likelihood of occurrence: Moderate, Opportunistic. (refer Att_15_MNES_Table 25)

This species prefers shallow freshwater wetlands. The saline lakes within the Project Site are unsuitable. This species may occur opportunistically at farm dams within 10km of the Project Site. No critical habitat or important population occurs in the Project site.

Grey Wagtail (Motacilla cinerea) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species occurs along rivers and freshwater wetlands. The saline lakes within the Project Site are unsuitable. This species may occur opportunistically at adjacent farm dams. No important population or habitat critical to survival occurs within the site.

Yellow Wagtail (Motacilla flava) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species habitat requirements are grasslands, wetlands, open areas near freshwater. Freshwater sources within the Project Site are largely absent, the nearest non-saline waterbodies are farm dams outside the Project Site. The Project Site does not provide critical habitat or support an important population.

Latham's Snipe, Japanese Snipe (Gallinago hardwickii) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species habitat in Australia includes permanent and ephemeral wetlands. Ephemeral wetlands within the Project Site are available only occasionally after significant rainfall.

Fork-tailed Swift (Apus pacificus) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This is a highly aerial species that may pass over the Project Site opportunistically. There is no breeding habitat present and the Project Site does not provide habitat critical to survival. No important population is supported on the Project Site.

Curlew Sandpiper (Calidris ferruginea) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species requires large freshwater or estuarine wetlands. The saline lakes within the Project Site are unsuitable. The Project Site does not support critical habitat or an important population.

Caspian Tern (Hydroprogne caspia) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This species habitat requirements include sheltered coastal embayments, estuaries and sandy or muddy shorelines. This species roosts on sandbars, exposed sand or shell spits, and beaches. They may use Inland wetlands or in large lakes (including ephemeral lakes), waterholes, reservoirs, rivers, and creeks are utilized. This species was not found in 5,500 threatened flora surveys undertaken across a 100m grid over the entire Project Site. There is no suitable habitat for this species on the Project Site.

Osprey (Pandion haliaetus) - Likelihood of occurrence: Low (refer Att_15_MNES_Table 25)

This Fish-eating raptor requires permanent waterbodies. There are no suitable lakes/rivers within the Project Site and the saline lakes are unsuitable. This species may occur regionally, but the Project Site does not provide critical habitat or support important populations.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

Yes

4.1.6.2 Briefly describe why your action has a direct and/or indirect impact on this protected matter. *

The Project would have an impact on “any other action prescribed by the regulations” under Section 21(g) of the EPBC Act. Reg 2.02 of the EPBC Regs states that “a mixture is excessive if … the unsealed source activity value is greater than 106, and the unsealed source activity concentration value is greater than 1” with respect to the values outlined in the Australian Radiation Protection and Nuclear Safety Regulations 2018. Thus, the threshold is 1 Bq/g AND 1000 MBq.

Table 1 (att 18_Nuclear Table 1) shows the Total Bq/g and the MBq/day expected to be produced for each product. The HMC and non-magnetic concentrate would exceed these thresholds based on both the activity concentrations, and the tonnage likely to be present on site after one day of production. HMC would exceed the tonnage after 1 week of production.

The ore, other products, and tailings generated and returned to the mining void would never exceed this threshold based on the lower activity concentrations.

4.1.6.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

No

4.1.6.6 Describe why you do not consider this to be a Significant Impact. *

Two radiological impacts assessments were undertaken namely the:

- Public Radiation Risk Assessment, Copi Project, June 2025; and
- Environmental Radiation Impact Assessment, Copi Project, June 2025.

Public Radiation Risk Assessment (Refer to att 16_Public Radiation Impact Assessment)

This report assesses specifically the radiological risk to members of the public as a result of the Proposed Action. Potential doses from exposure pathways were calculated using internationally and nationally recognised radiation protection documentation and methodologies.

The exposure pathways considered include:

- Inhalation of airborne dust arising from operations;
- Exposure to radon gas from operations;
- Consumption of crops and vegetables grown in impacted soils;
- Consumption of contaminated soils;
- Consumption of personal tank rainwater;
- Consumption of locally grown livestock; and
- Exposure resulting from transport of products on roadways and by rail.
- Exposure from rehabilitated landforms and groundwater seepage.

Air quality data from the Air Quality Report (prepared by Northstar in 2025 for the Copi Mineral Sands Amendment Report (2025)) assumed conservative estimates for dust resuspension and occupancy factors in order to produce a conservative exposure scenario. Under this scenario, the maximum dose estimated, under 'worst-case' environmental conditions is 9.3 µSv – equating to 1% of the upper regulatory limit of 1000 µSv. No mitigations were considered in the calculated doses. When implemented, these are certain to reduce the doses further.

Based on the calculated doses, it was determined that the radiological risk to members of the public was considered negligible as a result of the Proposed Action.

Environmental Radiation Impact Assessment (non-human biota) (Refer to att_17_Environmental Radiation Impact Assessment)

An impact assessment was undertaken to demonstrate that non-human species living in natural habitats are protected against ionising radiation risks from radionuclides released to the environment by the Proposed Action (ARPANSA 2015*).

A Tier 2 assessment was undertaken to identify if an Environmental Reference Level (ERL) was exceeded. Using the ERICA software tool, a site scenario was considered. Namely exposure to biota, in a terrestrial ecosystem within the Project area following 17 years of dust deposition arising from operations. Species of flora and fauna native to the area, and/or referenced in the Biodiversity Development Assessment Report for the Project were considered.

The results of the modelling have identified that dose rate values are at least two orders of magnitude less than the 10 µGy/h screening value applicable to Tier 1 assessments. For completeness a Tier 2 assessment was conducted to allow assessment of Project specific species potentially at risk. Estimated dose rates are less than the respective Tier 2 Environmental Reference Level (40 µGy/h or 400 µGy/h) by several orders of magnitude.

It was concluded that even using extremely conservative criteria, the radiological risk on any non-human biota impacted by the Proposed Action would be negligible.

4.1.6.7 Do you think your proposed action is a controlled action? *

No

4.1.6.9 Please elaborate why you do not think your proposed action is a controlled action. *

In summary,

- Radiation impact assessment of the proposed Action on the members of the public and the environment were identified as negligible; and
- Mitigations and controls will be implemented to minimise these impacts further (discussed in Section 4.1.6.10)

4.1.6.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Mitigation and controls

The primary means of environmental contamination is the resuspension of radioactive material from the Proposed Action and deposition in the environment. The following controls will be implemented:

- The relevant products (heavy mineral concentrate, non-magnetic concentrate and monazite) product would be produced within an access-controlled environment within a sealed building at the Rare Earth Concentrate Plant.
- Heavy mineral concentrate would be dewatered on a concentrate dewatering pad adjacent to the Extraction Area and placed into three sided bins prior to loading into covered trucks for transportation to the Rare Earth Concentrate Plant.
- The non-magnetic concentrate would be loaded into shipping containers within a sealed building at the Rare Earth Concentrate Plant, before the sealed containers are transferred to the Rail Facility.
- The monazite product would be placed into sealed bulka bags or 205L drums which would in turn be placed into shipping containers within a sealed building at the Rare Earth Concentrate Plant, before the sealed containers are transferred direct to port in South Australia.
- The shipping containers for all products would remain sealed until reaching the destination port.

Additional mitigations in place to applicable to materials not exceeding the Nuclear Action thresholds includes:

- Limiting of on-site vehicle speeds to less than or equal to 50 km/hr;
- Ore extraction, dredge mining, wet concentrator plant are all wet processes; and
- Retention of particulate matter in sub-ground-level areas (pit retention).

The Proposed Action including the production, management and transportation of product would be governed by the approved Radiation Management Plan prepared in accordance with Radiation Guideline 2 – Preparation of Radiation Management Plans (NSW EPA, 2018). A draft of that plan has been prepared and would be progressively updated during the detailed design phase of the Project and throughout the life of the Project.

4.1.6.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

No offsets are required for the Nuclear impacts of this Project.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Commonwealth Marine Area protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Great Barrier Reef protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Water resource in relation to large coal mining development or coal seam gas protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Commonwealth Land protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

No Commonwealth Heritage Places Overseas protected matters are in the vicinity of the Project area and therefore will not be impacted by Project.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

None

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

Section 2.5 of the EIS (att 13_EIS Sect 2_Strategic Justification, Section 2.5) outlines the feasible alternatives that have been considered during the design and planning phase of the Project. These are summarised as follows.

Alternate Mining Methods

The alternative of extracting the identified resources using conventional dry open cut mining operations was considered.

Conventional dry open cut mining operations would have the advantage of the following:

- More selective mining of ore that would have resulted in a higher head grade for the extracted ore as a result of minimised intermingling with overburden.
- Minimised additional capital costs early in the life of the Project.

Notwithstanding these benefits, this alternative would have resulted in the following less favourable outcomes.

- Advanced dewatering would be required, resulting in substantially more water being required to be withdrawn from the Upper Aquifer, and re-injection of excess water back into the aquifer. For comparison, early estimates for advanced dewatering for a substantially shallower mining operation indicated that between 7.5GLpa and 32.2GLpa of water would be required to be withdrawn from the aquifer. By contrast, the Project as proposed has a peak extraction rate of approximately 4.8GLpa in Year 1 of mining operations, reducing to between 2,817MLpa and 1,278MLpa in Years 2 to 15.
- Significant water management and processing facilities would be required, causing substantial increases in the additional capital costs required.
- Substantially more mobile plant would be required, with associated additional noise, dust and greenhouse gas emissions.

Alternate Site Access Options

RZ Resources proposes to access the Mine Site from the east via the Silver City Highway, Anabranch Mail Road and a proposed Site Access Road.

An alternate option was to access the Mine Site from the west via Springwood Road. This option would have the following advantages.

- A shorter transportation distance for mine products to be transported to the Rail Facility.
- The upgraded Springwood Road would provide greater community benefits.
- Site access would be primarily via the public road network, thereby minimising the requirement for easements across private land.

However, access via Springwood Road would result in the following less favourable outcomes.

- Greater distance of road upgrades required (approximately 57km of Springwood Road to be upgraded compared with approximately 27km of Site Access Road to be constructed and 6.1km of Anabranch Mail Road to be upgraded).
- The tenure of the Springwood Road reserve where it passed through the Tarawi Nature Reserve is uncertain.
- A greater travel distance for those accessing the Mine Site from the south.

As a result, the Applicant elected to access the Mine Site from the east via Anabranch Mail Road.

Not Taking the Action

The consequences of not proceeding with the Project relate principally to the lost opportunity to mine the identified mineral sands resources and any further resources that may be identified throughout the life of the Project. RZ Resources is confident that it has presented a Project that not only seeks the efficient development of the known deposits but has taken into consideration the likely impact of the Project on the local community and the predicted short-, medium- and long-term environmental outcomes. It is concluded that the Project, as presented, provides an acceptable balance of environmental and social outcomes in achieving the economic benefits arising from a substantial mining operation in an area with few other industries.

5. Lodgement

5.1 Attachments

1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 1_Project Description.pdf The Project Description for the Copi Mineral Sands Project (Amendment Report)	19/08/2025	No	High

1.2.6 Commonwealth or state legislation, planning frameworks or policy documents that are relevant to the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 12_Land Zoning.jpg A figure showing the Land Zoning in and around the Copi Project Site	07/05/2025	No	High
#2.	Document	att 2_Strategic Context.pdf Copi Mineral Sands Strategic Context - Amendment Report	22/07/2025	No	High
#3.	Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - this version contains sensitive species information	29/07/2025	Yes	High
#4.	Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	29/07/2025	No	High
#5.	Document	att_20_Intersection plans.pdf Intersection upgrade plans for Anabranch Mail Road and the Silver City Highway	08/10/2025	No	High

1.2.7 Public consultation regarding the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 5_EIS Sect 5.pdf Section 5 of the 2024 EIS for Copi Mineral Sands Project	01/05/2024	No	High
#2.	Document	att 6_Amendment Report Sect 5.pdf Section 5 of the Amendment Report for the Copi Mineral Sands Project	18/08/2025	No	High

1.3.2.17 (Person proposing to take the action) Proposer's history of responsible environmental management

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 9_Draft Audit Report.pdf The draft audit report of EL8312 and	30/05/2025	No	High

EL9496 Copi Exploration Project

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att_19_RZ Rehab Risk Assessment.pdf RZ Resources Rehabilitation Risk Assessment for Exploration	30/10/2025	No	High
#2.	Document	att_7_RZ Environmental Policy Draft.pdf RZ Resources draft Environmental Policy	01/08/2024	No	High
#3.	Document	att_8_RZ Exploration Rehab SOP.pdf RZ Resources Standard Operating Procedure for Exploration Site Rehabilitation	12/05/2025	No	High

2.2.5 Tenure of the action area relevant to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 11_Land Holders.jpg A figure from the Copi Amendment Report showing landholders surrounding the Project Site.	11/07/2025	No	High

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 12_Land Zoning.jpg A figure showing the Land Zoning in and around the Copi Project Site	08/05/2025	No	High

3.1.2 Existing or proposed uses for the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 10_Final Landform.jpg A figure showing the proposed final landform for the Copi Project	13/06/2025	No	High

3.2.1 Flora and fauna within the affected area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral	28/07/2025	Yes	High

		Sands - this version contains sensitive species information			
#2.	Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	28/07/2025	No	High

3.2.2 Vegetation within the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - this version contains sensitive species information	28/07/2025	Yes	High
#2.	Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	28/07/2025	No	High

3.3.2 Indigenous heritage values that apply to the project area

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 4_928_Aboriginal Heritage.pdf The Amendment Report summary of the ACHAR prepared for the Copi Mineral Sands Project	18/08/2025	No	High

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - this version contains sensitive species information	28/07/2025	Yes	High
#2.	Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	28/07/2025	No	High

4.1.4.6 (Threatened Species and Ecological Communities) Why you do not consider the direct and/or indirect impact to be a Significant Impact

Type	Name	Date	Sensitivity	Confidence
#1. Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - this version contains sensitive species information	28/07/2025	Yes	High
#2. Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	28/07/2025	No	High

4.1.4.9 (Threatened Species and Ecological Communities) Why you do not think your proposed action is a controlled action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 3a_Copi MNES.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - this version contains sensitive species information	28/07/2025	Yes	High
#2.	Document	att 3b_Copi MNES_Redacted.pdf Matters of National Environmental Importance Report for Copi Mineral Sands - Redacted sensitive species information	28/07/2025	No	High

4.1.4.10 (Threatened Species and Ecological Communities) Avoidance or mitigation measures proposed for this action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 11_Land Holders.jpg A figure from the Copi Amendment Report showing landholders surrounding the Project Site.	10/07/2025	No	High

4.1.4.11 (Threatened Species and Ecological Communities) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 14_Biodiversity Offset Strategic Plan.pdf RZ Resources Biodiversity Offset Strategic Plan for the Copi Mineral Sands Project.	13/10/2025	No	High

4.1.5.3 (Migratory Species) Why your action is unlikely to have a direct and/or indirect impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document				

att_15_MNES_Table 25.pdf Table 25 from the MNES report which includes occurrence information on migratory species	07/10/2025	No	High	

4.1.6.2 (Nuclear) Why your action has a direct and/or indirect impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 18_Nuclear Table 1.pdf A table showing the Total Bq/g and the MBq/day expected to be produced for each product	20/10/2025	No	High

4.1.6.6 (Nuclear) Why you do not consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 16_Public Radiation Impact Assessment.pdf The Public Radiation Impact Assessment prepared for the Copi Mineral Sands Amendment Report	10/07/2025	No	High
#2.	Document	att_17_Environmental Radiation Impact Assessment.pdf The Environmental Radiation Impact Assessment prepared for the Copi Mineral Sands Amendment Report	16/06/2025	No	High

4.3.8 Why alternatives for your proposed action were not possible

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	att 13_EIS Sect 2_Strategic Context.pdf Section 2 of the 2024 EIS for the Copi Mineral Sands Project, as exhibited.	24/04/2024	No	High

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	31002033712
Organisation name	R.W. Corkery & Co
Organisation address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067
Representative's name	Rebecca Raynal
Representative's job title	Graduate Environmental Consultant
Phone	0429 635 975
Email	rebecca@rwcorkery.com
Address	North Tower, Suite 12.01, 1/5 Railway St, Chatswood NSW 2067

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ By checking this box, I, **Rebecca Raynal of R.W. Corkery & Co**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	23160863892
Organisation name	RZ Resources LTD
Organisation address	Level 8/10 Eagle St, Brisbane City QLD 4000
Representative's name	Ashley Beechey

Representative's job title	Manager - Environmental and Approvals
Phone	0419 008 736
Email	abeechey@rzresources.com
Address	Level 8/10 Eagle St, Brisbane City QLD 4000

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ I, **Ashley Beechey of RZ Resources LTD**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.

✔ Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ I, **Ashley Beechey of RZ Resources LTD**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.