

Environmental Assessment Report  
Tasmanian Advanced Minerals Pty  
Ltd

**South Blackwater Silica Mine,  
Blackwater Road, Temma**

*November 2024*



ENVIRONMENT PROTECTION AUTHORITY

## Environmental Assessment Report

Proponent	Tasmanian Advanced Minerals Pty Ltd (TAM)
Proposal	South Blackwater Silica Mine
Location	Blackwater Road, Tasmania approximately 12 km southwest of Trowutta Note: the property address is listed as Kaywood Road, Temma. Property ID: 3383975
Class of Assessment	2B
PCE no.	10923
Permit Application No.	DA 2024/024 (Circular Head Council)
myDAS Folder No.	21/2984
myDAS Document No.	D24-232845

## Assessment Process Milestones

Date	Milestone
19 July 2021	Notice of Intent lodged
31 August 2021	Guidelines Issued
7 March 2024	Permit Application submitted to Council
31 March 2024	Referral received by the Board
10 July 2024	Start of public consultation period
7 August 2024	End of public consultation period
1 October 2024	Date draft conditions issued to proponent
12 November 2024	Statutory period for assessment ends

## Glossary/Acronyms

Term	Detail
Board	Board of the Environment Protection Authority
DBH	Diameter at breast height
EER	Environmental Effects Report
EIA	Environmental impact assessment
EMPCA	<i>Environmental Management and Pollution Control Act 1994</i>
EMPCS	Environmental management and pollution control system
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i>
GFC	Giant freshwater crayfish ( <i>Astacopsis gouldi</i> )
LUPAA	<i>Land Use Planning and Approvals Act 1993</i>
NCA	<i>Nature Conservation Act 2002</i>
NOI	Notice of Intent
NRE	Department of Natural Resources and Environment Tasmania
NVA	Natural Values Atlas
PAF	Potentially Acid Forming
QCP	Quarry Code of Practice (EPA 2017)
RMPS	Resource Management and Planning System of Tasmania
SD	Sustainable development
STT	Sustainable Timbers Tasmania
TAM	Tasmanian Advanced Minerals Pty Ltd
TMO	Tasmanian masked owl ( <i>Tyto novaehollandiae</i> subsp. <i>castanops</i> )
TNVC	Threatened Native Vegetation Community
TPZ	Tree protection zone
TSPA	<i>Threatened Species Protection Act 1995</i>
WTE	Tasmanian wedge-tailed eagle ( <i>Aquila audax</i> subsp. <i>fleayi</i> )

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## Report Summary

This report provides an environmental assessment of the South Blackwater Silica Mine by Tasmanian Advanced Minerals Pty Ltd (TAM).

TAM produces high quality silica for use in smart screen technology including laptops, phones and TVs. The proposal involves the extraction of silica flour from two deposits – Big Keppel and Kuppe - within mining lease 3M/2020, adjacent to the existing Blackwater Mine. The proposed combined annual extraction and processing quantity for both Big Keppel and Kuppe deposits at South Blackwater are 58,000 cubic metres/75,000 tonnes.

Silica flour will be extracted with an excavator, screened and stockpiled prior to transport to TAM's Wynyard processing facility. Intermittent blasting of rock intrusions will be used to facilitate excavation at a maximum of once per year. Stockpiling of material will occur at TAM's adjacent Blackwater Mine and then at South Blackwater using existing internal haul roads.

This report has been prepared based on information provided in the permit application and Environmental Effects Report (EER). Relevant government agencies and the public were consulted, and their submissions considered as part of the assessment.

**Appendix 1** contains details of matters raised by the public and referral agencies during the consultation process.

**Appendix 2** contains a table of the proponent's proposed management measures.

**Appendix 3** contains the environmental permit conditions for the proposal.

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## Table of Contents

1	Approval Process.....	6
2	SD Objectives and EIA Principles .....	7
3	The Proposal .....	8
4	Project Rationale and Alternatives .....	15
5	Public and Agency Consultation.....	16
6	Evaluation of Environmental Issues .....	17
6.1	General conditions .....	17
6.2	Issue 1: Natural Values – flora and vegetation communities.....	18
6.3	Issue 2: Natural values – geoconservation and karst systems.....	24
6.4	Issue 3: Natural values – fauna.....	25
6.5	Issue 4: Water Quality.....	34
6.6	Issue 5: Air Quality .....	39
6.7	Issue 6: Noise.....	41
6.8	Issue 7: Waste and environmentally hazardous substances.....	42
6.9	Issue 8: Weed Management.....	44
6.10	Issue 9: Rehabilitation.....	45
7	Issues not assessed by the Board.....	47
7.1	Issue 1: Aboriginal Heritage.....	47
8	Report Conclusions .....	49
	Report Approval.....	50
9	References.....	51
10	Appendices.....	52
	Appendix 1: Summary of public and agency submissions .....	53
	Appendix 2: Table of proponent management measures.....	55
	Appendix 3: Permit conditions – Environmental No: 10923.....	61

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## I Approval Process

The Board of the Environment Protection Authority (the Board) received a Notice of Intent in relation to this proposal on 19 July 2021.

An application for a permit under the *Land Use Planning and Approvals Act 1993* (LUPAA) in relation to the proposal was submitted to Circular Head Council on 7 March 2024.

This proposal is defined as a 'level 2 activity' under clause 5(c) and 6(a), Schedule 2 of the *Environmental Management and Pollution Control Act 1994* (EMPCA), being a mine and materials handling facility.

Section 25(1) of the EMPCA required Council to refer the application to the Board of the Environment Protection Authority (the Board) for assessment under EMPCA. The application was received by the Board on 31 March 2024.

The Board required that information to support the proposal be provided in the form of an Environmental Effects Report (EER), prepared in accordance with the Guidelines issued by the Board on 31 August 2021. Several drafts of the EER were submitted to EPA for review against the Guidelines prior to finalisation and acceptance on behalf of the Board on 21 June 2024.

The EER was released for public inspection for a 28-day period commencing on 10 July 2024. Advertisements were placed in *The Advocate* and on the EPA website. The EER was also referred to relevant government agencies for comment. One representation was received, and several government agencies commented on the EER.

The proposal has been determined by the Australian Government to be a 'controlled action' under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The matters protected by Part 3 of the EPBC Act are sections 18 and 18A (listed threatened species and communities). The proposal has not been assessed under the bilateral agreement between the Commonwealth and Tasmania and will require separate environmental approval by the Commonwealth Minister for the Environment. As at the date of this report, the Commonwealth assessment decision has not been made.

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## 2 SD Objectives and EIA Principles

The proposal must be considered by the Board in the context of the objectives of the Resource Management and Planning System of Tasmania (RMPS), and the Environmental Management and Pollution Control System (EMPCS). Both sets of objectives are specified in Schedule 1 of EMPCA.

The functions of the Board are to administer and enforce the provisions of EMPCA, and to use its best endeavours to further the RMPS and EMPCS objectives. The Board must assess the proposal in accordance with the Environmental Impact Assessment Principles defined in Section 74 of EMPCA.

### 3 The Proposal

The main characteristics of the proposal are summarised below. A detailed description of the proposal is provided in Part B of the EER.

#### Summary of the proposal’s main characteristics

##### Activity

The proposal involves the extraction and screening of a maximum total of 75,000 tonnes of silica flour (sand) per year, from two deposits, Kuppe and Big Keppel. Silica flour will be extracted using an excavator, mechanically screened and stockpiled prior to transport to TAM’s Wynyard processing facility for blending and export. Occasional blasting (~once per year) will be required to clear rock intrusions into the silica resource.

##### Location and planning context

<b>Location</b>	(PID 3383975) Blackwater Road, Tasmania. 12km south of Trowutta and 40km south of Smithton.
<b>Land zoning</b>	Rural Zone under the Tasmanian Planning Scheme. Extractive Industries are ‘Permitted’ in this zone.
<b>Land tenure</b>	<i>Permanent Timber Production Zone</i> , under the authority of Sustainable Timber Tasmania
<b>Mining lease</b>	3M/2020
<b>Lease area</b>	1676 hectares
<b>Bond</b>	Pending variation of the mining lease.

##### Activity site

<b>Land Use</b>	The site is covered with mature regrowth vegetation from historic forestry operations. Gravel forestry roads currently exist and provide access to the site/mining lease (ML) off Blackwater Road.
<b>Topography</b>	The topography at South Blackwater ranges from approximately 50-150 m Australian height datum (AHD). The Big Keppel and Kuppe silica deposits are at an elevation of approximately 80m and 60m AHD respectively, along two ridgelines.
<b>Geology</b>	<p>The EER states that the mapped geology at Big Keppel is:</p> <ul style="list-style-type: none"> <li>• Described as silicified carbonate rocks, and/or clayey pug, derived from the Smithton Dolomite.</li> <li>• Within a mapped area of karst (Roger River - Ekberg 2) that extends throughout the north-eastern portion of South Blackwater, listed geoconservation site (Roger River - Ekberg Karst Systems).</li> </ul> <p>The EER states that the mapped geology at Kuppe is:</p> <ul style="list-style-type: none"> <li>• Described as interbedded siliceous gravel, quartz sand and clay.</li> <li>• Within a mapped area of karst (Salmon - Blackwater) that extends throughout the western portion of South Blackwater.</li> </ul> <p>Both descriptions are consistent with observations onsite during TAM’s exploration program.</p>
<b>Soils</b>	The mapped dominant soils at both Big Keppel and Kuppe are rudisol and sub-dominant soils are kandosol. There is a mapped area of low probability (6-70% chance of occurrence) of encountering acid sulfate soils (ASS) in the north-eastern portion of the proposal site where Road 1E will pass through. However, there are no mapped areas of ASS within the Big Keppel or Kuppe deposits.



<b>Hydrology</b>	<p>Two watercourses occur in the vicinity of the proposed Big Keppel pit, being Keppel Creek (northeast of pit) and Stephens Rivulet (west of pit). One watercourse occurs in the vicinity of the proposed Kuppe pit, being South Blackwater Rivulet (west of pit). All watercourses are small headwaters of the Arthur River. No groundwater was intercepted in test pits up to 6m deep within the pit footprint.</p>
<b>Natural Values</b>	<p>The following threatened species are likely to occur on site, namely:</p> <ul style="list-style-type: none"> <li>• Pretty leek-orchid (<i>Prasophyllum pulchellum</i>)</li> <li>• Lichen <i>Menegazzie minuta</i></li> <li>• Lichen <i>Hypotrachyna laevigata</i></li> <li>• Tasmanian devil (<i>Sarcophilus harrisii</i>)</li> <li>• Spotted-tailed quoll (<i>Dasyurus maculatus</i> subsp. <i>maculatus</i>)</li> <li>• Giant Freshwater Crayfish (<i>Astacopsis gouldi</i>)</li> <li>• Tasmanian wedge-tailed eagle (<i>Aquila audax</i> subsp. <i>fleayi</i>)</li> <li>• White-bellied sea-eagle</li> <li>• Tasmanian masked owl (<i>Tyto novaehollandiae</i> subsp. <i>castanops</i>)</li> <li>• Grey Goshawk (<i>Accipiter novaehollandiae</i>)</li> <li>• Salmon river road hydrobiid snail (<i>Beddomeia gibba</i>)</li> <li>• Arthur River freshwater snail (<i>Beddomeia mesibovi</i>)</li> <li>• Salmon river freshwater snail (<i>Beddomeia salmonis</i>)</li> <li>• Williamson Creek freshwater snail (<i>Beddomeia topsiae</i>)</li> <li>• Keeled snail (<i>Tasmaphena lamproides</i>)</li> <li>• Marrawah skipper (<i>Oreisplanus munionga larana</i>).</li> </ul> <p>Six vegetation communities occur within the project footprint, namely:</p> <ul style="list-style-type: none"> <li>• Leptospermum Melaleuca swamp forest (TasVEG Code: NLM)</li> <li>• Nothofagus – Phyllocladus short rainforest (TasVEG Code: RMS)</li> <li>• Nothofagus – Atherosperma rainforest (TasVEG Code: RMT)</li> <li>• <i>Eucalyptus obliqua</i> forest with broad-leaf shrub (TasVEG Code WOB)</li> <li>• <i>Eucalyptus obliqua</i> forest over Leptospermum (TasVEG Code WOL)</li> <li>• <i>Eucalyptus obliqua</i> forest over rainforest (TasVEG Code WOR)</li> </ul> <p>In addition, one Threatened Native Vegetation Community (TNVC) listed under the <i>Nature Conservation Act 2002</i> (NCA), <i>Eucalyptus brookeriana</i> wet forest (TasVEG Code: WBR)<sup>1</sup> also occurs on The Land.</p>

### Location region

<b>Climate</b>	<p>With reference to the Luncheon Hill (Forestry) Station ID 091259 (1995 to 2022), which is approximately 15 km to the east of South Blackwater:</p> <ul style="list-style-type: none"> <li>• Mean annual rainfall is 1497.2 mm</li> <li>• Minimum temperature 7.5 degrees Celsius</li> <li>• Maximum temperature is 15.6 degrees Celsius</li> <li>• Predominant 0900 wind direction is from the south; and</li> <li>• Predominant 1500 wind direction is from the south-west.</li> </ul>
<b>Surrounding land zoning, tenure and uses</b>	<ul style="list-style-type: none"> <li>• The site falls within the locality known as takayna/the Tarkine.</li> <li>• Surrounding land to the north, north-east, south and west is zoned Rural Zone and to the south-east is zoned Environmental Management Zone in accordance with the Tasmanian Planning Scheme.</li> </ul>

<sup>1</sup> Tasmanian forests and woodlands dominated by black gum (*Eucalyptus ovata*) or Brooker's gum (*E. brookeriana*) is also a Matter of National Environmental Significance under the Commonwealth EBPC Act.

	<ul style="list-style-type: none"> <li>• Surrounding land to the north- north-east and west is Permanent Timber Production Zone under the <i>Forest Management Act 2013</i>.</li> <li>• Surrounding land to the south-east is Regional Reserve under the <i>Nature Conservation Act 2002</i>, namely, the Balfour Track Regional Reserve and the Sumac Regional Reserve; and</li> <li>• Surrounding land to the south and further to the west is Future Potential Production Forest under the <i>Forestry (Rebuilding the Forest Industry) Act 2014</i>.</li> <li>• The nearest sensitive receptors are rural residences located approximately 6km to the north-east of South Blackwater.</li> </ul>
<p><b>Species and vegetation communities of conservation significance</b></p>	<ul style="list-style-type: none"> <li>• Pretty leek-orchid (<i>Prasophyllum pulchellum</i>)</li> <li>• <i>Eucalyptus brookeriana</i> wet forest (TasVEG Code: WBR)</li> <li>• Lichen <i>Menegazzie minuta</i></li> <li>• Lichen <i>Hypotrachyna laevigata</i></li> <li>• Tasmanian devil (<i>Sarcophilus harrisii</i>)</li> <li>• Spotted-tailed quoll (<i>Dasyurus maculatus maculatus</i>)</li> <li>• Giant Freshwater Crayfish (<i>Astacopsis gouldi</i>)</li> <li>• Tasmanian wedge-tailed eagle (<i>Aquila audax fleayi</i>)</li> <li>• White-bellied sea-eagle</li> <li>• Tasmanian masked owl (<i>Tyto novaehollandiae castanops</i>)</li> <li>• Grey Goshawk (<i>Accipiter novaehollandiae</i>)</li> <li>• Salmon river road hydrobiid snail (<i>Beddomeia gibba</i>)</li> <li>• Arthur River freshwater snail (<i>Beddomeia mesibovi</i>)</li> <li>• Salmon river freshwater snail (<i>Beddomeia salmonis</i>)</li> <li>• Williamson Creek freshwater snail (<i>Beddomeia topsiae</i>)</li> <li>• Keeled snail (<i>Tasmaphena lamproides</i>)</li> <li>• Marrawah skipper (<i>Oreisplanus munionga larana</i>)</li> </ul>

## Proposed infrastructure

<b>Major equipment</b>	<ul style="list-style-type: none"> <li>• 13-30t excavator (up to three)</li> <li>• 30t articulated dump truck (up to three)</li> <li>• Vibratory 50 (mm) aperture screen</li> <li>• DL250 wheel loader (one)</li> <li>• 10,000 litre water cart for dust suppression</li> </ul>
<b>Other infrastructure</b>	<p>Existing access roads need to be resurfaced and cleared of overgrown vegetation.</p> <p>Big Keppel:</p> <ul style="list-style-type: none"> <li>• Construction of 1.3km x 10m access road (Road IE)</li> <li>• Sediment control ponds (two) and surface water drains</li> <li>• Waste (out of specification) silica storage area.</li> </ul> <p>Kuppe:</p> <ul style="list-style-type: none"> <li>• Construction of 880m x 8m access road (Road ID)</li> <li>• Sediment control ponds (two)</li> </ul> <p>No amenities (i.e. crib rooms, toilet and washing facilities, rubbish bins) are proposed within South Blackwater, as staff will utilise existing amenities at the adjacent Blackwater activity.</p>
<b>Total areas of disturbance/vegetation clearance</b>	<p>A total area of 44.98 hectares (ha) will be disturbed and/or cleared, comprised of:</p> <ul style="list-style-type: none"> <li>• Big Keppel - 30.21 ha;</li> <li>• Kuppe - 12.16 ha;</li> <li>• Road IE (to Big Keppel) - 1.2 ha; and</li> <li>• Road ID (to Kuppe) - 0.75 ha.</li> </ul>

## Inputs

<b>Water</b>	Water is only required for potential dust suppression and will be sourced from the onsite sediment control ponds.
<b>Energy</b>	Fuel (diesel) for machinery associated with extraction and screening of the silica resource, and vehicles for transport.
<b>Other raw materials</b>	None.

## Wastes and emissions

<b>Liquid</b>	Stormwater runoff from extraction and stockpile areas (directed into a sediment control pond).
<b>Atmospheric</b>	Silica flour dust blow-off from stockpiles and during screening.
<b>Solid</b>	<ul style="list-style-type: none"> <li>• Waste rock, vegetation, out of specification silica.</li> <li>• General daily staff refuse e.g. food scraps, packaging, paper.</li> <li>• Used heavy machinery consumables (e.g. oil filters, tyres, damaged hardware (i.e. excavator tracks, bearings), used screens).</li> </ul>
<b>Controlled wastes</b>	Waste spill clean-up materials in the case of any accidental fuel/oil spills.
<b>Noise</b>	<ul style="list-style-type: none"> <li>• From excavator, wheel loader, dump truck, screening equipment and vehicles on site and going to and from the site.</li> </ul>

	<ul style="list-style-type: none"> <li>Blasting required approximately once per year to clear large rock intrusions.</li> </ul>
<b>Greenhouse gases</b>	Although the EER does not specifically discuss greenhouse gas emissions, the proposal will generate gases from diesel powered equipment used on site, from truck transport of materials, and light vehicles for access to the site.

### Construction and operations

<b>Proposal timetable</b>	<p>The proponent intends to commence construction of the access road to Big Keppel immediately upon project approval. Stripping of the Big Keppel extraction area will commence once the proposed pre-clearance fauna surveys take place, pending their outcomes.</p> <p>Within two years of project approval, the proponent aims to commence extraction at the second deposit, Kuppe.</p> <p>The forecast life of the project is 20 years' worth of silica extraction.</p>
<b>Operating hours (ongoing)</b>	0700 to 1900 hours Monday to Sunday (52 weeks/year), which aligns with the adjacent Blackwater activity.

### Other key characteristics

The proposed extraction methodology involves first stripping vegetation and topsoil from the deposit and stockpiling overburden as a perimeter embankment.

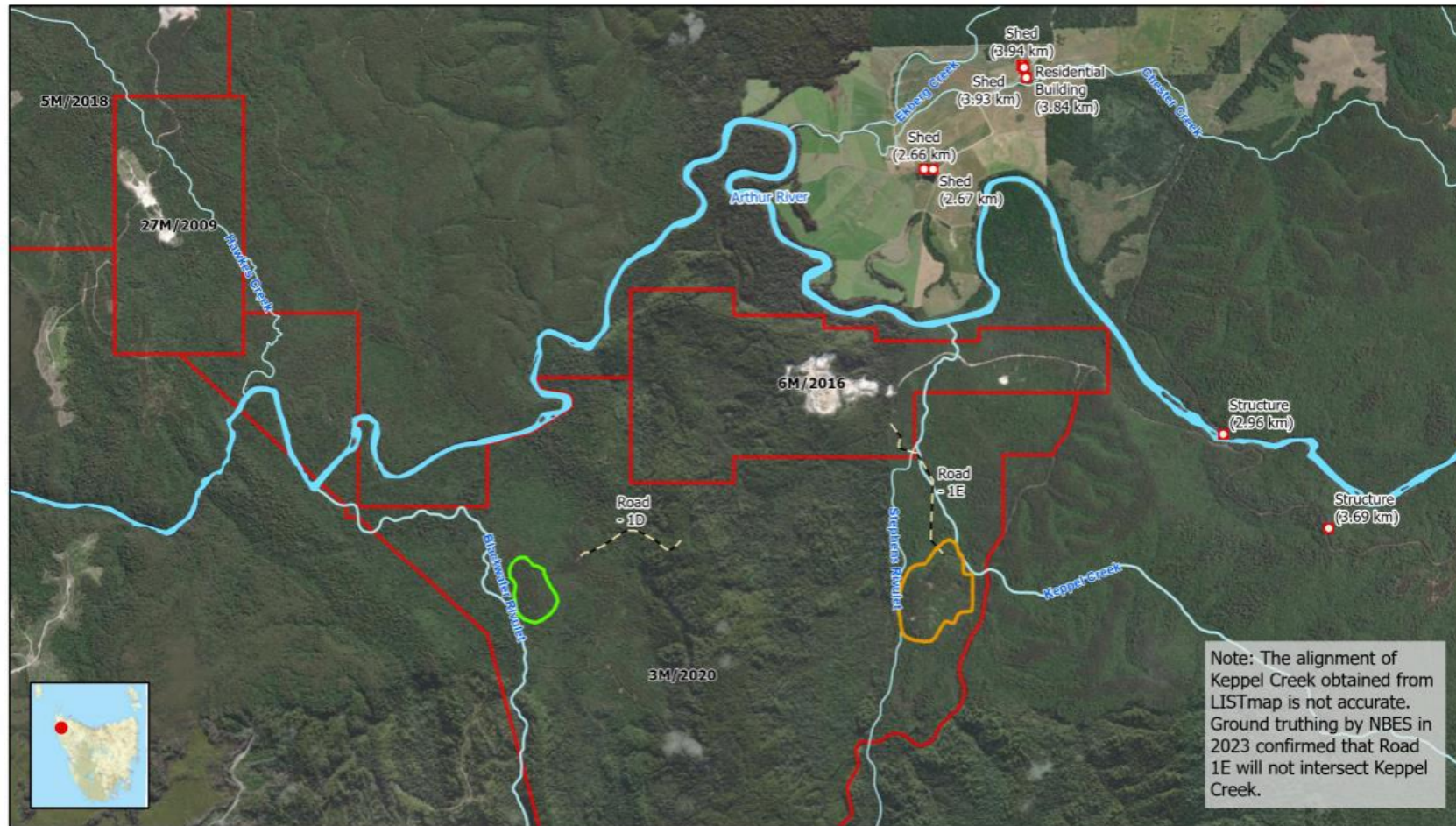
At Big Keppel, extraction will commence in the northern area of the deposit near where the access road (Road 1E) is to be located and will progress towards the south area in benches, from approximately 60 m Australian Height Datum (AHD) initially. Waste silica and other gangue will be stockpiled on the eastern side of the Big Keppel deposit.

At Kuppe, extraction is expected to require a single bench and progress from the northern area, near the existing access road, towards the south. Given the small scale and expected low waste ratio, stockpiling of waste silica and other gangue is not proposed at Kuppe; instead, waste silica will be initially stored behind the mining face, and then backfilled in the mined-out portion of the hill as the face progresses to the south.

As raw silica is excavated (Figure 1) it will be transported by articulated dump truck to the stockpile pad (initially at the existing Blackwater facility and within ~2 years to the newly created pad at Big Keppel). The raw silica will be screened at the stockpile pad at the Blackwater site within the existing regulatory limits imposed for the Blackwater site (77,000m<sup>3</sup> rocks, ores or minerals processed) using a 50mm vibratory screen to remove rocks, tree roots and other impurities, and stockpiled in batches for transport to the processing facility at Wynyard.



**Figure 1: Example photograph of silica extraction taking place, with excavated silica sand being placed directly into articulated dump truck (Figure 8 of EER)**



Tasmanian Advanced Minerals  
Pty Ltd

Watercourses and Nearest  
Sensitive Receptors

**pitt&sherry**



0 0.4 0.8 1.6 km

Coordinate System: GDA 1994 MGA Zone 55  
1:40,000  
When Printed at A4

MAP REF P.23.0519  
AUTHOR JB  
REVISION RevA  
DATE 7/08/2023

DATA Base map from ESRI  
SOURCES Base data from The LIST  
Tasmanian Government  
Project specific data

**Legend**

- |                   |                   |                    |
|-------------------|-------------------|--------------------|
| Disturbance areas | Major watercourse | Sensitive receptor |
| Kuppe             | Stream            | Mining lease       |
| Proposed road     | Arthur River      |                    |

Figure 2: South Blackwater site map, showing deposits, watercourses, proposed roads and nearest sensitive receptors (Figure 2 of EER).

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## 4 Project Rationale and Alternatives

TAM currently extracts silica flour from three other sites (Blackwater, Hawkes Creek and Corinna), for processing at their Wynyard facility. According to the EER, South Blackwater will be an increasingly important replacement resource as these existing resources deplete. The addition of silica flour resource from Big Keppel and Kuppe is estimated to enable TAM's processing operations to continue for approximately 20 years.

The EER states that without additional supply of silica, TAM's lifespan as a business will shorten. Approval of this proposal will provide resource security for TAM and improves their ability to meet increasing silica specification standards. While resource from Big Keppel will form the major component of the feed blend, the Kuppe deposit has distinctive silica qualities allowing it to be used to produce blends for speciality products.

Over time, South Blackwater will eventually produce more than the Blackwater site as resources there deplete. The location of this proposal adjacent to the existing Blackwater activity allows TAM to utilise existing equipment, amenities, staff and contractors from Blackwater, as well as the existing internal road connectivity between the sites. Therefore, the activity can continue to provide secure work to existing employees.

The EER states that various other site options were explored, but the South Blackwater resources provide the largest long-term supply to secure TAM's ongoing operations. No proposal design alternatives have been presented in the EER, though it states that due to the similarities in geological formation and topographical form to Blackwater, the same extraction and rehabilitation methodology can also be applied in the proposed South Blackwater operation. The EER advises the nature of the deposits to be extracted is such that there is minimal flexibility in altering the proposed Activity Area without voiding the resource.

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## 5 Public and Agency Consultation

No public submissions were received during the public consultation period.

The EER was also referred to several government agencies with an interest in the proposal. Submissions were received from the following:

- Circular Head Council
- Conservation Assessments, Department of Natural Resources and Environment
- Aboriginal Heritage Tasmania, Department of Premier and Cabinet
- Mineral Resources Tasmania, Department of State Growth
- Nature Positive Regulation Division, Australian Government Department of Climate Change, Energy, the Environment and Water
- Sustainable Timber Tasmania (STT)

The following individuals also provided specialist advice on the EER:

- Regulatory Officer, Environment Protection Authority
- Scientific Officer (Water), Environment Protection Authority

Appendix I of this report contains a summary of the public and government agency submissions received.



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## 6 Evaluation of Environmental Issues

The following environmental issues are considered relevant to the proposal and have been evaluated in this section:

1. Natural values – flora and vegetation communities
2. Natural values – geoconservation and karst systems
3. Natural values – fauna
4. Water Quality
5. Air Quality
6. Noise
7. Waste and Environmentally Hazardous Substances
8. Weed Management
9. Rehabilitation

### 6.1 General conditions

The following general conditions will be imposed on the activity:

- G1** Access to and awareness of conditions and associated documents
- G2** Activity Area
- G3** Incident response
- G4** Proposed change to activity
- G5** Change of responsibility
- G6** Change of ownership
- G7** Complaints register
- G8** Quarry Code of Practice
- G9** Annual Environmental Review
- G10** Amendment of required plans and reports

## 6.2 Issue 1: Natural Values – flora and vegetation communities

### 6.2.1 Potential impacts

The site is located in the northwest of Tasmania within the takayna/Tarkine region. There is potential for a number of threatened species and vegetation communities to occur within the proposed footprint of the activity and broader area surrounding the site. The EER discusses results from desktop and field surveys of the site and proposes mitigation measures to minimise potential harm to threatened species and vegetation communities including additional surveys at key stages throughout the lifetime of the operation.

Land clearance and materials extraction may result in the removal of or damage of threatened species, vegetation communities and habitat for threatened species. Vegetation clearance can also contribute to habitat fragmentation. The South Blackwater proposal will require the clearance of 44.98 ha of native vegetation in total. Clearance will be staged and undertaken in conjunction with progressive rehabilitation. The site includes mature and regrowth eucalyptus forest and rainforest.

Natural values surveys were undertaken in April and November 2021 of five areas: Big Keppel, Kuppe, a gravel area (known as road C) and two roads - Road 1D and 1E (refer to Figure 2 above).

Six vegetation communities were documented within the project footprint, as listed in Table 1 and depicted in Figures 3, 4 and 5, none of which are listed as a TNVC under the NCA. However, 0.3 hectares of one TNVC listed under the NCA occurs on The Land but outside the project footprint. This TNVC is *Eucalyptus brookeriana* wet forest (TasVEG Code: WBR).

**Table 1: Native vegetation communities within the project footprint (Table 12 of EER)**

TASVEG Code	Native vegetation community	Impact footprint (ha)
NLM	<i>Leptospermum Melaleuca</i> swamp forest	2.41
RMS	<i>Nothofagus – Phyllocladus</i> short rainforest	5.98
RMT	<i>Nothofagus – Atherosperma</i> rainforest	6.36
WOB	<i>Eucalyptus obliqua</i> forest with broad-leaf shrub	11.09
WOL	<i>Eucalyptus obliqua</i> forest over <i>Leptospermum</i>	1.24
WOR	<i>Eucalyptus obliqua</i> forest over rainforest	16.90

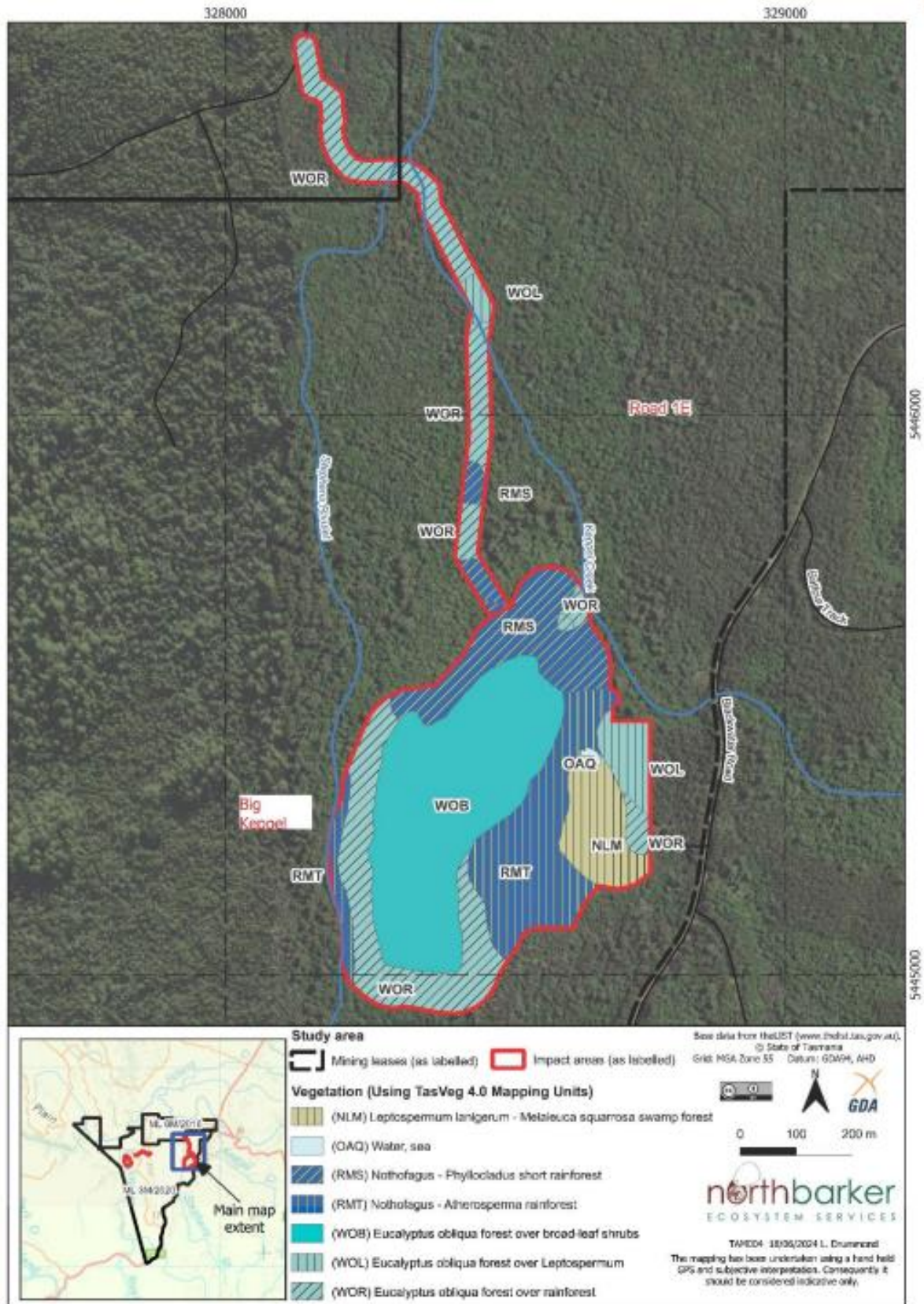


Figure 3: Native vegetation communities within the Big Keppel and Road IE disturbance footprint (Figure 12 in the EER)

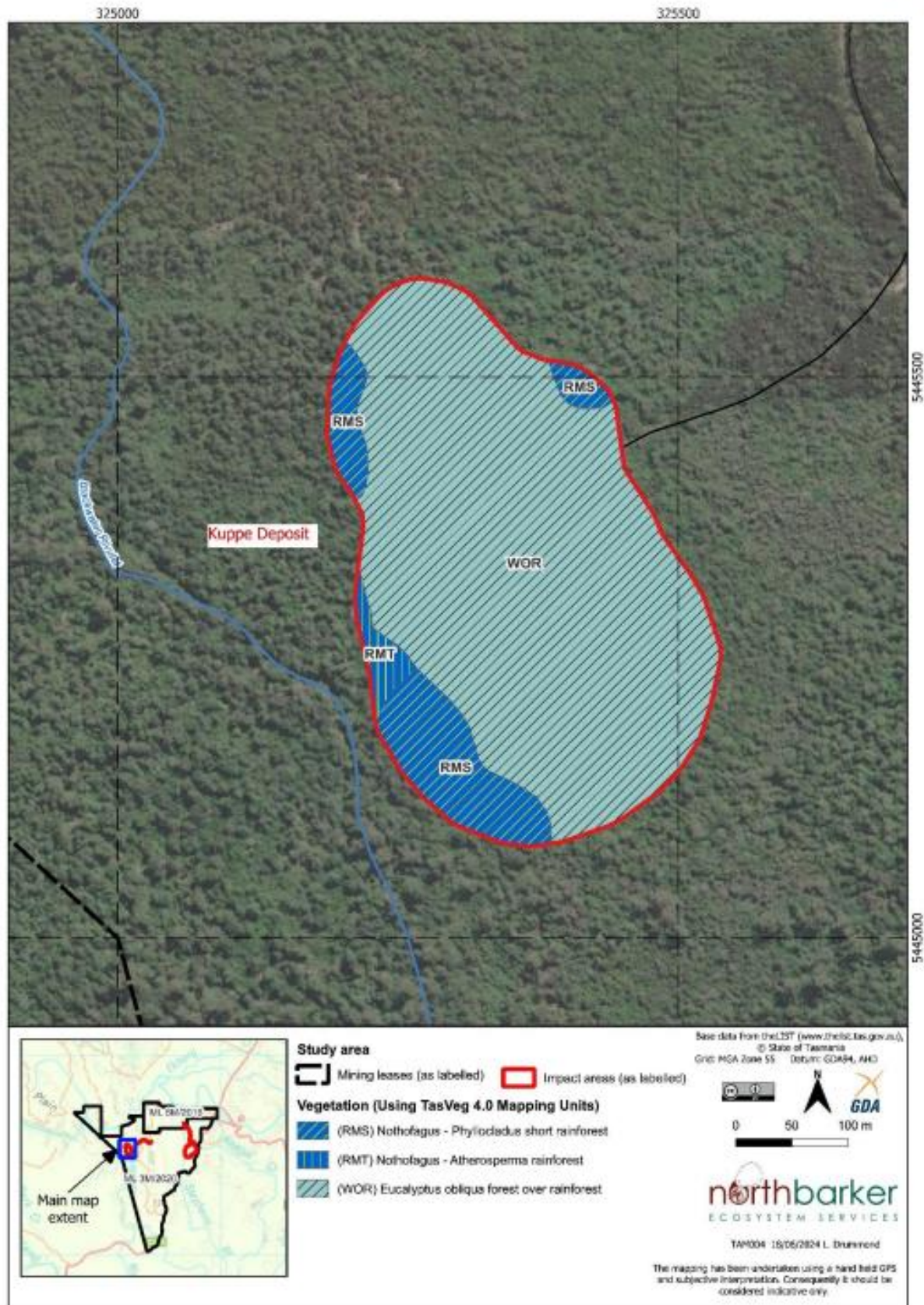


Figure 4: Native vegetation communities within the Kuppe disturbance footprint (Figure 13 in the EER)

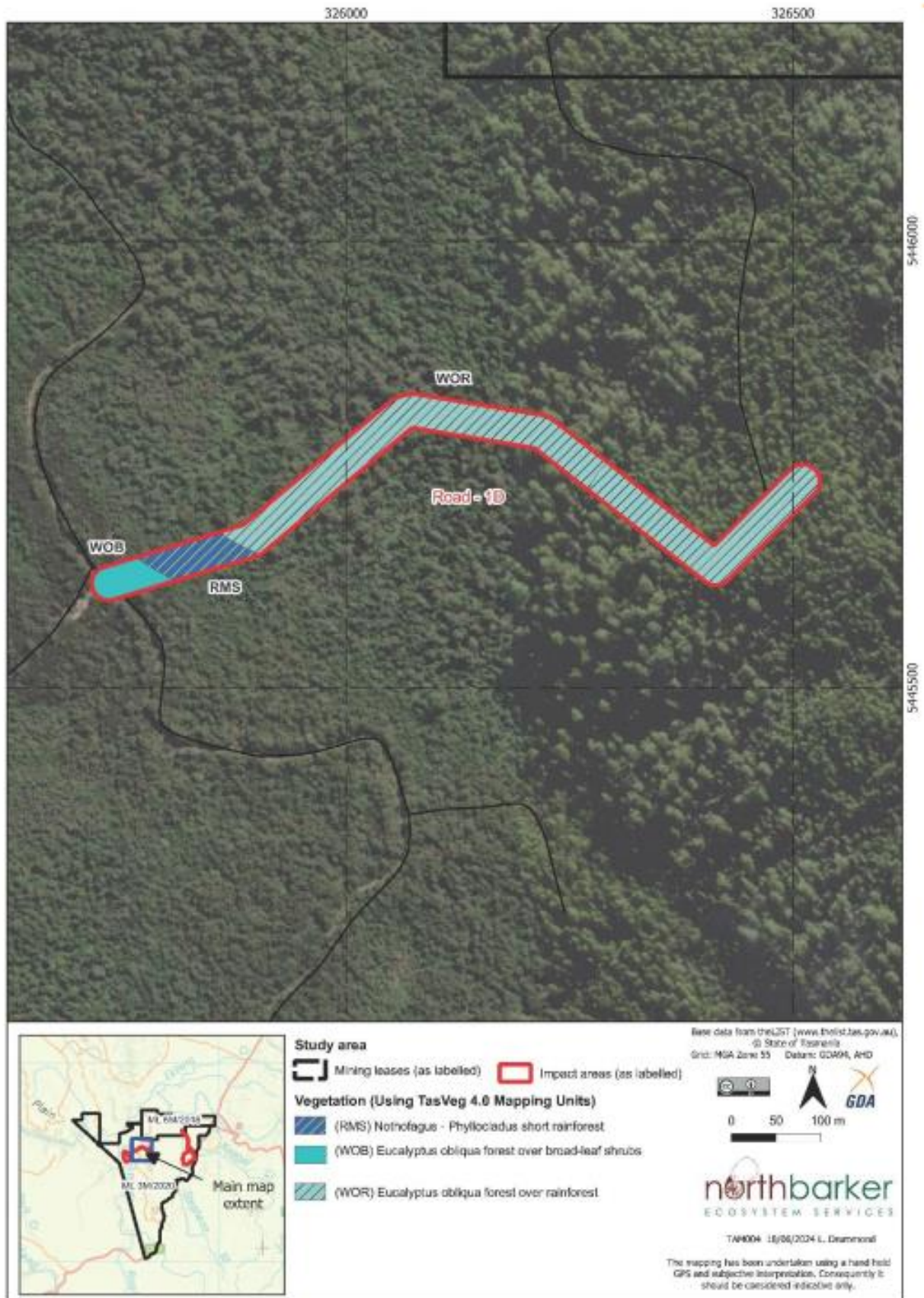


Figure 5: Native vegetation communities within the Road 1D disturbance footprint (Figure 14 in the EER)

The EER identifies one threatened flora species and two threatened lichens, listed in Table 2, as known or likely to occur in the vicinity of the South Blackwater site.

**Table 2: Threatened flora and lichen species identified as known or likely to occur in the vicinity of the South Blackwater site (Section 3.6.1 of EER)**

Species	Status under TSPA	Status under EPBC Act	Known or likely to occur on site
Pretty leek-orchid ( <i>Prasophyllum pulchellum</i> )	Endangered	Critically endangered	Likely
Lichen <i>Menegazzia minuta</i>	Threatened	None	Likely
Lichen <i>Hypotrachyna laevigata</i>	Threatened	None	Likely

The EER states that:

- The nearest record of the pretty leek-orchid (*Prasophyllum pulchellum*) is over 10 km from the site and notes that this species was not observed during on site surveys. The EER states it is highly unlikely for the species to occur on site as the habitat is not suitable.
- *Menegazzia minuta* is restricted to the canopy twigs of leatherwood trees and has only been recorded three times at two locations in north-west Tasmania. The EER further states that surveying for the species is destructive and therefore not justifiable as there is insufficient evidence of the species on site.
- *Hypotrachyna laevigata* is restricted to the bark of *Nothofagus cunninghamii* (myrtle beech) and that there is one record within five kilometres of the site. The EER further states that this lichen habitat is common and widespread in western Tasmania.

### 6.2.2 Management measures proposed in EER

The EER commits to:

- The 0.3 hectares of *Eucalyptus brookeriana* wet forest (TasVEG Code: WBR) is located where the eastern end of Road ID was originally intended to join an existing road however this TNVC has now been excluded from the project footprint;
- Progressive rehabilitation when extraction has ceased at each stage while extraction progresses in other areas; and
- Clearly marking and maintaining the boundaries of the areas to be cleared and confining vehicles and materials within these areas.

### 6.2.3 Public and agency comment

No public comment was received regarding natural values. Conservation Assessments provided extensive comments throughout the assessment process refining the proponent’s commitments to mitigation measures for vegetation communities and threatened flora species. These comments were addressed throughout the assessment process.

### 6.2.4 Evaluation

Exclusion of the *Eucalyptus brookeriana* wet forest TNVC (TasVEG Code: WBR) from the project footprint is supported and as a result, direct impacts to WBR are considered highly unlikely. However, there is still the potential for indirect impacts to this TNVC through possible dust generated by the activity or removal or degradation of surrounding vegetation.

Although no threatened flora or lichen species were observed at the site during field surveys, the EER lists one threatened flora species and two threatened lichen species that have a low likelihood of occurring in the proposal footprint as outlined above.

The findings in the EER regarding these three species are supported, and it is not considered necessary to require specific conditions to manage these species within the Activity Area. However, condition **FFI** is imposed to prohibit native vegetation clearance beyond the Activity Area, which is defined as the areas within Kuppe, Big Keppel, Road 1D and Road 1E. Condition **FFI** also gives effect to the commitments in the EER by requiring the proponent to delineate the boundary of the Activity Area. The potential for indirect impacts to TNVC is also mitigated by the requirement in condition **FFI** for the proponent to undertake the activity in a manner that does not cause degradation or disturbance to any TNVC including *E. brookeriana* wet forest (TasVEG Code: WBR) which occurs on The Land. Condition **DC3** restricts the total amount of disturbed area at any one time to 18 ha within the Activity Area. This condition also requires progressive rehabilitation which is discussed further in section 6.9.

These measures, in conjunction with the mitigation measures for fauna as described in section 6.4, are considered adequate.

### 6.2.5 Conditions

The proponent will be required to comply with the following conditions:

**FFI** No clearance of vegetation

**DC3** Progressive rehabilitation

## 6.3 Issue 2: Natural values – geoconservation and karst systems

### 6.3.1 Potential impacts

Karst systems are known to occur throughout northwest Tasmania and the Arthur River catchment. Evidence of karst environments have been identified by TAM at the adjacent Blackwater activity, prior to vegetation clearing and mining operations and these have been preserved.

Karst systems are the landforms that result from some rock types being relatively soluble in water which can form into sinkholes, springs and streams that sink into subsurface caverns. Karst terrain is hollow and is therefore highly susceptible to groundwater pollution. Streams and surface runoff enter sinkholes and caves, and bypass natural filtration. Underwater networks then transport groundwater. If polluted, groundwater may carry contaminants into wells and springs in the area. The extractive nature of this proposal has the potential to directly impact karst by ground disturbance and indirectly impact karst by pollution of groundwater from surface water (i.e. from accidental spills of hazardous materials, or increased sediment loads). Potential impacts may extend to loss of the conservation value or inherent value of karst landforms.

The proposed Activity Area within Big Keppel is in mapped area of karst (Roger River – Ekberg 2) that extends throughout the north-eastern portion of South Blackwater. The proposed Activity Area within Kuppe is also within a mapped area of karst (Salmon-Blackwater) that extends throughout the western portion of South Blackwater. The EER states that during exploration of the site, no groundwater was encountered. The extraction will involve lowering the height of two hills (the deposits), however the elevation will remain above the surrounding plain. The EER states that it is considered highly unlikely that South Blackwater will impact on groundwater and therefore highly unlikely there will be any impact on karst systems.

The EER commits to the following management measures:

- Clearly marking and maintaining the boundaries of the areas to be cleared and confining vehicles and materials within these areas; and
- A detailed inspection of all cells prior to and post vegetation clearing to identify karst features; where identified, these features will be avoided, and the Director, EPA notified.

### 6.3.2 Public and agency comment

No public comment was received regarding geoconservation and karst. Conservation Assessments provided extensive comments throughout the assessment process refining the proponent's commitments to mitigation measures for geoconservation and karst systems.

### 6.3.3 Evaluation

The EER advises that the soft and unstable nature of sinkholes presents a safety risk to large plant and vehicles and that the silica in and around sinkholes is likely to be too contaminated for extraction and processing. It is therefore in the proponent's interests to identify and avoid potential areas of karst.

The statements in the EER that there is a low likelihood of karst being encountered during extraction within the Activity Area are supported. Given that extraction is from silica deposits above the elevation of the surrounding plain and the statements in the EER that groundwater will not be intersected, it is considered highly unlikely that karst will be encountered because of the activity. However, it is considered appropriate to impose condition **OPI.1** which states that if natural cavities, pipes or cave formations are encountered during carrying out of the activity, operations that may cause damage to the formations must cease immediately and the Director, EPA must be informed within 48 hours. In addition, condition **OPI.2** requires that operations must not recommence except in accordance with the advice of a suitably qualified Earth Science Specialist, and until approved by the Director of the EPA.

### 6.3.4 Conditions

The proponent will be required to comply with the following condition:

- OPI** Karst protection



## 6.4 Issue 3: Natural values – fauna

The takayna/Tarkine region and the proposed site contain potential habitat for a number of threatened fauna species.

### 6.4.1 Potential impacts

The South Blackwater proposal will require the clearance of 44.98 ha of vegetation at stages throughout the life of the operation. As well as the site containing potential breeding habitat for threatened species, it is also likely to contain foraging habitat for these species. The clearance of vegetation in known threatened species habitats can contribute to habitat fragmentation and add to cumulative pressure on these species which may cause population decline. Clearance of vegetation also has the potential to disturb nesting, denning and breeding of threatened species through construction and ongoing operation. Surveys for some species also have the potential to cause disturbance to some species.

The EER identifies 13 threatened fauna species, listed in Table 3 as known or likely to occur in the vicinity of the South Blackwater site. The EER notes that for species such as the Tasmanian devil, spotted-tailed quoll and Tasmanian masked owl, observations of these species were made on site, but no confirmed dens or nests were found within the Activity Areas at the time of survey.

**Table 3: Threatened fauna species identified as known or likely to occur in the vicinity of the South Blackwater site (Section 3.6.1 of EER)**

Species	Status under TSPA	Status under EPBC Act	Known or likely to occur on site
Tasmanian devil ( <i>Sarcophilus harrisi</i> )	Endangered	Endangered	Likely
Spotted-tailed quoll ( <i>Dasyurus maculatus maculatus</i> )	Rare	Vulnerable	Likely
Giant Freshwater Crayfish ( <i>Astacopsis gouldi</i> )	Vulnerable	Vulnerable	Known
Tasmanian wedge-tailed eagle ( <i>Aquila audax fleayi</i> )	Endangered	Endangered	Likely
White-bellied sea-eagle ( <i>Haliaeetus leucogaster</i> )	Vulnerable	None	Likely
Tasmanian masked owl ( <i>Tyto novaehollandiae castanops</i> )	Endangered	Critically endangered	Likely
Grey Goshawk ( <i>Accipiter novaehollandiae</i> )	Endangered	None	Likely
Salmon river road hydrobiid snail ( <i>Beddomeia gibba</i> )	Rare	None	Likely
Arthur River freshwater snail ( <i>Beddomeia mesibovi</i> )	Rare	None	Likely
Salmon river freshwater snail ( <i>Beddomeia salmonis</i> )	Rare	None	Likely
Williamson Creek freshwater snail ( <i>Beddomeia topsiae</i> )	Rare	None	Likely
Keeled snail ( <i>Tasmaphena lamproides</i> )	Rare	None	Likely
Marrawah skipper ( <i>Oreisplanus munionga larana</i> )	Endangered	Vulnerable	Likely

#### **6.4.1.1 Threatened Fauna – Carnivorous Mammals (Tasmanian devil & spotted-tailed quoll)**

There are direct and indirect potential impacts from this proposal to threatened carnivorous mammals, specifically Tasmanian devils and spotted-tailed quolls. The site occurs within the core range for the spotted-tailed quoll but not within the core range of the Tasmanian devil as identified by the EER. No ground burrows/hollows suitable for Tasmanian devils or spotted-tailed quoll were identified across the five study areas. The development footprint's habitat is not considered critical for the survival of these species due to the lack of distinctive structural opportunities to support significant den clusters, such as cavernous rocky outcrops. Nor does the area support suitable soil for burrowing, particularly in the areas of silica deposits.

Direct impacts to these species include the loss of potential denning and foraging habitat. Indirect impacts include the increased risk of road mortality to each species from operational traffic associated with the site.

The greatest risk to these species is during the construction phases where potential denning habitat is being cleared and the ongoing increased risk of road mortality from the operation phase. The EER notes that there will be no intensification of road traffic at high-risk times (from dusk to dawn) from the proposal. Traffic associated with South Blackwater will be offset by a reduction in traffic from the proponent's Blackwater site and the majority of transport will occur during daylight hours. Habitat fragmentation and cumulative impacts are also indirect impacts to the species. Cumulative impacts may include ongoing disturbance over the life of the activity, and impacts over time from existing extractive activities nearby and any additional future developments outside the scope of this assessment that may contribute to habitat loss/disturbance/fragmentation. The proposal is adjacent to similar existing operations by the same proponent.

#### **6.4.1.2 Threatened Avian Fauna (Tasmanian masked owl & Tasmanian wedge-tailed eagle, white-bellied sea-eagle and grey goshawk)**

The avian species that are likely to be impacted by the proposal include the Tasmanian masked owl (TMO) and Tasmanian wedge-tailed eagle (WTE). Suitable nesting habitat for these raptors is present within the project footprint. Direct impacts to these species are the likely loss of potential nesting trees and foraging habitat. The greatest risks for these species from the proposal is loss of potential habitat and disruption during the breeding season from construction noise and operation of the activity. Indirect impacts include habitat fragmentation and cumulative impacts. Without appropriate mitigation measures there is the potential for significant impacts on the TMO from the proposed activity.

While there are three known white-bellied sea eagle nests within 5 km of the study area (but outside the mining lease area), Appendix F concluded the species as less likely to forage over the area and likely restricted to the larger rivers such as the Arthur River and the Frankland River. Appendix F concluded there was a very low likelihood of the species using the site for nesting or foraging.

There are 61 records on the Natural Values Atlas (NVA) of TMO within 5 km of the mining lease area. The footprint of the Activity Area contains 112 large mature eucalyptus trees with a diameter at breast height (DBH) greater than one metre. Of these 9 trees are inside the Big Keppel clearance area, 3 in the Kuppe clearance area, 4 trees are within a 30m buffer for Road 1E and the majority, 96 trees are within the area identified for Road 1D inclusive of a 30m buffer.

Density of understory vegetation limited the proponent's ability to assess hollows suitable for the TMO. Although a large number of suitable hollows were observed at a distance during field surveys, a large portion of these hollows were deemed 'false hollows' by the proponent's consultant and therefore considered in the EER as being unsuitable for nesting. The EER states that it is likely that the majority of trees contained at least one hollow and that recordings from six song meters deployed at the site detected TMO calls on 28 of the 62 survey nights. The EER advises the direction and estimated distances of these calls indicate that the calls were all from locations outside the Activity Area with the exception of one call determined to be located from a TMO located at Big Keppel. Appendix F of the EER noted that the impact area likely only supports a single pair territory, and that even if masked owls were nesting within an impact area there are a very high number of alternative suitable trees in the near locality.

The EER states that there are no known eagle nests within 500 m or 1 km line of sight of the Activity Area and therefore there will be no activities occurring with 500 m or 1 km line of sight of a known eagle nest during the eagle breeding season (from July to February).

An aerial survey by helicopter of the entire mining lease area and 1 km buffer during April 2021 recorded no new eagles' nests. Nests for eagles and goshawks were subsequently searched for on ground during flora and fauna surveys.

Three eagle nests are known within 1km of the study area although two nests were not found during the aerial survey, despite searching. Ground searches will need to be implemented to determine the status of these nests before considering them as 'lost'. Nest 2515 was relocated, and the natural values report advised this nest didn't appear to have been used recently, but that it is still viable. All of these nests occur within the 1 km buffer of the mining lease and are therefore well out of the line of sight of any of the proposed Activity Areas.

The EER considered that the potential risk of disturbing or otherwise impacting WTE and white-bellied sea eagles is low.

The EER states that no grey goshawk nests were recorded from ground-based searching and that there was one sighting of a bird within 5 km of the South Blackwater site. The desktop NVA survey identifies two grey goshawk nests within 500 m and 13 nests within 5 km of the site prior to surveys. The closest recorded nest to the South Blackwater site is located to the north of the site within the adjacent Blackwater Mine site that is also operated by the proponent. The EER states that it is highly likely this species utilises the area for foraging, however the quality of the habitat is rates as 'Class 3 – primarily foraging habitat' in accordance with the FPA Fauna Technical Note No. 12, as the vegetation does not support nesting and that the potential risk of impact to the species is low.

#### **6.4.1.3 Threatened Fauna – Invertebrates (Giant freshwater crayfish, snails & Marrawah skipper)**

Table 3 lists five species of snail listed as rare under the TSPA that are likely to occur at South Blackwater. The EER states that in 2022, potential habitat for these species within Blackwater Rivulet, Keppel Creek and Stephens Rivulet catchments was surveyed. There are records of *Beddomeia* species at eight locations within Keppel Creek, Stephens Rivulet and tributaries of Blackwater Rivulet. The EER proposes avoidance measures, notes that no direct disturbance to these areas is likely to occur, and therefore concludes that there is a low likelihood that these species will be impacted by the activity. In relation to the Keeled snail, the EER states that:

- Surveys did not locate any specimens;
- Suboptimal habitat is present within the proposed Activity Area; and
- The substrate offered by the silica deposits within the Activity Area is not suitable for this species.

As such the EER concludes that there is a low likelihood that that this species will be significantly impacted by the activity.

Targeted surveys for the Marrawah Skipper were conducted by the proponent's consultant and the species host plant was only present occasionally throughout the proposed Activity Area. The EER states that the potential habitat within the Activity Area is therefore not dense enough to support the species and that on that basis it is considered a low likelihood that that this species will be significantly impacted by the proposed activity.

The giant freshwater crayfish (GFC) is found in rivers and streams containing pools, undercut banks, snags and native vegetation in the northwest and northeast of Tasmania. Potential GFC habitat within South Blackwater and surrounding rivers (i.e. Arthur River) is considered critical habitat due to the presence of juvenile GFC. Optimal habitat for GFC adults was found in all waterbodies surveyed by the proponent's consultant namely, Stephens Rivulet, Keppel Creek and Blackwater Rivulet. Adult GFC and juveniles were found during field surveys in Blackwater Rivulet, Keppel Creek and Stephens Rivulet.

Activity close to creek beds can have an impact on instream habitat features (i.e. flow velocities and increased erosion and destruction of instream habitat features) that can directly impact the GFC. The EER and supporting documentation states that there will be no loss or physical disturbance to potential habitat for GFC. However, runoff from the operation footprint can increase sediment load in the water courses and have an impact on water quality, also potentially impacting the GFC.

There are inaccuracies in the spatial layers used to map the proposed path of Road IE. The spatial layer implies that the road will intersect with Keppel Creek. It was confirmed in field surveys that Road IE will not intersect Keppel Creek.

## 6.4.2 Management measures proposed in EER

### 6.4.2.1 Pre-clearance Mitigation Measures

The following species-specific pre-clearance mitigation measures are committed to in Section 3.6.3 of the EER. This Section of the EER also notes that commitments to dust management and water quality management are also relevant to natural values management.

#### 6.4.2.1.1 *Tasmanian devil and spotted tailed quoll dens – Pre-clearance*

The EER commits to the development and implementation of a Den Management Protocol (also referred to as the Mammal Den Decommissioning Protocol) including the following measures:

- Preclearance den surveys will be completed at Big Keppel, Kuppe, Road ID and IE at a minimum of 30 days prior to the planned vegetation clearance to allow sufficient time for occupied maternal dens to be vacated.
- A 50 m wide buffer will be established around any active maternal dens identified during the survey; the buffer will be maintained until the den has been confirmed to be vacant.
- Any active dens identified during the survey will be monitored using motion sensor cameras by an experienced ecologist.
- Any inactive dens will be decommissioned; the camera monitoring of potential dens will be undertaken up until the time the potential den is decommissioned; approval is required from NRE prior to decommissioning.
- Any dens that cannot be avoided and are decommissioned will require a permit to take under the NCA.
- The extent of clearance required at Big Keppel, Kuppe, Road ID and Road IE will be clearly marked.
- Where practicable, vegetation clearance will be scheduled outside of the breeding season.

#### 6.4.2.1.2 *Tasmanian masked owl – Pre-clearance*

- A Tree Protection Zone (TPZ) of 15 m will be established around large old growth mature eucalyptus trees with a DBH greater than 100 cm that are to be retained (as identified on Figure 37, Figure 38 and Figure 39 of Referral 2022/9165 (Appendix F) of the EER).
- Where avoidance (i.e. retention of trees with a DBH greater than 100 cm) is not practicable, trees identified for felling will be inspected by an ecologist / arborist:
  - To determine the suitability for TMO nests and roosts.
  - To confirm that trees are not occupied at the time of felling,
  - Vacant and unused hollows will be blocked off so birds cannot enter them prior to felling,
  - Trees with no signs of evidence of use by TMO and vacant hollows will be felled away from trees that are to be retained,
  - Trees with signs of evidence of use by TMO and/or where a TMO is flushed will only be felled outside of the breeding season (e.g. most likely March to August); if a TMO has been flushed, a Permit to take a product of wildlife (under the NCA) will be required once the breeding season is finished.
- Where clearing operations occur near potential nesting trees, small trees will be cleared first to allow noise disturbance to flush out any TMO from potential nest trees; if a TMO is flushed, the tree is considered a nest site; if at any point a tree is thought to contain a nest (through flushing TMO or physical evidence), works will cease, and advice will be sought from Conservation Assessments.

#### 6.4.2.1.3 *Eagle nests and Grey goshawk nests – Pre-clearance*

- A pre-construction survey by a suitably qualified person will be undertaken for eagle nests within the project footprint and within 1 km of the project footprint; the survey will be undertaken outside the breeding season, 12 months prior to construction.

- Removal of potential nesting trees will be minimised.

#### 6.4.2.1.4 *Giant freshwater crayfish – Pre-clearance*

- Buffers will be clearly marked within:
  - A minimum of 30 m of Blackwater Rivulet and Keppel Creek.
  - A minimum of 20 m of Stephens Rivulet (only to the section of Big Keppel closest to Stephens Rivulet where the resource continues down to the watercourse); a minimum of 30 m of Stephens Rivulet will be maintained in all other areas of the watercourse.
  - A minimum of 30 m of all other smaller rivers, creeks and rivulets.
- No vegetation will be cleared within the buffer zones to ensure habitat quality and shade, and to reduce siltation run-off.
- Addition of an earthen bund behind which silica will be extracted, which will prevent run-off into Stephens Rivulet.
- At Big Keppel, waste products will be stored behind a 3 m earthen bund; if the bund fills with water, it will be discharged through a pipe below the top of the bund wall and flow into the eastern sediment pond before discharge.
- Resources or waste material will not be stockpiled in flood prone areas; the stockpile pad at Big Keppel will be protected from a 1-in-100-year flood level and have sediment control works that are known to be effective to contain any sediment run-off.

#### 6.4.2.2 **Operational Mitigation Measures**

The following species-specific mitigation measures for the ongoing operation of the activity are stated in Section 3.6.3 of the EER.

##### 6.4.2.2.1 *Tasmanian devils and spotted tailed quolls - Operation*

- Monitoring of known active Tasmanian devil dens within the disturbance footprint will be ongoing until the den is considered inactive and decommissioned.
- Work area boundaries will be maintained; boundaries of the Big Keppel and Kuppe deposits will be checked quarterly to ensure no encroachment; a 50 m buffer around all dens will be maintained.
- All works, vehicles and materials will be confined to the marked work areas.
- Where practicable
  - Connectivity between remaining habitat areas will be maintained to compensate for fragmentation
  - Critical habitat features for potential den sites will be maintained
- Progressive rehabilitation of disturbed areas will be undertaken in accordance with the South Blackwater Mining & Rehabilitation Plan.
- During vegetation clearance within the Activity Area:
  - Wildlife spotters will be available and will check all known dens.
  - Any injured or orphaned wildlife will be kept in a warm, dark, quiet place away from people and domestic animals; will not be fed; handling will be kept to a minimum.
  - Carer placements and coordination of veterinary care for any injured or orphaned wildlife will be coordinated through Bonorong Wildlife Rescue (0447 264 625).
- The Roadkill Management Plan will be implemented, including:
  - Roadkill prevention warning signs be placed in high-risk areas within South Blackwater and alongside each side of the road between the Blackwater access off Blackwater Road and Edith Creek
  - A reduced speed limit of 45 km/hr along all internal roads and 60 km/hr between Blackwater and Kanunnah Bridge.
  - Carcasses will be removed from internal roads daily and disposed of in the bush away from the road edge if safe to do so; this activity (in the context of this EER) is exempt from requiring a permit under the *Nature Conservation (Wildlife) Regulations 2021*.
  - Avoidance of nighttime use of roads, where practicable.
  - Education and awareness training will be provided to drivers.
  - Annual review of the plan for suitability.

#### 6.4.2.2.2 *Tasmanian masked owl – Operation*

- TPZ of 15 m will be implemented around large old growth mature eucalyptus trees with a DBH greater than 100 cm and maintained.
- Tree health of large old growth mature eucalyptus trees with a DBH greater than 100 cm within the Activity Area will be monitored annually by a qualified arborist.
- The hollows of potential nesting trees that are to be retained, but may be impacted by the nearby use of heavy machinery, will be inspected by an ecologist to determine their suitability for masked owl nests and roosts and:
  - Hollows with any sign of activity will be subject to a 150 m exclusion zone until after the breeding season and will be reinspected following the breeding season.
  - If satisfied there is no active TMO nest and it is outside breeding season, a cat flap device will be installed over the hollows to ensure that any animal within the hollow can leave the hollow but not gain access.
  - A suitably qualified arborist or engineer will inspect the tree(s) at least 60 days prior to any heavy machinery works; if it is suspected a tree may not be structurally sound enough to remain intact with heavy machinery operating in close proximity, the tree will be inspected and if empty, the hole will be either permanently blocked or the tree will be felled following standard protocols; if a TMO nest is found to be present appropriate restrictions on minimum distances within which heavy machinery may be used will be implemented.
- A suitably trained, dedicated bird observer will be onsite during tree clearing works to assess and observe bird behaviour; should a masked owl be observed exiting a hollow, work within 150 m will cease immediately and advice will be sought from Conservation Assessments. Surveys for TMO will occur between March and August which is the current advice on the breeding season of the TMO.

#### 6.4.2.2.3 *Tasmanian wedge-tailed eagle, white-bellied sea eagle and grey goshawk - Operation*

- If a grey goshawk nest is found, a permanent 150 m buffer will be maintained around the nest site.
- Buffer zones will be maintained around known eagle nests so long as the nest exists.
  - Lost nests (e.g. due to fire, wind, tree fall) will be listed as absent and the buffer zone will be removed.
- Where required to be developed, an approved eagle nest management plan will be implemented.

#### 6.4.2.2.4 *Giant freshwater crayfish - Operation*

The proponent has developed a GFC monitoring plan and commits in the EER to implement the mitigation measures in that plan as follows:

- Annual monitoring within Keppel Creek, Stephens Rivulet and Blackwater Creek will be completed in accordance with the GFC Monitoring Plan.
- Buffer boundaries from watercourses as outlined above will be maintained; boundaries will be checked quarterly to ensure no encroachment.
- Annual river and stream water quality monitoring will be conducted upstream, midstream and downstream of Stephens Rivulet Keppel Creek and Blackwater Rivulet using AusRivAS; changes to water quality as a result of South Blackwater will be addressed.
- Flood levels will be monitored; if flood levels rise the resource or waste material stockpiled pad area will be relocated further upslope.

### 6.4.3 **Public and agency comment**

No public comment was received during the public consultation period. Extensive agency comments were received from Conservation Assessments on all species identified in this section of the EAR.

After the conclusion of the public consultation period, a letter was received by the EPA Environmental Assessments Branch commenting on the adequacy of surveys undertaken for TMO and the proposed mitigation measures for TMO in the EER. The matters raised in this letter were addressed in the comments from Conservation Assessments and have been considered throughout the assessment process, and are discussed below.

## 6.4.4 Evaluation

### 6.4.4.1 Threatened fauna – Tasmanian devil and spotted tailed quoll

The proposed Activity Area falls within the core range for the spotted tailed quoll but not within the key area for the Tasmanian devil, as identified in the EER. Evidence of the presence of both species was recorded across the Activity Area. The EER states that the habitat in the proposed Activity Area was determined to vary between optimal and suboptimal. The area is not considered critical for the survival of the species due to the lack of suitable structures to support denning for either species and unsuitable soil for burrowing in the areas of the silica deposits, however the Activity Area does support some denning opportunities for both species (i.e. large logs) The EER states that the high number of Tasmanian devil and spotted tailed quoll scats combined with a high number of recordings of both species in the area, means that it is likely that devils and quolls utilise the area frequently for foraging (particularly along roadsides).

The EER states that there are no significant residual impacts expected to Tasmanian devils and spotted tailed quolls caused by construction or operations if the proposed mitigation measures as outlined above are implemented. This is supported, and to prevent the destruction of dens or harm to Tasmanian devils or spotted tailed quolls, condition **FF2.1** is imposed, requiring that no more than eight weeks prior to the clearing of any vegetation or the relocation or use of any vegetation stockpile(s) on The Land, a survey of the vegetation or stockpile(s) must be conducted. **FF2.2** also requires that surveys must be undertaken in accordance with the Mammal Den Decommissioning Protocol/Den Management Protocol that was provided with the EER and stipulates that vegetation clearance must not occur without approval from the Director.

Conditions **FF2.3** and **FF2.4** are imposed to ensure that advice is sought from Conservation Assessments if surveys identify any dens and to require compliance with the Mammal Den Decommissioning Protocol/Den Management Protocol.

The proposed mitigation measures are considered appropriate to minimise the potential impact to Tasmanian devils and spotted-tailed quolls if implemented in accordance with **FF2**.

### 6.4.4.2 Threatened fauna – Tasmanian masked owl

It is noted that the clearance of TMO habitat will have an impact on the species in the local area of the activity.

The EER acknowledges that without appropriate mitigation measures the proposed activity could have significant impact on TMOs, however if the proposed mitigation measures are implemented throughout the construction and ongoing operation of the activity, the EER states no significant residual impacts to breeding TMOs are expected.

The highest number of trees to be removed are in the area identified for Road 1D. Appendix F of the EER advises that TMOs are thought to be using trees to the north off the proposed road alignment and areas to the south of Road 1D where fewer tall trees were surveyed as potential alternative routes, however the steep incline was deemed unsuitable for large haulage trucks and so the proposed route is preferred. A further option considered was using existing internal mine roads however this would involve heavy machinery frequently using public roads including the Tarkine drive tourist route. According to Appendix F due to the unsuitability of these roads and safety risks the Department of State Growth was unsupportive of this proposal.

Retention of potential nest trees and large old growth trees with hollow bearing potential is recommended in the EER. The mitigation measures proposed in the EER reflect this and are generally supported.

The proposed mitigation measures as outlined in Section 3.6.3 of the EER (page 67) and summarised above are supported by Conservation Assessments. As such, condition **FF3** is imposed and states that management of TMO must be in accordance with Section 3.6.3 of the EER. Further clauses of condition **FF3** highlight key components of the proposed mitigation measures that must be adhered to.

The natural values report appended to the EER states that it is likely that majority of trees with suitable DBH (that are therefore potential nest trees) contained at least one hollow and as such, trees selected for felling will need to be surveyed to determine utility of hollows. Pre-clearance surveys of potential nest trees within the Activity Area and 150 m from the Activity Area are required by **FF3.1.1**. Section 3.6.3 of the

EER further details that these surveys are to determine that trees are not occupied by TMO at the time of felling. If suitable nesting hollows in these identified trees are vacant, access to these hollows will be blocked to ensure the hollow cannot be occupied between survey time and felling. If a tree identified for felling is found to be occupied, or there is evidence of use of the tree by TMOs the mitigation measures commit to notification of the Director, EPA and the Conservation Assessments. These key measures are included in condition **FF3.1.2** which states that disturbance of identified trees must not commence without the written approval of the Director. This is intended to ensure that specialist advice is sought on how the identified nest or tree is to be managed (e.g. implementation of buffer zones). **FF3.1.3** also supports the proposed mitigation measure of having a dedicated bird observer on site during felling activity. If a TMO is flushed from a tree during works, activity must cease within 150 m and advice sought from the Conservation Assessments. Works must not continue in this scenario without the written approval of the Director.

As identified above, the loss of potential habitat for species, in particular the TMO has the potential to cause significant impacts. Therefore, a requirement to retain and protect potential nesting trees is imposed in condition **FF3.1.4**. Sub condition **FF3.1.4** requires that a minimum TPZ around trees to be retained is established and maintained throughout the life of the activity. Retention of mature trees is in the interest of future rehabilitation of the site and protection of potential TMO nesting habitat from edge effects.

It was noted by the Conservation Assessments early in the assessment process that a suitable TPZ may be greater than 15 m for potential TMO nest trees that are to be retained within the Activity Area. Section 3.6.3 of the EER commits to inspection and monitoring of potential TMO nesting trees that will be retained, and the outcome of this survey will inform the TPZ. Section 3.6.3 of the EER further commits to blocking hollows on potential TMO nesting trees which are deemed not structurally sound enough to remain intact, so that the tree does not become occupied. If one of these potential nest trees to be retained is found to be occupied by a TMO, in accordance with **FF3.1.3** the Director, EPA and Conservation Assessments must be notified, and no further works can occur without the written approval of the Director.

The mitigation measures proposed and the requirement of the proponent to adhere to condition **FF3** is considered sufficient to manage the impact to Tasmanian masked owls.

#### **6.4.4.3 Threatened fauna – Tasmanian Wedge-tailed eagle, white-bellied sea eagle and Grey goshawk**

The EER states that there are no active raptor nests within 1000m line-of-sight or within 500 m of the Activity Area. However there previously was an active WTE nest to the north of the adjacent Blackwater site that has since been determined inactive, but viable. The EER also states that the high quality WTE nesting habitat occurs within the Activity Areas. The precautionary approach proposed in the EER and summarised above is supported, and as such condition **FF4** is imposed. This condition requires eagle/raptor nest searches to be completed within 12 months prior to construction and in accordance with the [EPA Guide to Eagle Nest Searching and Nest Activity Checks](#).

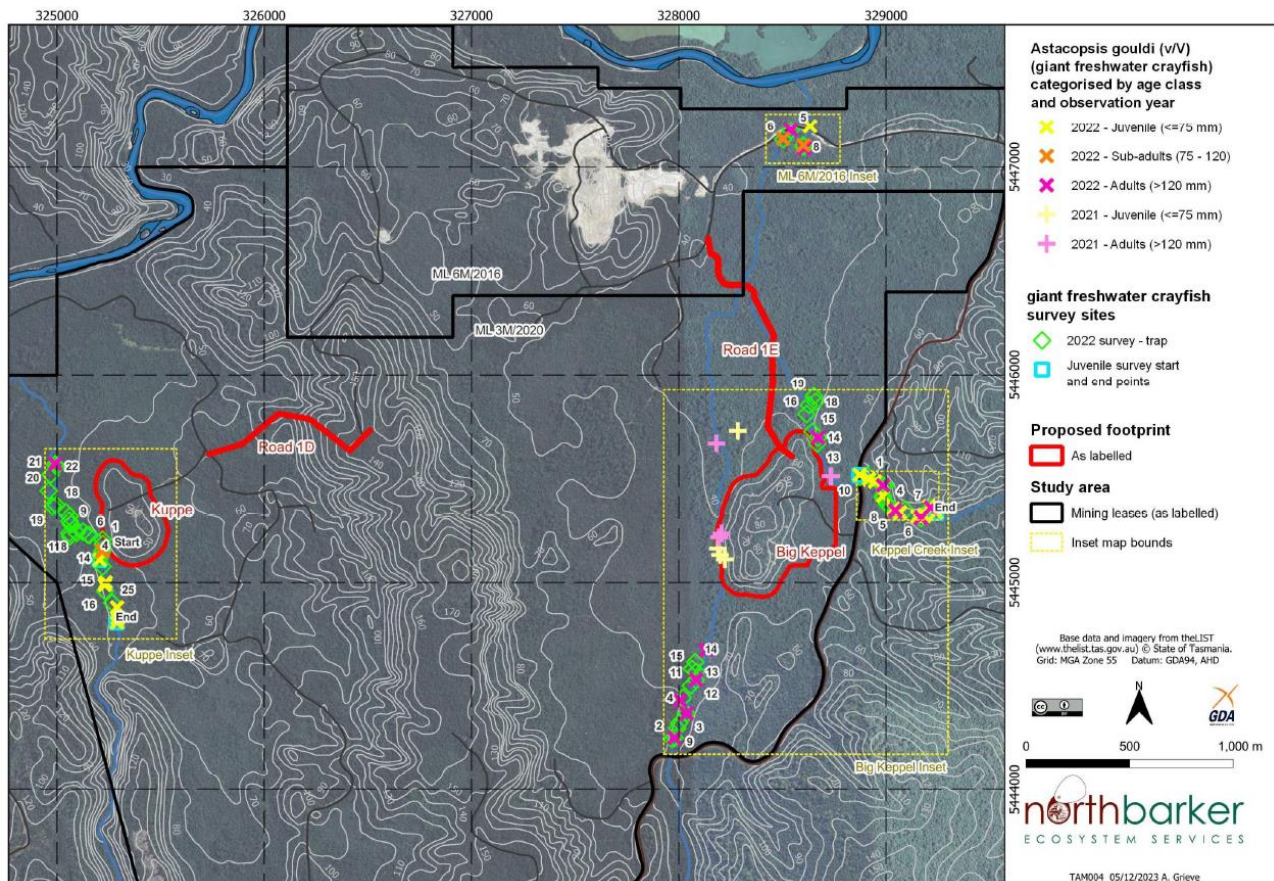
#### **6.4.4.4 Threatened fauna – Giant freshwater crayfish**

If mitigation measures are not implemented the proposal has the potential to have significant impacts on the GFC through impacts to water quality from surface water runoff and potential disturbance to habitat in watercourses.

The proposed buffer zones between all watercourses and the boundary of the Activity Area are considered adequate. Although there are portions of Stephens Rivulet where a smaller 20 m buffer will be maintained, justification for this was provided in the EER on the basis that the silica resource extends up to the boundary of the rivulet. The EER commits to implementing an additional mitigation measure by constructing an earthen bund behind which the extraction of silica will occur (see Figure 4). The EER further states that the earthen bunds mitigate the potential impacts of sediment laden run off by diverting surface flow back into the working area and to the appropriate sediment ponds. Condition **FF5.1** is therefore imposed to ensure that the activity must be undertaken in a manner that does not cause degradation to GFC habitat or disturbance to the GFC. The buffer zones between water courses are included in **FF5.1.1** and **FF5.1.2**.



A GFC Monitoring Plan was provided with the EER. Biennial monitoring of known GFC populations and annual monitoring of watercourses within the vicinity of the Activity Area is supported and as such is provided for in conditions **FF5.2** and **FF5.3**. Annual monitoring of watercourses is to be in accordance with relevant methods of the Tasmanian River Condition Index (TRCI). This is considered a suitable approach to ensure that the overall health of the watercourses is maintained and are not impacted by the activity. Condition **G9** requires that all monitoring and survey data is to be included in the Annual Environmental Review for the site, which allows for adaptive management over the life of the activity or remedial action if required.



**Figure 6: GFC survey locations and findings overview (Figure 22 of Appendix F: South Blackwater Silica Mine - Silica Deposit Preliminary Documentation)**



**Figure 7. Example of proposed 3m earthen bunding method to prevent potential sediment run-off into waterways (Figure 8a of EER).**

#### 6.4.5 Conditions

- FF1** No clearance of vegetation
- FF2** Tasmanian devil and spotted-tailed quoll den survey
- FF3** Tasmanian masked owl management
- FF4** Tasmanian wedge-tailed eagle and white-bellied sea eagle management
- FF5** Giant freshwater crayfish management

### 6.5 Issue 4: Water Quality

#### 6.5.1 Potential impacts

There are several watercourses within South Blackwater:

- Stephens Rivulet and Keppel Creek in the north-east, running adjacent and to the west and north-east of the Big Keppel deposit respectively; and
- Blackwater Rivulet in the north-west, running adjacent and to the west of the Kuppe deposit,

There are also several unnamed smaller watercourses. All watercourses are small headwaters of the Arthur River. Protected environmental values identified include protection of aquatic ecosystems – modified, not pristine which edible fish, crustacea and shellfish may be harvested; and recreational water quality and aesthetics – primary contact (e.g. swimming), secondary contact (e.g. paddling, fishing) and aesthetics.

The proponent has conducted monthly surface water monitoring for pH, temperature, electrical conductivity (EC) and turbidity at three locations since September 2021 and at a further two locations since April 2022 (see Figure 8 below) to provide baseline water quality prior to the activity commencing. These results indicate exceedances of relevant guideline values for pH range.

The EER states that silica is comprised largely of quartz and is free draining and chemically inert. However, the activity will create exposed surfaces that could be vulnerable to erosion and sediment loss during rainfall events. Sediment and silica laden surface water runoff has the potential to reduce water quality downstream and displace or smother aquatic organisms including the threatened GFC.

The EER states that as no groundwater was encountered during exploration drilling to a depth of 15 m below ground level (Big Keppel) and 8 m below ground level (Kuppe), it is highly unlikely that silica extraction at the site will impact on groundwater. The EER also states that the proponent has no intention to interact with groundwater.

#### 6.5.2 Management measures proposed in EER

The following water management measures are proposed in the EER:

- A minimum buffer of 20 m maintained from Stephens Rivulet.
- A minimum buffer of 30 m maintained from Keppel Creek and Blackwater Rivulet.
- Four sediment control ponds will be constructed (two at each deposit) with sufficient capacity to manage a 1 in 20 year rainfall event, as shown in Figures 9 and 10 below. The ponds will allow disturbed silica particles to settle out of the water column before the water is discharged to existing drainage lines and rejoins water courses.
- Perimeter cutoff drains (i.e. bunds) will be constructed between upstream undisturbed areas and excavated areas using topsoil, to divert clean stormwater away from extraction areas.
- Silt fences will be placed at the base of each cleared area with run-off conveyed to the sediment control ponds via cut-off drains, and check dams will be installed to limit erosion at the base of the cut-off drains.
- Culverts will be installed along the internal road network.

- Erosion and sediment control infrastructure will be regularly inspected and maintained/adapted as necessary.
- The baseline data collected by the proponent since 2021 will allow comparisons with future monitoring results.
- Quarterly monitoring of water quality for pH, temperature, EC and turbidity will continue at the locations outlined in Figure 8 below and if low pH values are recorded regularly, treatment of the sediment control ponds may be required.

### 6.5.3 Public and agency comment

No comment was received. Conservation Assessments raised comment throughout the assessment around water quality management, and this is addressed in Section 6.4 above.

### 6.5.4 Evaluation

The EPA Water Section reviewed and provided comment on the EER throughout the assessment process and considered that the risk mitigation measures proposed for water quality, including the sediment pond calculations presented in the EER, are adequate.

Extraction will take place in stages over the life of the mine, and to ensure the ongoing commitment to the mitigation measures, conditions for the construction and maintenance of appropriate stormwater control infrastructure, are imposed. The EER discusses that perimeter cut off drains will be constructed to divert surface water away from extraction areas. Bunds upslope will be moved forward as the mining face progresses. Bunds located downslope will act to divert surface water runoff to sediment ponds. Given the porous nature of silica, the EER notes that based on experience at the adjacent similar existing operation by the same proponent, it is not expected that significant flows will reach the sediment control ponds. Suitably sized perimeter drains or bunds will be required by condition **SW1**, and the maintenance of suitably sized sediment ponds will be required by condition **SW2**. Condition **SW3** requires stormwater management so that any stormwater discharged will not cause serious or material environmental harm, or environmental nuisance.

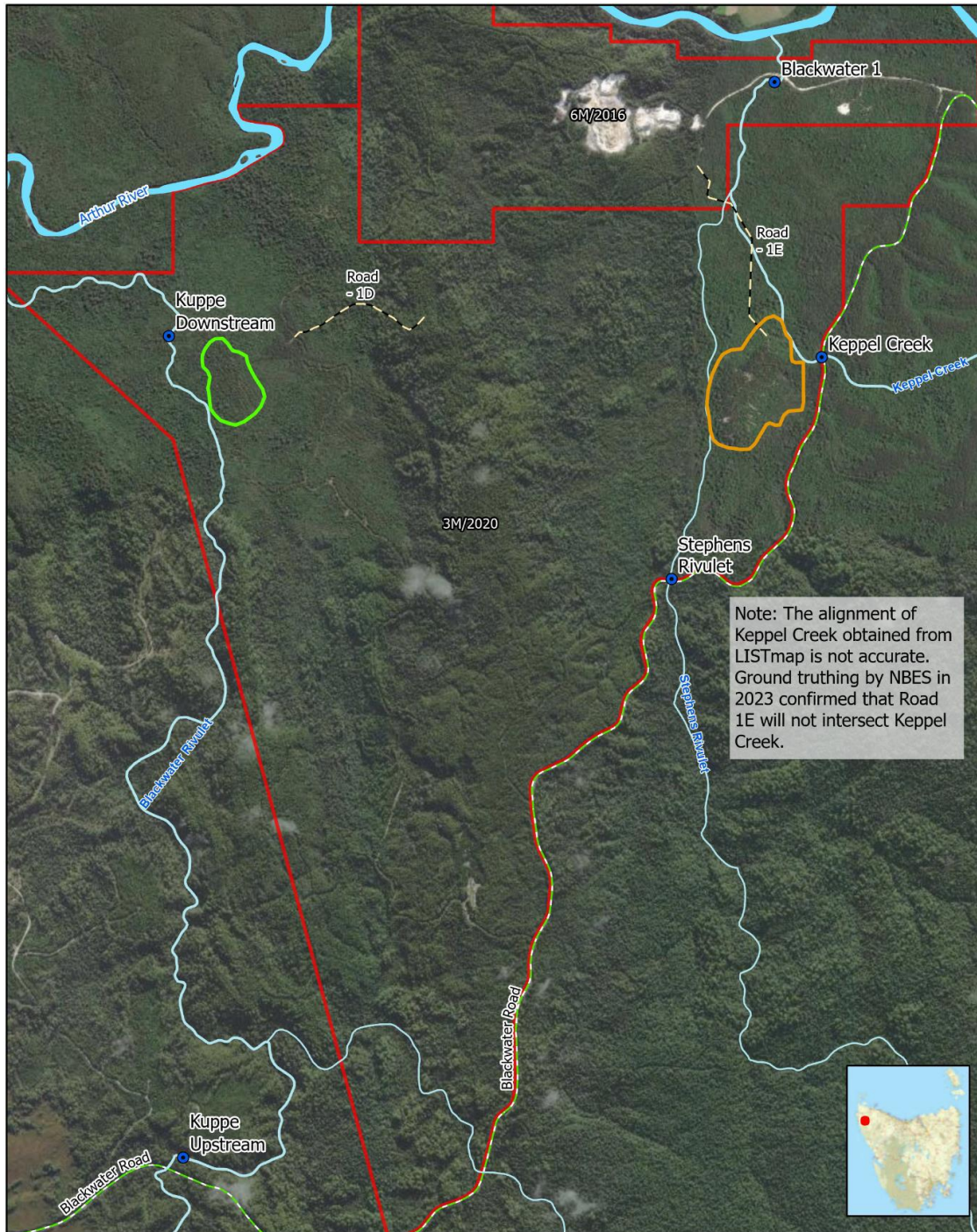
Condition **M1** is also imposed which requires the proponent to conduct quarterly water quality monitoring for pH, temperature, EC and turbidity, at the five pre-established monitoring points (see Figure 8 below). Guidance on sampling and measurements is included in conditions **M2** and **M3**.

A buffer zone is also imposed by condition **FF5** as a mitigation measure to prevent potential pollution or disturbance to nearby watercourses. Condition **DC3** gives effect to the commitment in the EER to progressive rehabilitation of the site and a maximum of 18 ha of disturbed area at any one time. Compliance with these conditions will reduce available material that can be transported by rain events into nearby water courses.

### 6.5.5 Conditions

The proponent will be required to comply with the following conditions:

- **SW1** Perimeter drains or bunds
- **SW2** Maintenance of settling ponds
- **SW3** Stormwater
- **M1** Monitoring requirements
- **M2** Samples and measurements for monitoring purposes
- **M3** Signage of monitoring points
- **DC3** Progressive rehabilitation
- **FF5** Giant freshwater crayfish (*Astacopsis gouldi*) management



Tasmanian Advanced Minerals Pty Ltd

Surface Water Monitoring Locations

**pitt&sherry**



0 0.3 0.6 1.2 km

Coordinate System: GDA 1994 MGA Zone 55  
1:30,000 When Printed at A4

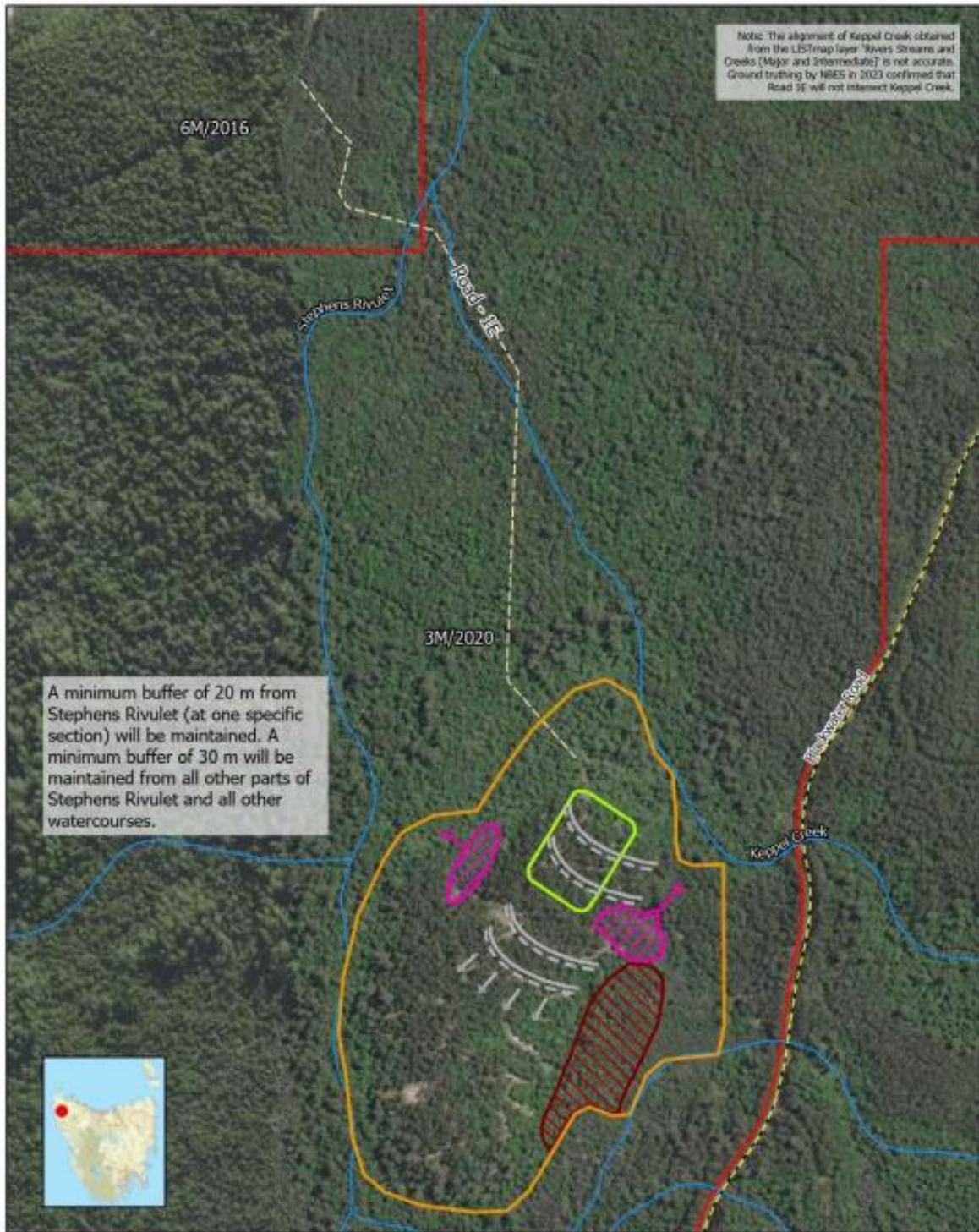
MAP REF P:23.0519  
AUTHOR JB  
REVISION RevB  
DATE 7/08/2023

DATA SOURCES Base data and map from The LIST Tasmanian Government Project specific data

**Legend**

- Surface water monitoring location
- ▭ Mining lease
- ▭ Blackwater Rd
- ▭ Major watercourse
- ▭ Big Keppel
- ▭ Kuppe
- ▭ Arthur River
- ▭ Proposed road

Figure 8. Water quality monitoring locations (Figure 11 of EER)



**Tasmanian Advanced Minerals Pty Ltd**

Site Plan - Big Keppel

**pitt&sherry**

N

0 0.05 0.1 0.2 km

Coordinate System: GDA 1994 MGA Zone 55  
1:7,500 When Printed at A4

MAP REF	P.23.0519	DATA	Base data and map from
AUTHOR	JB	SOURCES	The LIST Tasmanian Government
REVISION	RevD		Project specific data
DATE	18/06/2024		

**Legend**

Big Keppel (impact area)	Waste silica/gangue dump
Road 1E (proposed)	Sediment control pond
Future stockpile area	Sediment pond
<b>Benches</b>	Discharge direction
Toe	Blackwater Rd
Crest	Watercourses
Direction	Mining lease

Figure 9. Big Keppel extraction plan showing sediment ponds (Figure 9 of EER)

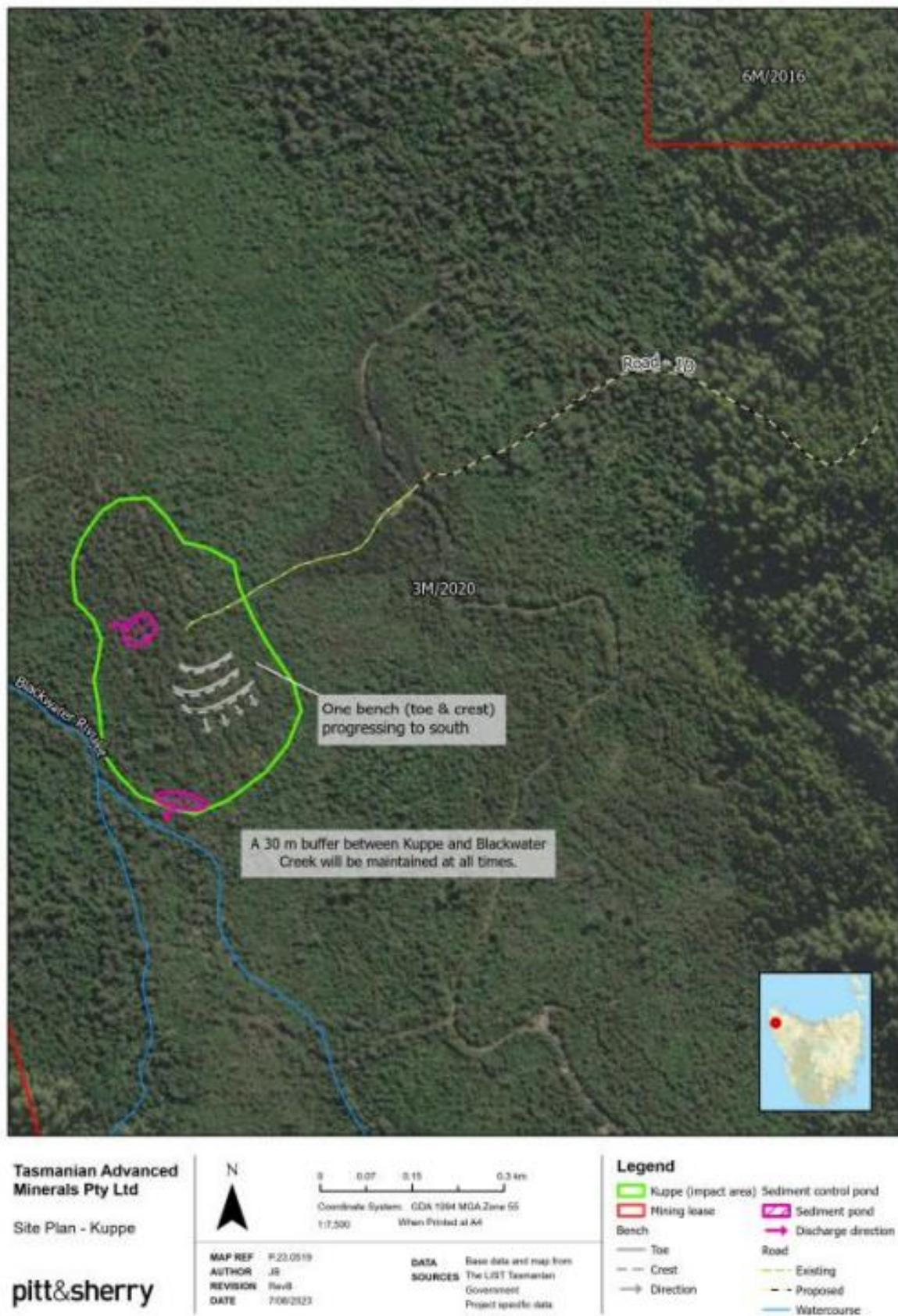


Figure 10. Kuppe extraction plan showing sediment ponds (Figure 10 of EER)

## 6.6 Issue 5: Air Quality

### 6.6.1 Potential impacts

The primary air emission of concern at the site is dust, but emissions may also include the release of greenhouse gases from plant and equipment used to undertake the activity that are powered by internal combustion engines. Dust emissions have the potential to cause environmental nuisance and respiratory annoyance or harm, reduce visual amenity and smother plants by blocking photosynthesis. Sources of dust emissions on site include:

- Stripping vegetation and overburden.
- Extraction, screening and loading of silica using excavators and articulated dump trucks.
- Stockpiling of silica, overburden and gangue (commercially valueless material in which ore is found).
- Traffic movements on internal gravel roads.

### 6.6.2 Management measures proposed in EER

The EER states that dust generated from the activity will be managed in accordance with Section 7.5 of the Tasmanian *Quarry Code of Practice 2017* (QCP) as well as the Tasmanian *Environment Protection Policy (Air Quality) 2004*. The proponent intends to have the Site Manager visit regularly to maintain awareness of potential dust emissions from extraction, stockpiling and operations, and ensure that the following mitigation measures are implemented if necessary:

- Vegetation clearance will not be undertaken during periods of extended dry, windy weather.
- Native vegetation will be retained where practicable.
- The area of disturbed land at any one time will be minimised and will not exceed 18 ha and revegetation and rehabilitation of disturbed areas will be carried out progressively to achieve this.
- Where practical, a minimum of at least 50% ground cover will be maintained across a given resource area during mining operations. Where this is unachievable, soils will be stored in locations protected from wind and other forms of erosion and in a configuration that keeps the soil viable during storage.
- Where practical, existing trees will be retained to shield stockpiles and extraction areas from prevailing winds.
- Vehicle speed limits onsite will be restricted to 45 km/h to minimise dust generation.
- Internal gravel roads will be maintained to minimise dust generation.
- Internal gravel roads and stockpiles will be watered where required to prevent dust generation by vehicles. A water cart will be kept onsite during campaigns and watering will commence immediately whenever dust generation is observed by the Site Manager with water for dust suppression being sourced from the onsite sediment control ponds.
- Trucks will utilise effective dust control measures (e.g. tarpaulins, load dampening) when travelling on public roads.

In addition, the EER states that vehicle exhaust emissions will be minimised by ensuring that all equipment is properly maintained and operated.

### 6.6.3 Public and agency comment

No public comment was received. Conservation Assessments raised the issue of potential harm caused to flora from smothering from dust emissions.

### 6.6.4 Evaluation

The prevailing wind direction is from the south (0900) and south-west (1500) however, winds of varying strengths occur from all directions. The area surrounding the Activity Area is bushland, which will provide

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significant attenuation of any dust emissions generated onsite, and the nearest sensitive receptors are so far away (6km to the north-east) that it is unlikely that dust emissions would be visible from these receptors or cause nuisance or harm.

The EER also states that typically, raw silica is damp when extracted and screened, and therefore not prone to becoming airborne. In addition, the extraction process involves placing silica directly into the back of the articulated truck rather than dropping from a height. It is therefore concluded that the nature of the material to be extracted means that it is unlikely to present a significant risk of mobilising volumes of dust to risk smothering native flora.

It is considered necessary to impose standard extractive industry conditions relating to dust emissions. Condition **A1** requires the proponent to equip vehicles with effective control measures to prevent the escape of the materials when they leave the site or travel on public roads and condition **A2** requires the proponent to control dust emissions to the extent necessary to prevent environmental nuisance beyond the boundary of the Activity Area.

### **6.6.5 Conditions**

The proponent will be required to comply with the following conditions:

**A1** Covering of vehicles

**A2** Control of dust emissions



## 6.7 Issue 6: Noise

### 6.7.1 Potential impacts

Noise emissions from extractive activities have the potential to cause environmental nuisance. Noise emissions are expected from excavation, screening, vehicle loading and on-site vehicle movements. Blasting is anticipated at a frequency of no more than once per year. The EER proposes operating hours of 0700 – 1900 hrs Monday to Sunday. The nearest sensitive receptors are rural residences located approximately 6 km to the north-east.

### 6.7.2 Management measures proposed in EER

The EER commits to the following mitigation measures to minimise the generation of noise emissions during construction and operation:

- All plant and equipment will be appropriately maintained and in good working order at all times, including noise control equipment such as mufflers and exhaust pipes.
- Vehicle speed limits onsite will be restricted to 45 km/hr.
- All heavy vehicle based onsite will use broad band style reversing beacons.
- Unnecessary noises such as “dropped loads” or scraping loader buckets on the ground will be avoided.
- Trucks using regional roads (e.g. Roger River Road) will be limited to sign posted speeds and will avoid engine braking.

### 6.7.3 Public and agency comment

No public or agency comments were received regarding noise.

### 6.7.4 Evaluation

Given the nature of the operations and the distance to nearest sensitive receptors, the site is unlikely to generate nuisance noise, or to cause environmental harm. The proposed operating hours are consistent with those recommended in the *Quarry Code of Practice 2017* for extractive activities, and the separation distance to sensitive receptors is six times the recommended distance for blasting. The proposed operating hours are specified by condition **N2**. The EER states that intermittent drilling and blasting may be required if large rock intrusions are encountered. Although there is low risk of disturbance to sensitive receptors, condition **N1** is imposed to maintain consistent management of blasting across other TAM sites and consistency with the QCP. Given the known operational history of the adjacent Blackwater site and the infrequency of blasting requirements, potential impacts from blasting at the South Blackwater site are considered low.

### 6.7.5 Conditions

The proponent will be required to comply with the following conditions:

**N1** Blasting times

**N2** Operating hours

## 6.8 Issue 7: Waste and environmentally hazardous substances

### 6.8.1 Potential impacts

Inappropriate management of waste may result in public health impacts and environmental nuisance or harm. The release of hazardous substances, including fuels and oils required for machinery operations may result in impacts to soils, surface water and groundwater if not appropriately managed. Degraded water quality may have flow on effects to the health of aquatic species.

The EER states that the types of waste likely to be produced on site include natural wastes (out of specification silica, waste rock, overburden, stripped vegetation), used heavy machinery consumables (e.g. oil filters, tyres, damaged hardware), and general waste produced by staff (e.g. lunch wastes and paper). No controlled waste (other than waste tyres) will be generated at the site, no chemicals will be stored onsite, and the only potentially hazardous waste generated would be fuel/oil in the event of an accidental spill. The nature of the silica and rock material extracted has no potential for generating acid and metalliferous drainage.

### 6.8.2 Management measures proposed in EER

The following mitigation measures are proposed:

- Any extracted material that is not of sufficient grade for processing will be stockpiled in the waste silica/gangue dump (Big Keppel) or placed back into the extracted pits prior to covering with topsoil.
- At Big Keppel, out of specification silica, post screening, will be trucked to the waste silica/gangue dump to the east of the deposit.
- Any rubbish observed onsite, including crib room rubbish, will be collected and taken to the adjacent Blackwater Mine site for disposal.
- Machinery or screening consumable waste will be reused and recycled where possible.
- All solid wastes will be collected from the adjacent Blackwater Mine site and recycled as appropriate or disposed of at a suitable landfill facility.
- The fuel tanker will not enter the site, with the existing storage facility at the adjacent Blackwater Mine site to be used to fill the fuel pods.
- Light vehicles will carry fuel clean-up equipment in case fuel spills occur during equipment refuelling, oil spill absorption materials will be used immediately for clean-up if there is a spill and spill kits will be replenished when used;
- Refuelling and lubrication will be undertaken at least 20m away from any freestanding water.
- Where possible, no equipment maintenance or repair will occur at the site with equipment maintenance and repair occurring at the adjacent Blackwater Mine site.
- All workers will be trained to respond to spills and leaks.
- The EPA will be notified as soon as possible of any significant spills.
- All equipment will be properly maintained and serviced regularly to prevent ongoing oil or fuel leaks.

### 6.8.3 Public and agency comment

No public or agency comment was received in relation to waste and environmentally hazardous substances.

### 6.8.4 Evaluation

The proposed measures are considered adequate to manage the different types of waste generated, and mitigate the risks associated with accidental release of environmentally hazardous substances and clean up if required. Conditions **H2** and **H3** are imposed and prescribe requirements for storage and handling of hazardous materials, particularly fuels. Condition **H1** is also imposed and requires the provision and maintenance of adequate spill kits for the site.

### 6.8.5 Conditions

The proponent will be required to comply with the following conditions:

#### **H1** Spill kits

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**H2** Storage and handling of hazardous materials

**H3** Handling of hazardous materials – mobile

Other information included in the permit:

**LO2** Storage and handling of dangerous goods, explosives, and dangerous substances

**O12** Waste Management hierarchy

## 6.9 Issue 8: Weed Management

### 6.9.1 Potential impacts

Weed species may become more dominant on site and spread from the site to other areas. One of the most common ways weeds are spread is via mobile machinery, equipment and vehicles.

The natural values survey detected no declared weeds, and no evidence of plant pathogens such as *Phytophthora cinnamomi* on site. Two non-declared weeds, foxglove (*Digitalis spp.*) and blackberry nightshade (*Solanum spp.*) were present within the silica pit footprints. Foxglove is currently a proposed declared weed, and if declared will require control in designated areas including areas within and around State Reserves. Several other weed species (*Erica lusitanica* (Spanish heath), *Rubus spp.* (blackberry) and *Ulex Europaeus* (gorse)) have been observed within 5km of the site.

### 6.9.2 Management measures proposed in EER

The EER states that machinery, trucks and vehicles used onsite are considered to be a low risk of introducing weeds as they will only be used on the proponent's Blackwater or South Blackwater sites, and will be inspected for cleanliness before entering the mining areas. The proponent's ecological consultant has prepared a specific Weed and Disease Management Plan (Appendix H) for the site, including machinery washdown procedures and checklists, and states that weed management will comply with the *Weed and Disease Planning and Hygiene Guidelines – Preventing the spread of weeds and diseases in Tasmania*, DPIPWE, March 2015.

### 6.9.3 Public and agency comment

No public or agency comment was received in relation to weed management.

### 6.9.4 Evaluation

An appropriate management plan is required to help control and manage potential weeds and diseases on and near the site, which the proponent has prepared. Condition **OP2** holds the proponent to machinery washdown procedures which comply with the current version of the *Weed and Disease Planning and Hygiene Guidelines*. Condition **OP2** permits machinery movement between the adjacent Blackwater and South Blackwater activities. Condition **OP3** requires the proponent to manage The Land in order to keep it substantially free of weeds. Condition **OP4** requires the proponent to act in accordance with the Weed and Disease Management Plan as substituted or varied by the Director, EPA in writing.

### 6.9.5 Conditions

The proponent will be required to comply with the following conditions:

- OP2** Machinery washdown
- OP3** Weed management
- OP4** Weed and Disease Management Plan

## 6.10 Issue 9: Rehabilitation

### 6.10.1 Potential impacts

Lack of rehabilitation upon temporary or permanent cessation may result in land degradation through sediment loss, erosion, loss of native flora and fauna habitat and colonisation by weeds. This can affect future land use, natural values and result in ongoing sedimentation impacts to downstream areas.

The EER describes a general approach to progressive rehabilitation, and a maximum disturbed area limited to 18 ha at any time. Upon cessation of the activity, the aim of the rehabilitation will be to return the landscape to a similar topography profile and condition to that of pre-extraction works, allowing for plants and animals to re-establish on the site over time.

### 6.10.2 Management measures proposed in EER

The EER includes the following management measures:

- Progressive rehabilitation will be undertaken to stabilise worked out areas, minimise erosion and minimise the area of disturbance.
- When extraction has ceased at Big Keppel and Kuppe, these areas will be rehabilitated using stockpiled, out of specification silica, topsoil and vegetation/trees stripped and stockpiled during initial operations.
- Revegetation will be undertaken using a seed blend which aims to provide a range of species to develop a self-sustaining plant community that will encourage a succession back to the original plant communities.
- The proponent will continue to engage with specialist sub-consultants to undertake weed identification and, if weeds are established after rehabilitation, weed control will be completed by TAM employees.
- Prior to permanent cessation of the activity, a Decommissioning and Rehabilitation Plan (DRP) will be submitted to the Director, EPA for approval.

### 6.10.3 Public and agency comment

One agency comment was received from STT, noting works outlined within the proposal will require assessment and approval from STT prior to proceeding, and noting that cleared, unrehabilitated land should be kept to a minimum and the need to rehabilitate the site in accordance with the QCP. The rehabilitation measures proposed in the EER align with this agency comment. No other public or agency comment was received in relation to decommissioning and rehabilitation.

### 6.10.4 Evaluation

The measures proposed in the EER align with the QCP and are considered sufficient to manage risks associated with site decommissioning and rehabilitation. **DC1** requires the proponent to progressively rehabilitate disturbed areas in accordance with the South Blackwater Mining and Rehabilitation Plan provided in the EER. Use of stockpiled topsoil and vegetation for rehabilitation purposes is supported and will be required by condition **DC2**. The requirement to undertake progressive rehabilitation is imposed in condition **DC3**, which also limits the maximum disturbed area to 18ha.

To ensure that decommissioning and rehabilitation is given due consideration during planning for temporary and permanent site closure, conditions **DC4** and **DC5** require notification to the Director, EPA should the activity be suspended and upon permanent cessation. Condition **DC6** requires the proponent to prepare a DRP for the activity upon cessation, to be submitted for the Director's approval.

### 6.10.5 Conditions

The proponent will be required to comply with the following conditions:

**DC1** Mining and Rehabilitation Plan

**DC2** Stockpiling of surface soil

**DC3** Progressive rehabilitation

**DC4** Temporary suspension of activity

**DC5** Notification of cessation

**DC6** DRP requirements

## 7 Issues not assessed by the Board

The following issue has been raised during the assessment process but is not the responsibility of the Board under EMPCA and is more appropriately addressed by Aboriginal Heritage Tasmania (AHT).

### 7.1 Issue 1: Aboriginal Heritage

#### 7.1.1 Potential impacts

The Aboriginal Heritage Register details 16 registered heritage sites located within a 5 km radius of the Big Keppel and Kuppe deposits. One of these registered sites, identified as an “isolated artefact”, is within the footprint of the Big Keppel extractive area.

An Aboriginal heritage assessment was completed on the site in 2020 as a component of the mining lease application. During this assessment, the field team was unable to relocate the artefact, but it is assumed to still be present in the area. An additional site, also an “isolated artefact”, was also identified within the Kuppe extractive area, and subsequently registered with AHT. Both sites have been assigned a scientific significance of low, aesthetic significance of medium, and social significance of medium-high.

The Aboriginal heritage assessment concluded that though there is a low to very low potential for additional undetected Aboriginal sites to be present, “*given the constraints in surface visibility, it cannot be stated with any certainty that there are no other additional Aboriginal heritage sites present within either the Kuppe of the Big Keppel footprints*”.

Although not explicitly explained in the EER, the proposal puts these identified Aboriginal heritage sites at risk of destruction, damage, misplacement, concealment or other interference.

#### 7.1.2 Management measures proposed in EER

The EER proposes the following mitigation measures to minimise impact to Aboriginal heritage during construction and operation:

- Complete an Aboriginal heritage assessment within the Road ID and Road IE footprints (not previously surveyed).
- If possible, the newly identified isolated artefact will be conserved in-situ.
- The location of the site will be plotted onto planning maps for the Kuppe footprint.
- Prior to works commencing, the site will be flagged, and a durable, high visibility temporary barricading will be erected around the defined boundaries of the site with a 2 m buffer applied; these barricades will be removed at the completion of mining works in this area.
- Mining and construction contractors will be informed of the location of the site and informed that the site is not to be impacted.
- Where conservation in-situ is not possible, a permit to impact the site will be applied for and obtained.
- If previously undetected archaeological sites or objects are located, the processes outlined in the Unanticipated Discovery Plan (UDP) will be followed.
- A copy of the UDP will be kept onsite during all ground disturbance work.
- All construction personnel will be made aware of the UDP and their obligations under the *Aboriginal Heritage Act 1975*.

#### 7.1.3 Public and agency comment

AHT provided advice that the Aboriginal heritage assessment undertaken in 2020 is considered valid for the purposes of the *Aboriginal Heritage Act 1975*. They acknowledged its findings and recommendations, and stated that all works should follow the management recommendations as provided in the assessment

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report. If there will be any impacts to Aboriginal heritage (including the two listed sites discussed above) a permit under the *Aboriginal Heritage Act 1975* must be obtained prior to works proceeding.

#### **7.1.4 Conclusion**

The Board has no remit to assess this issue as part of the EIA assessment under EMPCA. **LO3** in Schedule 3 of the permit reminds the proponent of their obligations with respect to any Aboriginal artefacts found on the site.



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## 8 Report Conclusions

This assessment has been based on the information provided by the proponent, Tasmanian Advanced Minerals Pty Ltd, in the permit application and the case for assessment (the EER).

This report incorporates specialist advice provided by EPA scientific and regulatory staff, the Department of Natural Resources and Environment Tasmania, and other government agencies, and considers issues raised in any public submissions.

It is concluded that:

1. the RMPS and EMPCS objectives have been duly and properly pursued in the assessment of the proposal; and
2. the assessment of the proposal has been undertaken in accordance with the Environmental Impact Assessment Principles; and
3. the proposal is capable of being managed in an environmentally acceptable manner such that it is unlikely that the RMPS and EMPCS objectives would be compromised, provided that the Permit Conditions - Environmental No. 10923 appended to this report are imposed and duly complied with.

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## Report Approval

**Environmental Assessment Report and conclusions, including environmental conditions, adopted:**



Andrew Paul

**CHAIRPERSON, BOARD OF THE ENVIRONMENT PROTECTION AUTHORITY**

Meeting date: 5 November 2024

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## 9 References

Pitt & Sherry (2024) Environmental Effects Report South Blackwater Silica Mine (Rev 02, 18 June 2024), for Tasmanian Advanced Minerals Pty Ltd; Tasmania.

[Protecting and Managing Karst | Department of Natural Resources and Environment Tasmania \(nre.tas.gov.au\)](https://www.nre.tas.gov.au)

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## I 0 Appendices

- Appendix 1 Summary of public and agency submissions
- Appendix 2 Table of proponent management measures
- Appendix 3 Permit conditions Environmental No: I0923

## Appendix I: Summary of public and agency submissions

Table I: Matters raised during public consultation period

Representation No. / Agency	Comments and Issues	Further Information Requested	EPA Comments
I	<p>A representation from Sustainable Timber Tasmania (STT) expressing view that:</p> <ul style="list-style-type: none"> <li>• Cleared, unrehabilitated land should be kept to a minimum.</li> <li>• Permanent Timber Production Zone Land (PTPZL) cleared must be rehabilitated to the Quarry Code of Practice 2017 standards once activities cease.</li> <li>• Works outlined within the proposal will require assessment and approval from STT prior to proceeding.</li> <li>• Removal or damage of any trees from PTPZL by a third party would be subject to compensation in accordance with the <i>Forest Management Act 2013</i></li> <li>• Road toll will be applicable for all roads owned or maintained by STT.</li> </ul>	No	<ul style="list-style-type: none"> <li>• Requests regarding rehabilitation align with conditions G7, DC3, and DC6 already proposed.</li> <li>• Observations/comments regarding matters for which STT has responsibility or collects revenue have been forwarded to the proponent for information purposes.</li> </ul>
Aboriginal Heritage Tasmania (AHT)	<ul style="list-style-type: none"> <li>• Provided advice that the Aboriginal heritage assessment undertaken is considered valid for the purposes of the <i>Aboriginal Heritage Act 1975</i>.</li> <li>• Acknowledged findings and recommendations of the Aboriginal heritage assessment report, and state that all works should follow the management recommendations as provided.</li> <li>• Stated that if there will be any impacts to Aboriginal</li> </ul>	No	<ul style="list-style-type: none"> <li>• These issues do not come under the remit of the EPA Board.</li> </ul>

Representation No. / Agency	Comments and Issues	Further Information Requested	EPA Comments
	<p>heritage (including the two listed sites discussed above) a permit under the <i>Aboriginal Heritage Act 1975</i> must be obtained prior to works proceeding.</p>		
<p>Mineral Resources Tasmania (MRT)</p>	<ul style="list-style-type: none"> <li>• Noted that the EER includes a mining plan that is not the current MRT approved mining plan. The updated mining plan has now been received by MRT.</li> <li>• The Mining Lease conditions require a security deposit increase for Stage 2 (construction and operation). MRT has communicated this to TAM.</li> <li>• There is a discrepancy between the total cleared area in the EER (18 ha) vs the Mining Lease (21 ha). MRT has consulted with TAM and will vary the Mining Lease Conditions to align with the permit.</li> </ul>	<p>No</p>	<ul style="list-style-type: none"> <li>• All issues noted are the responsibility of MRT with no further bearing on the assessment.</li> <li>• The bond noted in Section 3 is the current and updated amount, as confirmed with MRT.</li> </ul>

## Appendix 2: Table of proponent management measures

Table 1: Proponent’s 68 proposed management measures (Table 20, Part D of EER)

No.	Proposed Management Measure	Phase	EER Section
1	Vegetation clearance will not be undertaken during periods of extended dry, windy weather; native vegetation will be retained where practicable	Vegetation clearance Operation	Section 3.1.4
2	The area of disturbed land at any one time will be minimised and will not exceed 18 ha; disturbed areas will be progressively rehabilitated and revegetated	Construction Operation	Section 3.1.4 Section 3.2.4 Section 3.6.3 Section 3.7.4
3	Where practical, a minimum of at least 50% ground cover will be maintained across a given resource area during mining operations; where this is unachievable, soils will be stored in locations protected from wind and other forms of erosion and in a configuration that keeps the soil viable during storage	Construction Operation	Section 3.1.4
4	Where practical, existing trees will be retained to shield stockpiles and extraction areas from prevailing winds	Vegetation clearance Construction Operation	Section 3.1.4
5	Vehicle speed limits onsite will be restricted to 45 km/h	Pre-clearance Vegetation clearance Construction Operation	Section 3.1.4 Section 3.3.4 Section 3.6.3 Section 3.8.4
6	A water cart will be kept onsite during campaigns and watering will commence immediately whenever dust generation on internal roads or stockpiles is observed by the site manager	Operation	Section 3.1.4
7	If required at Big Keppel, crushing will occur at the stockpile pad (i.e. within the disturbance footprint)	Operation	Section 3.1.4
8	Outside of campaign, the site manager will monitor weather conditions and visit South Blackwater regularly to ensure any dust generated is appropriately managed	Operation	Section 3.1.4
9	All plant and equipment will be appropriately maintained and in good working order at all times	Pre-clearance Vegetation clearance Construction Operation	Section 3.1.4 Section 3.3.4 Section 3.5.4 Section 3.6.3

No.	Proposed Management Measure	Phase	EER Section
10	A minimum buffer of: <ul style="list-style-type: none"> <li>• 20 m will be maintained from Stephens Rivulet</li> <li>• 30 m will be maintained from Keppel Creek and Blackwater Rivulet; and</li> <li>• 30 m of all other smaller rivers, creeks and rivulets.</li> </ul>	Pre-clearance Vegetation clearance Construction Operation	Section 3.2.4 Section 3.6.3
11	Buffer boundaries from watercourses will be maintained; boundaries will be checked quarterly to ensure no encroachment	Construction Operation	Section 3.6.3
12	Four sediment control ponds will be constructed, two at each deposit	Construction	Section 3.2.4
13	Perimeter cut-off drains (i.e. bunds) will be constructed	Construction	Section 3.2.4
14	Internal roads will be maintained and well drained	Construction Operation	Section 3.2.4
15	Erosion and sediment control measures will be maintained as adapted as necessary	Construction Operation	Section 3.2.4
16	Quarterly monitoring of the water quality within the sediment control and natural watercourses (at the locations provided in Table 8) for pH, EC, turbidity and temperature	Construction Operation	Section 3.2.4 Section 3.10.2
17	Annual river and stream water quality monitoring will be conducted upstream, midstream and downstream of Stephens Rivulet Keppel Creek and Blackwater Rivulet using AusRivAS	Construction Operation	Section 3.6.3 Section 3.10.2
18	Water quality management systems will be maintained to ensure they are operating as intended and will be adapted as required	Construction Operation	Section 3.6.3 Section 3.10.2
19	Population monitoring every two years within Stephens Rivulet, Blackwater Rivulet and Keppel Creek	Construction Operation	Section 3.6.3
20	Trucks using regional roads (e.g. Roger River Road) will be limited to sign posted speeds and will avoid engine braking	Construction Operation	Section 3.3.4
21	Any extracted material that is not of sufficient grade for processing will be either stockpiled at the waste silica / gangue dump (Figure 9) or placed back into the extracted pits prior to covering with topsoil	Operation	Section 3.4.4
22	At Big Keppel, out of specification silica, post screening, will be trucked to the waste silica / gangue dump to the east of the deposit	Operation	Section 3.4.4



No.	Proposed Management Measure	Phase	EER Section
23	At Big Keppel, waste product will be stored behind a 3 m earthen bund; if the bund fills with water, it will be discharged through a pipe below the top of the bund wall and flow into the eastern sediment pond before discharge	Operation	Section 3.6.3
24	Resource or waste material will not be stockpiled in flood prone areas; the stockpile pad at Big Keppel will be protected from a 1-in-100-year flood level and have effective sediment control	Operation	Section 3.6.3
25	Any rubbish observed onsite, including crib room rubbish, will be collected and taken to Blackwater for disposal	Pre-clearance Vegetation clearance Construction Operation	Section 3.4.4
26	All solid wastes will be collected from Blackwater and recycled as appropriate or disposed of at a suitable landfill facility in accordance with EPA and/or CHC requirements	Pre-clearance Vegetation clearance Construction Operation	Section 3.4.4
27	No explosives or chemicals will be stored onsite	Pre-clearance Vegetation clearance Construction Operation	Section 3.5.4
28	Where blasting is required, holes will be loaded the day they are detonated, by a suitably qualified person in accordance with relevant safety standards	Construction Operation	Section 3.5.4
29	The fuel tanker will not enter South Blackwater	Pre-clearance Vegetation clearance Construction Operation	Section 3.5.4
30	Light vehicles will carry fuel clean-up equipment in case fuel spills occur during equipment refuelling	Construction Operation	Section 3.5.4
31	Refuelling and lubrication will be undertaken at least 20 m away from any freestanding water	Pre-clearance Vegetation clearance Construction Operation	Section 3.5.4
32	Where possible, no equipment maintenance or repair will occur at South Blackwater	Construction Operation	Section 3.5.4
33	All workers will be trained to respond to spills and leaks	Vegetation clearance Construction Operation	Section 3.5.4
34	The EPA will be notified as soon as possible of any significant spills	Vegetation clearance Construction Operation	Section 3.5.4

No.	Proposed Management Measure	Phase	EER Section
35	The devil den management protocol will be submitted to the EPA for approval and implemented once approved	Pre-clearance Construction Operation	Section 3.6.3
36	Pre-clearance devil and quoll den surveys will be completed	Pre-clearance	Section 3.6.3
37	A 50 m wide buffer will be established around any active maternal devil or quoll dens identified during the survey; the buffer will be maintained until the den has been confirmed to be vacant	Pre-clearance	Section 3.6.3
38	Any active devil and quoll dens identified during the pre-clearance survey will be monitored using motion sensor cameras by an experienced ecologist until the den is considered inactive and decommissioned	Pre-clearance	Section 3.6.3
39	Any inactive devil and quoll dens will be decommissioned; the camera monitoring of potential dens will be undertaken up until the time the potential den is decommissioned	Pre-clearance	Section 3.6.3
40	The extent of clearance required will be clearly marked; vehicles and materials will be confined to the marked work areas; work area boundaries will be maintained	Pre-clearance Vegetation clearance Construction Operation	Section 3.6.3
41	Where practicable, vegetation clearance will be scheduled outside of the devil and quoll breeding season	Vegetation clearance	Section 3.6.3
42	During vegetation clearance <ul style="list-style-type: none"> <li>Wildlife spotters will be available and will check all known dens</li> <li>Any injured or orphaned wildlife will be kept in a warm, dark, quiet place away from people and domestic animals; will not be fed; handling will be kept to a minimum</li> <li>Carer placements and coordination of veterinary care for any injured or orphaned wildlife will be coordinated through Bonorong Wildlife Rescue (0447 264 625)</li> </ul>	Vegetation clearance	Section 3.6.3
43	Progressive rehabilitation of disturbed areas will be undertaken in accordance with the South Blackwater Mining & Rehabilitation Plan	Operation	Section 3.6.3 Section 3.11
44	The draft Roadkill Management Plan will be implemented	Vegetation clearance Construction Operation	Section 3.6.3 Section 3.8.4
45	No vegetation will be cleared within waterbody buffer areas	Vegetation clearance Construction Operation	Section 3.6.3

No.	Proposed Management Measure	Phase	EER Section
46	There will be no construction or operation activities occurring with 500 m or 1 km line of sight of any known eagle nests during the eagle breeding season (from July to February)	Vegetation clearance Construction Operation	Section 3.6.3
47	A pre-construction survey by a suitably qualified person will be undertaken for eagle nests within the project footprint and within 1 km of the project footprint outside the breeding season	Pre-clearance	Section 3.6.3
48	If eagle nests are identified with 500 m or 1 km line of sight, an eagle nest management plan will be developed by an ecologist for approval by the EPA	Pre-clearance	Section 3.6.3
49	Where required to be developed, the eagle nest management plan will be implemented	Pre-clearance Vegetation clearance Construction Operation	Section 3.6.3
50	Removal of large suitable eagle nesting trees will be minimised	Vegetation clearance Construction Operation	Section 3.6.3
51	A TPZ of 15 m will be established around large old growth mature eucalyptus trees with a DBH greater than 100 cm that are to be retained	Pre-clearance	Section 3.6.3
52	TPZ of 15 m will be maintained around large old growth mature eucalyptus trees with a DBH greater than 100 cm	Vegetation clearance Construction Operation	Section 3.6.3
53	Tree health of large old growth mature eucalyptus trees with a DBH greater than 100 cm within the project footprint will be monitored annually by a qualified arborist	Vegetation clearance Construction Operation	Section 3.6.3
54	Where avoidance (i.e. retention of trees with a DBH greater than 100 cm) is not practicable, trees identified for felling will be inspected by an ecologist / arborist	Pre-clearance Vegetation clearance Construction Operation	Section 3.6.3
55	A permanent 150 m buffer will be maintained around all grey goshawk nests	Pre-clearance Vegetation clearance Construction Operation	Section 3.6.3
56	The Weed and Disease Management Plan will be implemented	Vegetation clearance Construction Operation	Section 3.6.3 Section 3.7.4 Section 3.11.2

No.	Proposed Management Measure	Phase	EER Section
57	Where practicable <ul style="list-style-type: none"> <li>Connectivity between remaining devil and quoll habitat areas will be maintained to compensate for fragmentation; and</li> <li>Critical devil and quoll habitat features for potential den sites will be maintained.</li> </ul>	Pre-clearance Vegetation clearance Construction Operation	Section 3.6.3
58	Annual monitoring for the GFC within Keppel Creek, Stephens Rivulet and Blackwater Creek will be completed	Construction Operation	Section 3.6.3
59	Signs warning of the presence of wildlife and a speed limit of 45 km/hr along all internal roads will be displayed at the interface between Blackwater and South Blackwater	Construction Operation	Section 3.6.3 Section 3.8.4
60	On public roads, all wildlife speed reduction warning signs will be obeyed	Construction Operation	Section 3.6.3 Section 3.8.4
61	A detailed inspection of all cells will be completed prior to and post vegetation stripping to identify karst features; where identified	Pre-clearance Vegetation clearance	Section 3.6.3
62	All machines will be inspected prior to transport to South Blackwater to ensure they are cleaned appropriately	Pre-clearance Vegetation clearance Construction Operation	Section 3.6.3
63	An Aboriginal heritage assessment within the Road 1D and Road 1E footprints will be completed	Pre-clearance	Section 3.9.3
64	Where possible Site AH13853 will be conserved in-situ; where conservation in-situ is not possible, a Permit to impact the site will be applied for and obtained from the Minister	Vegetation clearance Construction Operation	Section 3.9.3
65	If isolated artefact AH7648 is relocated, a Permit to impact the site will be applied for and obtained from the Minister	Vegetation clearance Construction Operation	Section 3.9.3
66	If previously undetected archaeological sites or objects are located, the processes outlined in the UDP will be followed	Vegetation clearance Construction Operation	Section 3.9.3
67	Prior to permanent cessation of South Blackwater, a DRP will be submitted to the EPA for approval.	Prior to permanent closure	Section 3.11.2
68	Upon permanent cessation of South Blackwater, the DRP will be implemented	Permanent closure	Section 3.11.2

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**Appendix 3: Permit conditions – Environmental No: 10923**

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**PERMIT PART B**  
**PERMIT CONDITIONS - ENVIRONMENTAL No. 10923**

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Issued under the *Environmental Management and Pollution Control Act 1994*

Activity: **The operation of a silica flour mine and materials handling (screening and crushing) activity (ACTIVITY TYPE: Crushing, grinding, milling or separating into different sizes (rocks, ores or minerals))**  
**SOUTH BLACKWATER MINE, BLACKWATER ROAD**  
**WEST COAST TAS 7321**

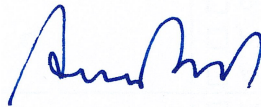
The above activity has been assessed as a level 2 activity under the *Environmental Management and Pollution Control Act 1994*.

Acting under Section 25(5)(a)(i) of the EMPCA, the Board of the Environment Protection Authority has required that this Permit Part B be included in any Permit granted under the *Land Use Planning and Approvals Act 1993* with respect to the above activity.

Municipality: **CIRCULAR HEAD**  
Permit Application Reference: **DA 2024/024**  
EPA file reference: **21/2984**

Date conditions approved: 7 November 2024

Signed:



CHAIRPERSON, BOARD OF THE ENVIRONMENT  
PROTECTION AUTHORITY

## DEFINITIONS

Unless the contrary appears, words and expressions used in this Permit Part B have the meaning given to them in **Schedule 1** of this Permit and in the EMPCA. If there is any inconsistency between a definition in the EMPCA and a definition in this Permit Part B, the EMPCA prevails to the extent of the inconsistency.

## ENVIRONMENTAL CONDITIONS

The person responsible for the activity must comply with the conditions contained in **Schedule 2** of this Permit Part B.

## INFORMATION

Attention is drawn to **Schedule 3**, which contains important additional information.

## Table Of Contents

Schedule 1: Definitions.....	5
Schedule 2: Conditions.....	7
Maximum Quantities.....	7
Q1 Regulatory limits.....	7
General.....	7
G1 Access to and awareness of conditions and associated documents.....	7
G2 Activity Area.....	7
G3 Incident response.....	7
G4 Proposed change to activity.....	7
G5 Change of responsibility.....	8
G6 Change of ownership.....	8
G7 Complaints register.....	8
G8 Quarry Code of Practice.....	8
G9 Annual Environmental Review.....	8
G10 Amendment of required plans and reports.....	9
Atmospheric.....	9
A1 Covering of vehicles.....	9
A2 Control of dust emissions.....	9
Decommissioning And Rehabilitation.....	9
DC1 Mining and Rehabilitation Plan.....	9
DC2 Stockpiling of surface soil.....	10
DC3 Progressive rehabilitation.....	10
DC4 Temporary suspension of activity.....	10
DC5 Notification of cessation.....	11
DC6 DRP requirements.....	11
Flora And Fauna.....	11
FF1 No clearance of vegetation.....	11
FF2 Tasmanian devil and spotted-tailed quoll den survey.....	11
FF3 Tasmanian masked owl management.....	12
FF4 Tasmanian wedge-tailed eagle and white-bellied sea eagle management.....	12
FF5 Giant freshwater crayfish management.....	12
Hazardous Substances.....	13
H1 Spill kits.....	13
H2 Storage and handling of hazardous materials.....	13
H3 Handling of hazardous materials - mobile.....	13
Monitoring.....	13
M1 Monitoring requirements.....	13
M2 Samples and measurements for monitoring purposes.....	13
M3 Signage of monitoring points.....	14
Noise Control.....	14
N1 Blasting times.....	14
N2 Operating hours.....	14
Operations.....	14
OP1 Karst protection.....	14
OP2 Machinery washdown.....	14
OP3 Weed management.....	15
OP4 Weed and Disease Management Plan.....	15
Stormwater Management.....	15
SW1 Perimeter drains or bunds.....	15
SW2 Maintenance of settling ponds.....	15



SW3 Stormwater..... 15

Schedule 3: Information..... 16

    Legal Obligations..... 16

        LO1 EMPCA..... 16

        LO2 Storage and handling of dangerous goods, explosives and dangerous substances..... 16

        LO3 Aboriginal relics requirements..... 16

        LO4 MRDA..... 16

    Other Information..... 16

        OI1 Notification of incidents under section 32 of EMPCA ..... 16

        OI2 Waste management hierarchy..... 16

***Attachments***

Attachment 1: PCE 10923 - South Blackwater Silica Mine - The Land (modified: 26/09/2024 17:01)..... 1 page

Attachment 2: PCE 10923 - South Blackwater Silica Mine - Activity Areas - Kuppe Deposit (modified: 26/09/2024 17:01)..... 1 page

Attachment 3: PCE 10923 - South Blackwater Silica Mine - Activity Areas - Big Keppel (modified: 26/09/2024 17:01)..... 1 page

Attachment 4: Table of Monitoring Requirements (modified: 01/10/2024 11:40)..... 1 page

## Schedule 1: Definitions

In this Permit Part B:-

**58,000 cubic metres** is considered equivalent to 75 000 tonnes.

**Aboriginal Relic** has the meaning described in section 2(3) of the *Aboriginal Heritage Act 1975*.

**Activity** means any environmentally relevant activity (as defined in Section 3 of EMPCA) to which this document relates, and includes more than one such activity.

**Activity Area** means the area to be used for the Activity when these conditions take effect as depicted in Attachments 1, 2 & 3 as Kuppe, Big Keppel, Road 1D and Road 1E.

**Authorized Officer** means an authorized officer under section 20 of EMPCA.

**Conservation Assessments** means the The Environment Unit of the Environment, Heritage & Land Division of the Department of Natural Resources & Environment.

**Director** means the Director, Environment Protection Authority holding office under section 18 of EMPCA and includes a delegate or person authorised in writing by the Director to exercise a power or function on the Director's behalf.

**DRP** means Decommissioning and Rehabilitation Plan.

**EER** means the document entitled *Environmental Effects Report South Blackwater Silica Mine* by Pitt and Sherry dated 18 June 2024.

**EMPCA** means the *Environmental Management and Pollution Control Act 1994*.

**Environmental Harm** and **Material Environmental Harm** and **Serious Environmental Harm** each have the meanings ascribed to them in Section 5 of EMPCA.

**Environmental Nuisance** has the meanings ascribed to it in Section 3 of EMPCA.

**Environmentally Hazardous Material** means any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils, waste and chemicals but excludes sewage.

**EPA Board** means the Board of the Environment Protection Authority established under section 13 of EMPCA and includes a delegate or person authorised in writing by the EPA Board to exercise a power or function on the EPA Board's behalf.

**Giant Freshwater Crayfish Monitoring Plan** means the document entitled *Giant Freshwater Crayfish (Astacopsis gouldi) Monitoring Plan* by North Barker Ecosystem Services dated 29 January 2024.

**Mammal Den Decommissioning Protocol** means the document entitled *Den Management Protocol: Pre-clearance survey requirements* by North Barker Ecosystem Services dated 2021.

**Maximum Disturbed Area** means the area disturbed to facilitate the activity and includes but is not limited to; vegetation disturbance, soil disturbance, access roads, hardstand, working area, vehicle parking and infrastructure (i.e. buildings, site office, sheds etc).

**Mining and Rehabilitation Plan** means the document titled *South Blackwater Mining and Rehabilitation Plan* prepared by Tasmanian Advanced Minerals Pty Ltd dated October 2023, and includes any amendment to or substitution of this document approved in writing by the Director.

**Non-Trivial Environmental Incidents** means an incident requiring the person responsible to implement actions to control or respond to the incident to minimise environmental harm and/or nuisance.

**Person Responsible** is any person who is or was responsible for the environmentally relevant activity to which this document relates and includes the officers, employees, contractors, joint venture partners and agents of that person, and includes a body corporate.

**Planning Authority** means the Council(s) for the municipal area(s) in which The Land is situated.

**Pollutant** has the meaning ascribed to it in section 3 of EMPCA.

**Potential Tasmanian masked owl nesting tree** means any tree with a large hollow (>15 cm entrance diameter) or any tree with a diameter at breast height of >100cm.

**Quarry Code of Practice** means the document of this title published by the Environment Protection Authority in May 2017, and includes any subsequent versions of this document.

**Reporting Period** means the 12 months ending on 31 December of each year.

**The Land** means the land on which the activity to which this document relates may be carried out and includes: buildings and other structures permanently fixed to the land, any part of the land covered with water, and any water covering the land. The Land falls within the area defined by Attachment 1.

**Weed** means a plant species that has, or is likely to have, an adverse impact on the environment because of the introduction, spread or increase in population size of the species in an area; and includes a declared weed as defined in the *Biosecurity Act 2019* and subordinate regulations.

**Weed And Disease Guidelines** means the document titled *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania*, by the Department of Primary Industries, Parks, Water and Environment, dated March 2015, and any amendment to or substitution of this document.

**Weed and Disease Management Plan** means the document titled *Weed and Disease Management Plan* by North Barker Ecosystem Services dated 7 November 2023.

## Schedule 2: Conditions

### Maximum Quantities

#### **Q1 Regulatory limits**

- 1 The activity must not exceed the following limits :
  - 1.1 58,000 cubic metres per year of rocks, ores or minerals processed.
  - 1.2 75,000 tonnes per year of minerals extracted from Big Keppel and Kuppe combined

### General

#### **G1 Access to and awareness of conditions and associated documents**

A copy of these conditions and any associated documents referred to in these conditions must be held in a location that is known to and accessible to the person responsible for the activity. The person responsible for the activity must ensure that all persons who are responsible for undertaking work within the Activity Area, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.

#### **G2 Activity Area**

The activity must be confined to the Activity Area.

#### **G3 Incident response**

If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the activity, then the person responsible for the activity must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.

#### **G4 Proposed change to activity**

- 1 The person responsible must notify the Director in writing prior to implementing any change to the activity authorised by this document that may cause or increase the emission of a pollutant or which may result in environmental harm or environmental nuisance (even temporarily). A change includes, but is not limited to, any of the following:
  - 1.1 an increase in the discharge of a pollutant, or the location of its discharge.
  - 1.2 the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the activity.
  - 1.3 any clearance of native vegetation or earthworks.
  - 1.4 a change in the quantity or characteristics of materials used in carrying out the activity.
- 2 The notification must be in an approved form and include the following:
  - 2.1 details of the proposed change;
  - 2.2 an assessment of the environmental impacts that may result from the change;
  - 2.3 any relevant approvals held by the person responsible; and
  - 2.4 any advice from the relevant planning authority to the effect that approval is not required.
- 3 The person responsible must provide additional information as requested by an Authorized Officer.

- 4 The proposed change must not be implemented until the Director has confirmed in writing that they are satisfied that no other approval or variation of this document is required.
- 5 For the avoidance of doubt, a notification of a proposed change under this provision is not required if the proposed change is part of a referral to the EPA Board for assessment under sections 24, 25 or 27 of EMPCA.

#### **G5 Change of responsibility**

If the person responsible for the activity intends to cease to be responsible for the activity, that person must notify the Director in writing of the full particulars of any person who will become the person responsible for the activity, before such cessation.

#### **G6 Change of ownership**

If the owner of the Activity Area changes or is to change, then, as soon as reasonably practicable but no later than 30 days after becoming aware of the change or intended change in the ownership of the Activity Area, the person responsible must notify the Director in writing of the change or intended change of ownership.

#### **G7 Complaints register**

- 1 A public complaints register must be maintained. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental harm (including an environmental nuisance) has been caused by the activity:
  - 1.1 the date and time at which the complaint was received;
  - 1.2 contact details for the complainant (where provided);
  - 1.3 the subject matter of the complaint;
  - 1.4 any investigations undertaken with regard to the complaint; and
  - 1.5 the manner in which the complaint was resolved, including any mitigation measures implemented.
- 2 Complaint records must be retained for a period of at least 3 years.

#### **G8 Quarry Code of Practice**

Unless otherwise required by these conditions or required in writing by the Director, the activity (or activities) undertaken within the Activity Area must comply with the Acceptable Standards provisions of the *Quarry Code of Practice*.

#### **G9 Annual Environmental Review**

- 1 Unless otherwise specified in writing by the Director, a publicly available Annual Environmental Review for the activity must be submitted to the Director each year within three months of the end of the reporting period. Without limitation, each Annual Environmental Review must include the following information:
  - 1.1 a statement by the General Manager, Chief Executive Officer or equivalent for the activity acknowledging the contents of the Annual Environmental Review;
  - 1.2 subject to the *Personal Information Protection Act 2004*, a list of all complaints received from the public during the reporting period concerning actual or potential environmental harm or environmental nuisance caused by the activity and a description of any actions taken as a result of those complaints;
  - 1.3 details of environment-related procedural or process changes that have been implemented during the reporting period;

- 1.4 a summary of the amounts (tonnes or litres) of both solid and liquid wastes produced and treatment methods implemented during the reporting period. Initiatives or programs planned to avoid, minimise, re-use, or recycle such wastes over the next reporting period should be detailed;
- 1.5 details of all non-trivial environmental incidents and/or incidents of non compliance with these conditions that occurred during the reporting period, and any mitigative or preventative actions that have resulted from such incidents;
- 1.6 a summary of the monitoring data, survey results and record keeping required by these conditions. This information should be presented in graphical form where possible, including comparison with the results of at least the preceding reporting period. Special causes and system changes that have impacted on the parameters monitored must be noted. Explanation of significant deviations between actual results and any predictions made in previous reports must be provided;
- 1.7 identification of breaches of limits specified in these conditions and significant variations from predicted results contained in the EER, an explanation of why each identified breach of specified limits or variation from predictions occurred and details of the actions taken in response to each identified breach of limits or variance from predictions;
- 1.8 a list of any issues, not discussed elsewhere in the report, that must be addressed to improve compliance with these conditions, and the actions that are proposed to address any such issues;
- 1.9 a summary of fulfilment of environmental commitments made for the reporting period. This summary must include indication of results of the actions implemented and explanation of any failures to achieve such commitments; and
- 1.10 a summary of any community consultation and communication undertaken during the reporting period.

#### **G10 Amendment of required plans and reports**

- 1 The plans and reports required by these conditions must be amended to address any matter required by the Director, as advised by notice in writing.
- 2 Amended plans and reports must be resubmitted within the timeframe that the Director specifies.

#### **Atmospheric**

##### **A1 Covering of vehicles**

Vehicles carrying loads containing material which may blow or spill must be equipped with effective control measures to prevent the escape of the materials from the vehicles when they leave the Activity Area or travel on public roads. Effective control measures may include tarpaulins or load dampening.

##### **A2 Control of dust emissions**

Dust emissions from within the Activity Area must be controlled to the extent necessary to prevent environmental nuisance beyond the boundary of the Activity Area.

#### **Decommissioning And Rehabilitation**

##### **DC1 Mining and Rehabilitation Plan**

- 1 The person responsible must implement and act in accordance with the most recent approved Mining and Rehabilitation Plan.

- 2 In the event that the Director, by notice in writing to the person responsible, either approves a minor variation to the approved Mining and Rehabilitation Plan or approves a new Mining and Rehabilitation Plan in substitution for the Mining and Rehabilitation Plan originally approved, the person responsible must implement and act in accordance with the varied or new Mining and Rehabilitation Plan, as the case may be.

## **DC2 Stockpiling of surface soil**

Prior to commencement of extractive activities on the Activity Area, surface soils must be removed in that portion of Activity Area to be disturbed by the conduct of the activity and stockpiled for later use in rehabilitation of the Activity Area. Topsoil must be kept separate from other overburden and protected from erosion or other disturbance.

## **DC3 Progressive rehabilitation**

- 1 Worked out or disused sections of the Activity Area must be rehabilitated concurrently with extractive activities on other sections of the Activity Area. Progressive rehabilitation must be carried out in accordance with the most recent approved Mining and Rehabilitation Plan, unless otherwise approved in writing by the Director.
- 2 Unless otherwise approved in writing by the Director, the maximum disturbed area of land which may remain, at any time, without rehabilitation is 18 ha within the Activity Area.

## **DC4 Temporary suspension of activity**

- 1 Within 30 days of becoming aware of any event or decision which is likely to give rise to the temporary suspension of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to suspend or has suspended.
- 2 During temporary suspension of the activity The Land must be managed and monitored by the person responsible for the activity to ensure that emissions from The Land do not cause serious environmental harm, material environmental harm or environmental nuisance.
- 3 If required by the Director, a Care and Maintenance Plan for the activity must be submitted to the Director for approval, by a date specified in writing by the Director. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted document adequately addresses the requirements of this condition.
  - 3.1 The plan must be prepared in accordance with any guidelines provided by the Director.
  - 3.2 Once approved the person responsible must act in accordance with the approved Care and Maintenance Plan.
  - 3.3 The person responsible may apply to the Director to vary or substitute the Care and Maintenance Plan. Any variation or substitution of the plan approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.
- 4 Unless otherwise approved in writing by the Director, if the activity on The Land has substantially ceased for 2 years or more, rehabilitation of The Land must be carried out in accordance with the requirements of these conditions as if the activity has permanently ceased.

**DC5 Notification of cessation**

Within 30 days of becoming aware of any event or decision which is likely to give rise to the permanent cessation of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to cease or has ceased.

**DC6 DRP requirements**

- 1 Unless otherwise approved in writing by the Director, a Decommissioning and Rehabilitation Plan (DRP) for the activity must be submitted for approval to the Director within 30 days of the Director being notified of the planned cessation of the activity. The DRP must be prepared in accordance with any guidelines provided by the Director. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted document adequately addresses the requirements of this condition.
- 2 The person responsible may apply to the Director to vary or substitute the DRP. Any variation or substitution of the plan approved by the Director, by notice in writing, replaces the earlier approval with effect from the date specified in the notice.

**Flora And Fauna****FF1 No clearance of vegetation**

- 1 Unless otherwise approved in writing by the Director:
  - 1.1 no native vegetation clearance or disturbance is to take place outside the Activity Area; and
  - 1.2 the boundary of the Activity Area must be delineated with a fence, marking or similar method approved in writing by the Director within two (2) months of these conditions taking effect.
- 2 Unless otherwise approved in writing by the Director, the activity must be undertaken in a manner that does not cause degradation or disturbance to any Threatened Native Vegetation Communities that occur on The Land, including but not limited to *Eucalyptus brookeriana* wet forest (TasVEG Code: WBR).

**FF2 Tasmanian devil and spotted-tailed quoll den survey**

- 1 Unless otherwise specified in writing by the Director, no more than eight (8) weeks prior to the clearing of any vegetation or the relocation or use of any vegetation stockpile(s) on The Land a survey of the vegetation and/or vegetation stockpile(s) to be disturbed for Tasmanian devil (*Sarcophilus harrisii*) or spotted-tailed quoll (*Dasyurus maculatus maculatus*) dens must be undertaken.
- 2 The survey must be undertaken by a suitably qualified person in accordance with the Mammal Den Decommissioning Protocol.
- 3 Any dens or potential dens identified during the survey must be managed in accordance with the management measures for Tasmanian devil and spotted-tailed quoll in the Mammal Den Decommissioning Protocol.
- 4 Conservation Assessments and the Director must be notified of the location of any dens and the person responsible must seek advice from Conservation Assessments on the requirements to protect any dens found. Disturbance of any area found to contain dens must not commence without the written approval of the Director.



**FF3 Tasmanian masked owl management**

- 1 Unless otherwise approved in writing by the Director, Tasmanian masked owl (*Tyto novaehollandiae subsp. castanops*) management must be in accordance with Section 3.6.3 of the EER including, but not limited to, the following:
  - 1.1 a check of potential Tasmanian masked owl nesting trees within the Activity Area and 150 metres from the Activity Area, must be undertaken prior to commencement of works including vegetation clearance, by a suitably qualified person. A report including survey results must be provided to the Director and Conservation Assessments.
  - 1.2 clearing of identified potential Tasmanian masked owl nesting trees must be in accordance with Section 3.6.3 of the EER and must not occur without written approval by the Director.
  - 1.3 a suitably trained, dedicated bird observer must be onsite during tree clearing works to assess and observe bird behaviour. Should a Tasmanian masked owl be observed utilising or exiting a tree works within 150 metres of the tree must cease immediately and the Director and Conservation Assessments must be contacted for advice. Works must not recommence without the written approval of the Director.
  - 1.4 a minimum Tree Protection Zone of 15 metres must be established and delineated around identified trees to be retained with a diameter at breast height of greater than 100 cm.

**FF4 Tasmanian wedge-tailed eagle and white-bellied sea eagle management**

- 1 Unless otherwise approved in writing by the Director:
  - 1.1 no more than 12 months prior to commencement of works including vegetation clearance, a survey for nests of the Tasmanian wedge-tailed eagle (*Aquila audax subsp. fleayi*) and white-bellied sea eagle (*Haliaeetus leucogaster*) must be undertaken between March and June within the Activity Area and within 1 km of the boundary of the Activity Area.
  - 1.2 eagle nest searches should be undertaken in accordance with the *EPA Guide to Eagle Nest Searching and Nest Activity Areas*.
  - 1.3 a report outlining the findings of the eagle nest survey must be submitted to the Director for approval within 30 days of the survey being undertaken.
- 2 Works including vegetation clearance must not commence without written approval from the Director.

**FF5 Giant freshwater crayfish management**

- 1 Unless otherwise approved in writing by the Director, the activity must be conducted in a manner that does not cause degradation or disturbance to Giant freshwater crayfish (*Astacopsis gouldi*) and their habitat, and in accordance with the following:
  - 1.1 a 30 metre buffer zone must be maintained between the Activity Area boundary and Blackwater Rivulet, Keppel Creek and all other water courses.
  - 1.2 a 20 metre buffer zone must be maintained between the Activity Area boundary and Stephens Rivulet.
- 2 Annual river condition monitoring must be undertaken by a suitably qualified person and in accordance with the Giant Freshwater Crayfish Monitoring Plan.
- 3 Every two years Giant freshwater crayfish population monitoring must be undertaken by a suitably qualified person and in accordance with the Giant Freshwater Monitoring Plan.

## **Hazardous Substances**

### **H1 Spill kits**

Spill kits appropriate for the types and volumes of materials handled within the Activity Area must be kept in appropriate locations and maintained in a functional condition to assist with the containment of spilt environmentally hazardous materials.

### **H2 Storage and handling of hazardous materials**

- 1 Unless otherwise approved in writing by the Director, environmentally hazardous materials held within the Activity Area must be:
  - 1.1 stored within maintained and functional impervious bunded areas, spill trays or other containment systems; and
  - 1.2 managed to prevent unauthorised discharge, emission or deposition of pollutants:
    - 1.2.1 to soils within the boundary of the Activity Area in a manner that is likely to cause serious or material environmental harm;
    - 1.2.2 to groundwater;
    - 1.2.3 to waterways; or
    - 1.2.4 beyond the boundary of the Activity Area.

### **H3 Handling of hazardous materials - mobile**

- 1 Where mobile containment of environmentally hazardous materials is utilised for the fuelling or servicing of mobile or fixed plant within the Activity Area, all reasonable measures must be implemented to prevent unauthorised discharge, emission or deposition of pollutants:
  - 1.1 to soils within the boundary of the Activity Area in a manner that is likely to cause serious or material environmental harm;
  - 1.2 to groundwater;
  - 1.3 to waterways; or
  - 1.4 beyond the boundary of the Activity Area.
- 2 Reasonable measures may include spill kits, spill trays/bunds or absorbent pads, and automatic cut-offs on any pumping equipment.

## **Monitoring**

### **M1 Monitoring requirements**

- 1 Unless otherwise specified in writing by the Director, monitoring must be undertaken in accordance with the Table of Monitoring at Attachment 4, as follows:
  - 1.1 the items listed in Column 1 must be sampled or tested at the locations listed in Column 2 for the parameters listed in Column 3 at the frequencies listed in Column 5 using the techniques listed in Column 6; and
  - 1.2 resultant monitoring data must be reported to the Director in accordance with the requirements set out in Column 7 and in the units listed in Column 4.

### **M2 Samples and measurements for monitoring purposes**

- 1 Any sample or measurement required under these conditions must be taken and processed in accordance with the following:
  - 1.1 sampling and measuring must be undertaken by a person with training, experience, and knowledge of the appropriate procedure;
  - 1.2 the integrity of samples must be maintained prior to delivery to a testing facility;

- 2 Monitoring equipment must be maintained in accurate working order in accordance with the manufacturer's specifications and, unless otherwise approved in writing by the Director, must be validated at least once every 12 months.
  - 2.1 The dates on which monitoring equipment has been validated must be recorded and validation records kept for a minimum of 3 years.
- 3 For the purposes of this condition:
  - 3.1 'validate' means to undertake a set of actions including inspecting the monitoring equipment to check that it is installed in compliance with any relevant standards and is maintained to an acceptable state of repair, which provides an acceptable level of confidence that the monitoring equipment operates within an acceptable range of error under normal operating conditions.

### **M3 Signage of monitoring points**

- 1 With the exception of open water sampling and monitoring locations external to the Activity Area, all monitoring points must be clearly marked to indicate the location and name of the monitoring point.
  - 1.1 The location of monitoring points external to the Activity Area must be recorded with sufficient accuracy to ensure that monitoring can be undertaken at the same location repeatedly and in accordance with these conditions.

### **Noise Control**

#### **N1 Blasting times**

Blasting within the Activity Area must take place only between the hours of 1000 hours and 1600 hours Monday to Friday. Blasting must not take place on Saturdays, Sundays or public holidays unless prior written approval of the Director has been obtained.

#### **N2 Operating hours**

Unless otherwise approved by the Director, activities associated with the extraction of silica flour, and screening and loading of product, must not be undertaken outside the hours of 0700 hours to 1900 hours each day.

### **Operations**

#### **OP1 Karst protection**

- 1 If natural cavities, pipes or cave formations are encountered during the course of carrying out the activity:
  - 1.1 any operations that may cause damage to the natural cavities, pipes, or cave formations must cease immediately; and
  - 1.2 the Director must be notified within 48 hours of encountering the natural cavities, pipes or cave formations.
- 2 Operations must not recommence except in accordance with the advice of a suitably qualified Earth Science Specialist, and until approved in writing by the Director.

#### **OP2 Machinery washdown**

- 1 Prior to entering The Land, machinery must be washed in accordance with the Weed and Disease Guidelines and the Weed and Disease Management Plan.
- 2 Condition OP2(1) does not apply to machinery entering The Land from the Blackwater Mine.

**OP3 Weed management**

The Activity Area must be kept substantially free of weeds to minimise the risk of weeds being spread through the transport of products from the Activity Area.

**OP4 Weed and Disease Management Plan**

- 1 The person responsible must act in accordance with the Weed and Disease Management Plan.
- 2 The person responsible may apply to the Director to vary or substitute the Weed and Disease Management Plan. Any variation or substitution of the Weed and Disease Management Plan must be:
  - 2.1 consistent with the Weed and Disease Guidelines; and
  - 2.2 approved in writing by the Director.
- 3 Once approved the varied or substituted Weed and Disease Management Plan replaces the earlier approval with effect from the date specified in the notice.

**Stormwater Management****SW1 Perimeter drains or bunds**

- 1 Perimeter cut-off drains, or bunds, must be constructed at strategic locations at the Activity Area to prevent surface run-off from entering the area used or disturbed in carrying out the activity. All reasonable measures must be implemented to ensure that sediment transported along these drains, or bunds, remains within the Activity Area. Such measures may include provision of strategically located sediment fences, appropriately sized and maintained sediment settling ponds, vegetated swales and detention basins.
- 2 Drains, or bunds, must have sufficient capacity to contain run-off that could reasonably be expected to arise during a 1 in 20 year rainfall event. Maintenance activities must be undertaken regularly to ensure that this capacity does not diminish.

**SW2 Maintenance of settling ponds**

Sediment settling ponds must be periodically cleaned out to ensure that the pond design capacity is maintained. Sediment removed during this cleaning must be securely deposited such that sediment will not be transported off the Activity Area by surface run-off.

**SW3 Stormwater**

- 1 Polluted stormwater that will be discharged from the Activity Area must be collected and treated prior to discharge to the extent necessary to prevent serious or material environmental harm, or environmental nuisance.
- 2 Notwithstanding the above, all stormwater that is discharged from the Activity Area must not carry pollutants such as sediment, oil and grease in quantities or concentrations that are likely to degrade the visual quality of any receiving waters outside the Activity Area.
- 3 All reasonable measures must be implemented to ensure that solids entrained in stormwater are retained on the Activity Area. Such measures may include appropriately sized and maintained sediment settling ponds or detention basins.

## Schedule 3: Information

### Legal Obligations

#### **LO1 EMPCA**

The activity must be conducted in accordance with both the conditions in this document and the obligations of the *Environmental Management and Pollution Control Act 1994* (EMPCA) and subordinate regulations. The conditions of this document do not replicate legislated obligations; therefore, you should ensure you are aware of your obligations under EMPCA and subordinate regulations.

#### **LO2 Storage and handling of dangerous goods, explosives and dangerous substances**

- 1 The storage, handling and transport of dangerous goods, explosives and dangerous substances must comply with the requirements of relevant State Acts and any regulations thereunder, including:
  - 1.1 *Work Health and Safety Act 2012* and subordinate regulations;
  - 1.2 *Explosives Act 2012* and subordinate regulations; and
  - 1.3 *Dangerous Goods (Road and Rail Transport) Act 2010* and subordinate regulations.

#### **LO3 Aboriginal relics requirements**

- 1 Aboriginal relics, objects, sites, places and human remains regardless of whether they are located on public or private land, are protected under the *Aboriginal Heritage Act 1975*.
- 2 Unanticipated discoveries of Aboriginal heritage must be reported to Aboriginal Heritage Tasmania on **1300 487 045** as soon as possible.

#### **LO4 MRDA**

Operations must be undertaken in accordance with a mining plan approved by the Director of Mines and a Mining Lease issued under the *Mineral Resources Development Act 1995* (MRDA).

### Other Information

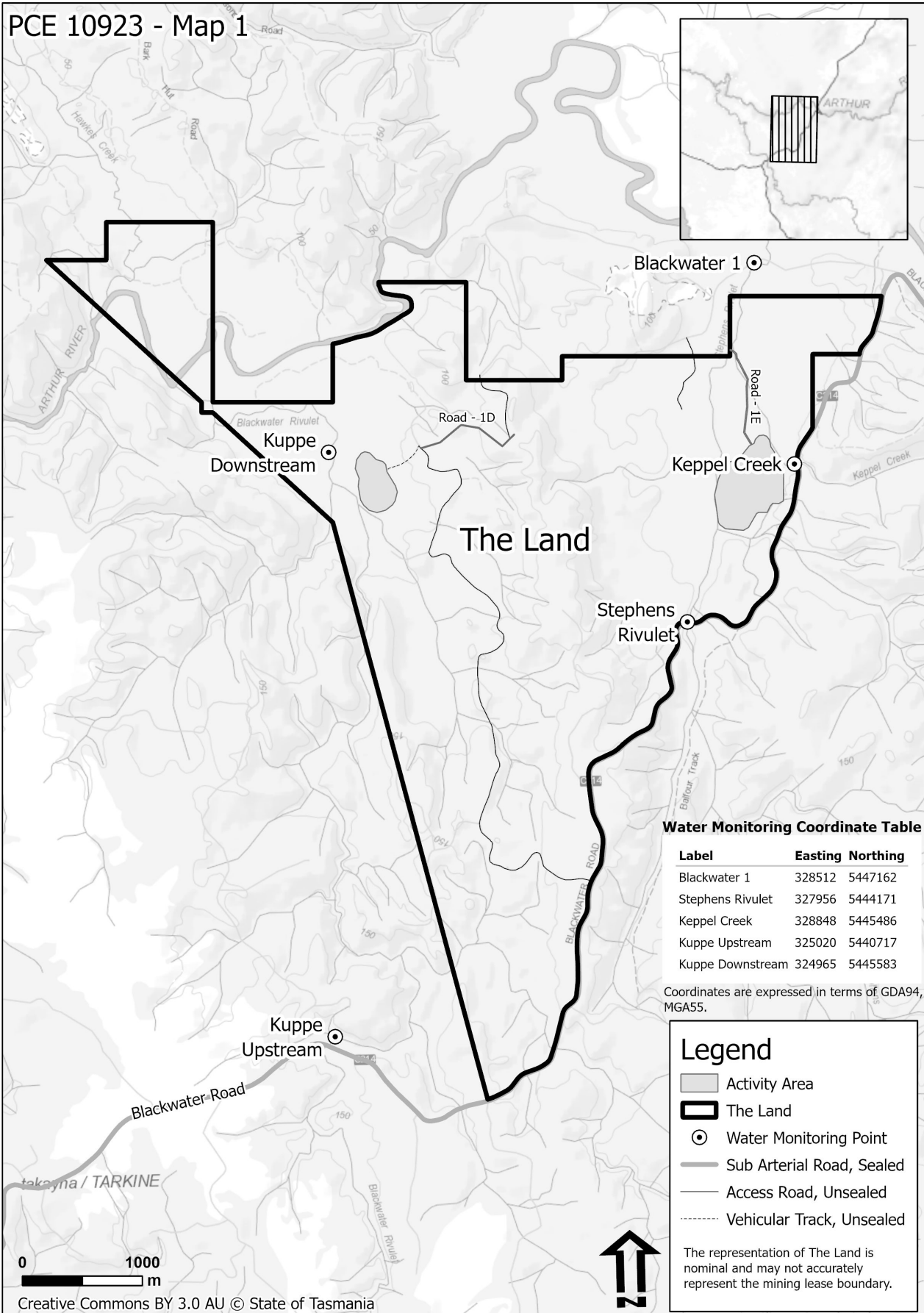
#### **OI1 Notification of incidents under section 32 of EMPCA**

Where a person is required by section 32 of EMPCA to notify the Director of the release of a pollutant, the Director can be notified by telephoning **1800 005 171** (a 24-hour emergency telephone number).

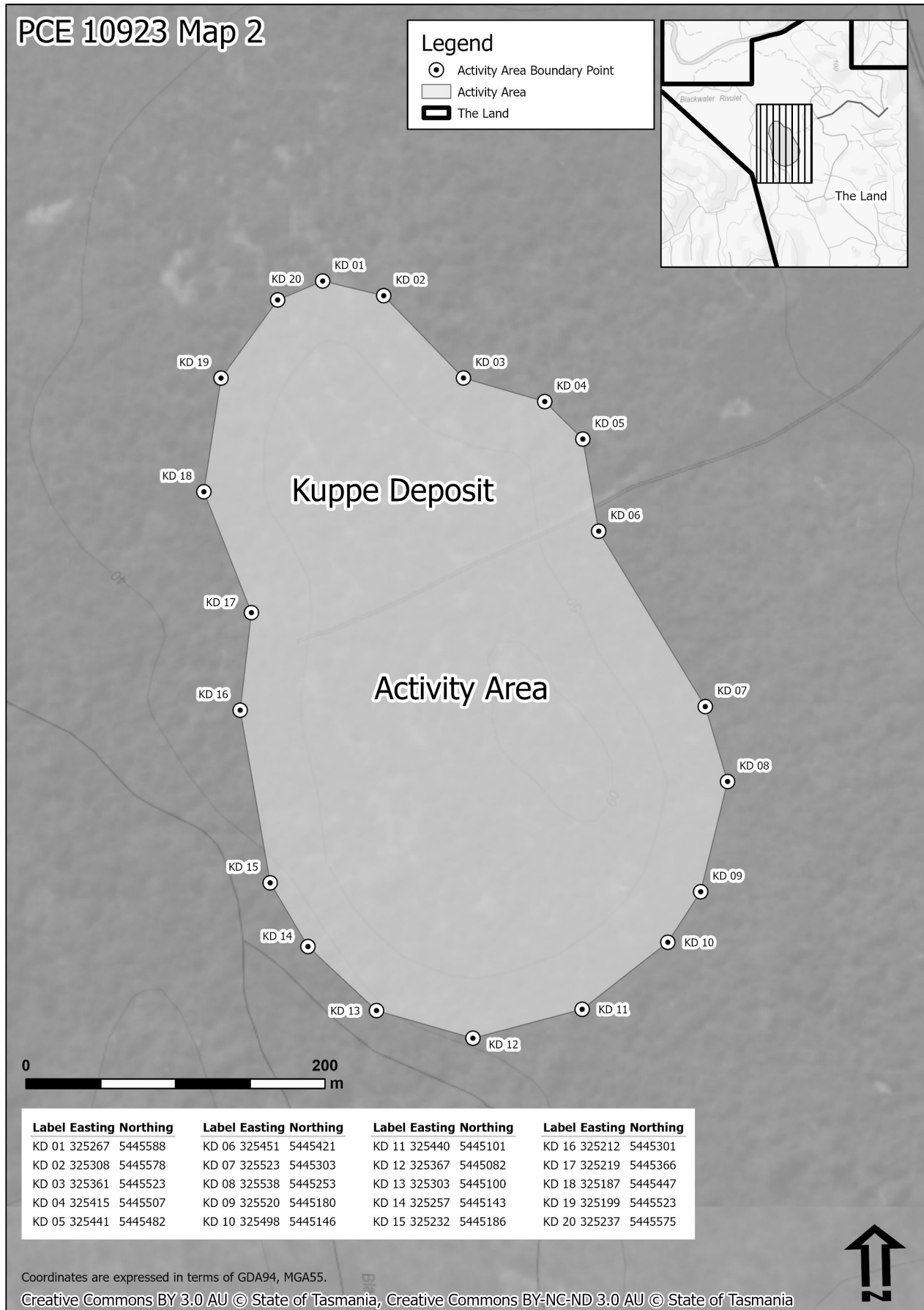
#### **OI2 Waste management hierarchy**

- 1 Wastes should be managed in accordance with the following hierarchy of waste management:
  - 1.1 waste should be minimised, that is, the generation of waste must be reduced as much as possible, having regard to best practice environmental management;
  - 1.2 waste should be re-used or recycled to the maximum extent that is practicable; and
  - 1.3 waste that cannot be re-used or recycled must be disposed of at a waste depot site or treatment facility that has been approved in writing by the relevant planning authority or the Director to receive such waste, or otherwise in a manner approved in writing by the Director.

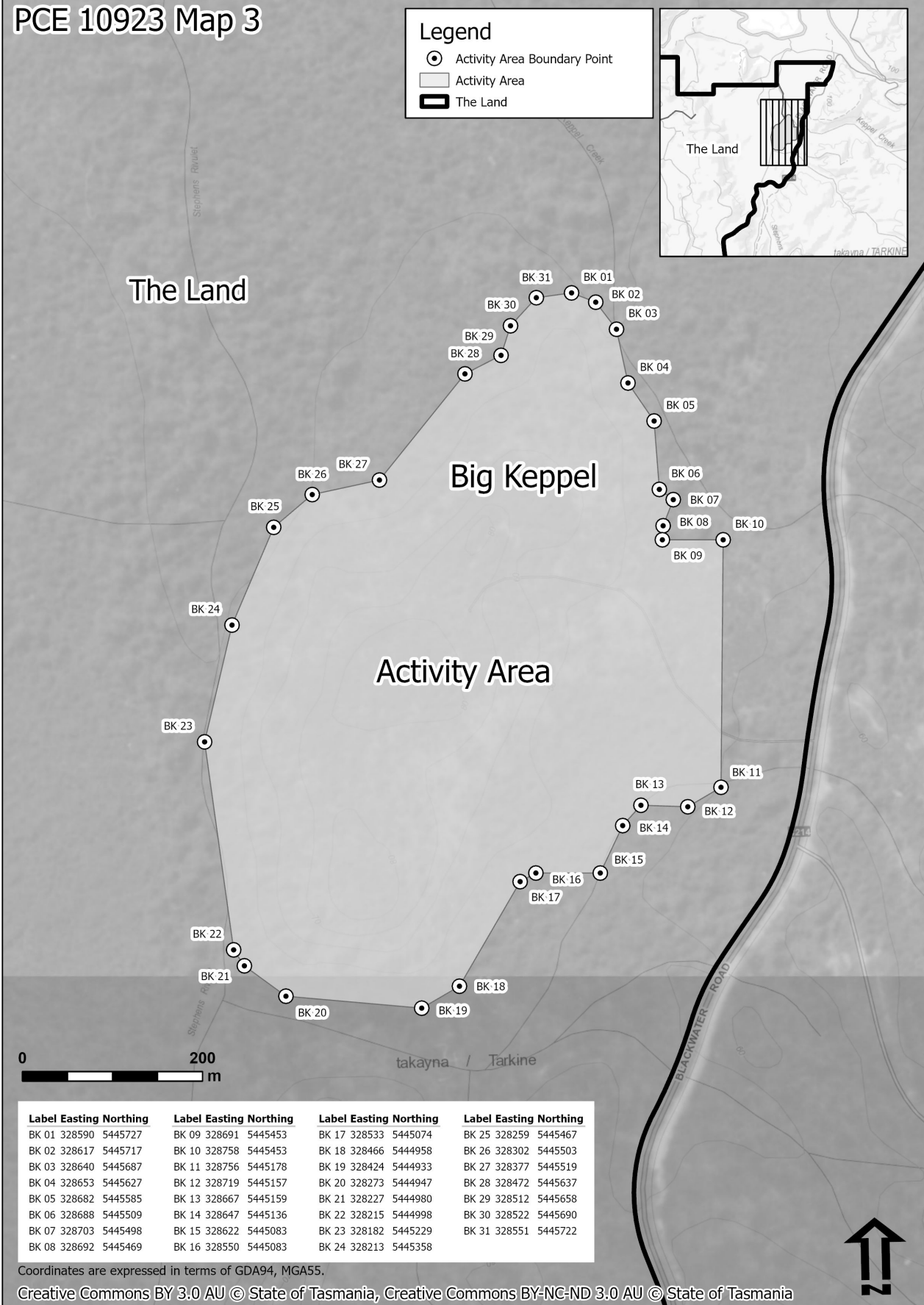
# Attachment 1: PCE 10923 - South Blackwater Silica Mine - The Land



# Attachment 2: PCE 10923 - South Blackwater Silica Mine - Activity Areas - Kuppe Deposit



# Attachment 3: PCE 10923 - South Blackwater Silica Mine - Activity Areas - Big Keppel





## Attachment 4: Table of Monitoring Requirements

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Item	Sampling Locations	Parameter	Unit of measure	Sampling frequency	Sampling technique	Reporting requirements
Water quality	See Attachment I	pH	pH units	Quarterly	Field test	Results to be included in the Annual Environmental Review.
		Temp	°C			
		Electrical Current	µS/cm			
		Turbidity (NTU)	NTU			



ENVIRONMENT PROTECTION AUTHORITY