



BEHARRA SILICA SAND PROJECT

PROPOSAL CONTENT DOCUMENT

MARCH 2023

Document Details

Proposal Title:	Beharra Silica Sand Project
Proponent Name:	Perpetual Resources Ltd (ASX: PEC)
Document Type:	Proposal Content Document

Authority

I hereby certify that; this document has been prepared on behalf of Perpetual Resources and accurately reflects the intention of the Beharra Silica Sand Project.

Signed:



Name: Robert Benussi, Managing Director, Perpetual Resources Limited

Date: 24 March 2023

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1. INTRODUCTION

1.1 BACKGROUND

Perpetual Resources Limited (PEC) is proposing to develop the Beharra Silica Sand Project (the Proposal), a silica sand operation approximately 300 km north of Perth, 96 km south of the port town of Geraldton and 25 km southeast of Dongara in the Shire of Irwin in Western Australia (Figure 1-1).

The Proposal is expected to generate a >99.5%+ SiO₂ purity silica sand product at a production rate of nominally 1.5 Million tonnes per annum (Mtpa).

1.2 PURPOSE

The purpose of this document is to provide the necessary information to identify the content of the Proposal for the purposes of Part IV of the *Environmental Protection Act 1986* (EP Act).

1.3 PROPONENT

The proponent of the Proposal is:

Perpetual Resources Limited (ASX: PEC)

Level 2, Suite 16, 420 Bagot Road, Subiaco WA 6008

ABN: 82 154 516 533



Figure 1-1 Proposal Location

2. PROPOSAL CONTENT DESCRIPTION

Table 2-1 provides the general content of the Proposal including a description of proposed activities. Detailed elements relating to the Proposal are described in Table 2-2.

A map of the Proposal and the proposed Development Envelope is presented in Figure 2-1.

Table 2-1 General Proposal Content Description

Proposal title	Beharra Silica Sand Project
Proponent name	Perpetual Resources Limited
Short description	Perpetual Resources Limited is proposing to develop the Beharra Silica Sand Project, a high-grade silica sand extraction and processing operation, located 300 km north of Perth and 96 km south of the port town of Geraldton in Western Australia.

Table 2-2 Proposal Content elements

Element	Location	Proposed extent
Physical elements		
1. Mining Void, 2. Infrastructure Area (Processing Plant, Administration Buildings, LV Carpark, HV Workshop, Minor Chemical Storages Laydown Yard) 3. Mine Access Road	Figure 2-1	Clearing up to 590 ha within a 784 ha Development Envelope on M 70/1406, with the disturbance footprint comprising of a 554 ha above water table mine area, a 30 ha processing and infrastructure area and a 6 ha access road. Utilisation of existing gazetted road network Brand Highway and Mt Adam's Road for transport of goods and services to site and Silica product from site.
Construction elements		
Groundwater Abstraction	Figure 2-1	Abstraction of no more than 0.1 GLpa from local bore in the infrastructure domain.
Operational elements		
Mining Method	Figure 2-1 Figure 2-2	2 Mtpa open cut quarry pit using a small fleet of conventional excavator and articulated dump trucks, one bulldozer.
Power Generation		Diesel with the potential to transition to other sources such as gas or solar ~2 MWpa
Processing		Wet beneficiation process plant, 2 Mtpa throughput for 1.5 Mtpa ore.
Groundwater Abstraction		Abstraction of no more than 0.6 GLpa from local bore/s within the infrastructure domain.
Staged Clearing		Up to 100 ha in first two years then incremental clearing at a rate of up to 20 ha per year.

Proposal elements with greenhouse gas emissions		
Proposal elements	Total predicted emissions over LOM (tCO ₂ -e)	Average annual emissions over LOM (tCO ₂ -e/yr)
Power Station Emissions	178,638	5,582
Mining Fleet Emissions	40,309	1,260
Haulage Emissions	289,978	9,062
Land Clearance Emissions	15,886	496
TOTAL	524,812	16,400
Rehabilitation		
<p>Once mine cell is completed, mine cells will be immediately rehabilitated. To increase the stability of the rehabilitated pit, the angles of the post mine pit wall will be reduced using backfilled waste and reject material.</p> <p>The remainder of the waste and reject material will be backfilled to the pit floor.</p> <p>Once the cell has been backfilled, track dozers will be used to recontour the surface. The surface will then be ripped to mitigate soil compaction, using a tyne to a depth of 0.6-1.0 m. Topsoil will be spread over the surface to a depth of 200 mm to 300 mm, and stockpiled vegetative material will then be evenly spread over the topsoil to protect the soil surface from erosion.</p>		
Commissioning		
Commissioning of the process plant subject to approvals under Part V of the EP Act 1986.		
Decommissioning		
Removal of related infrastructure within one year of cessation of operations (excluding periods of care and maintenance)		
Other elements which affect extent of effects on the environment		
Proposal time	Maximum Project Life	~33 years
	Construction phase	~6 months
	Operations phase	~32 years
	Decommissioning phase	~6 months

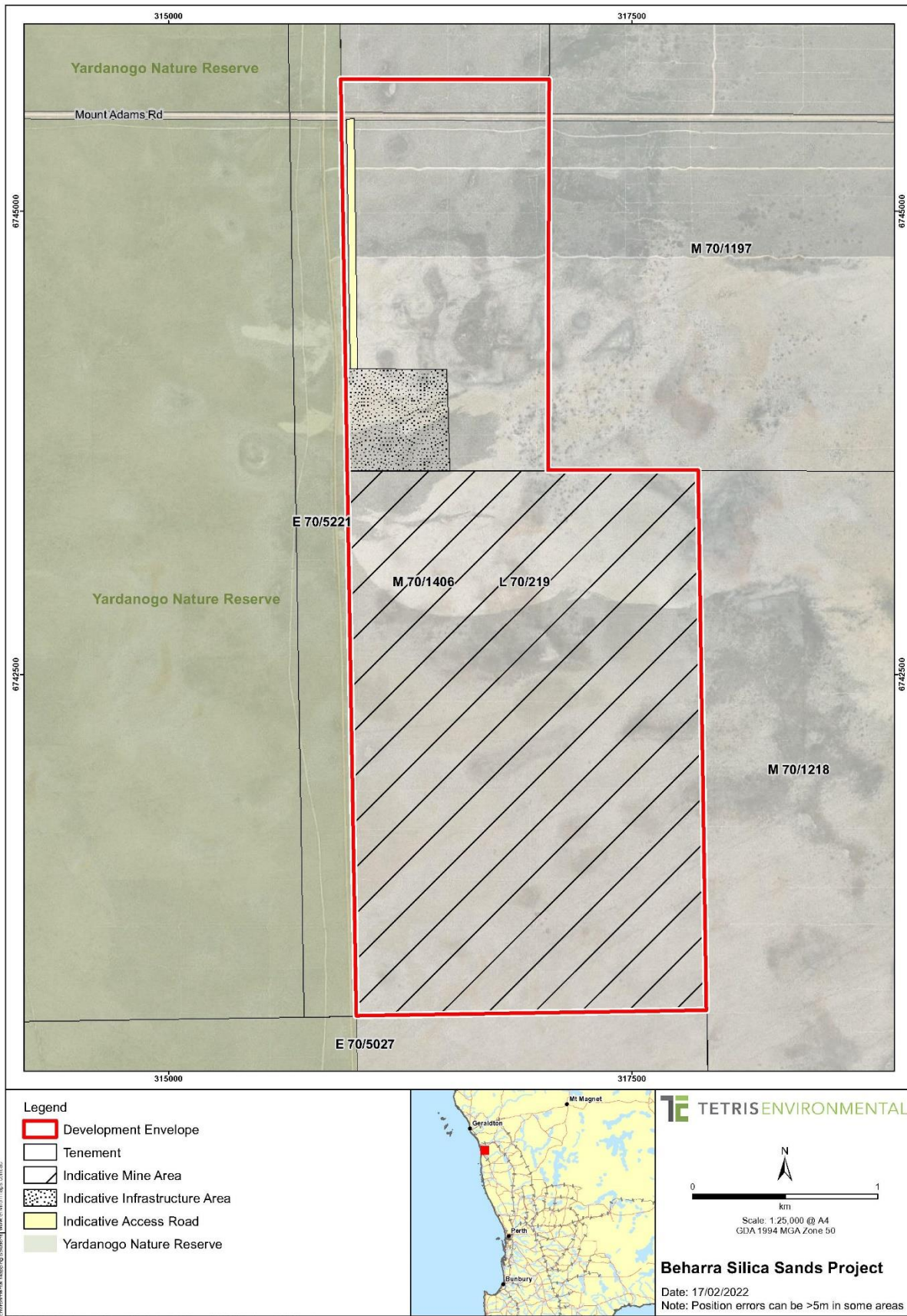


Figure 2-1 Proposal layout

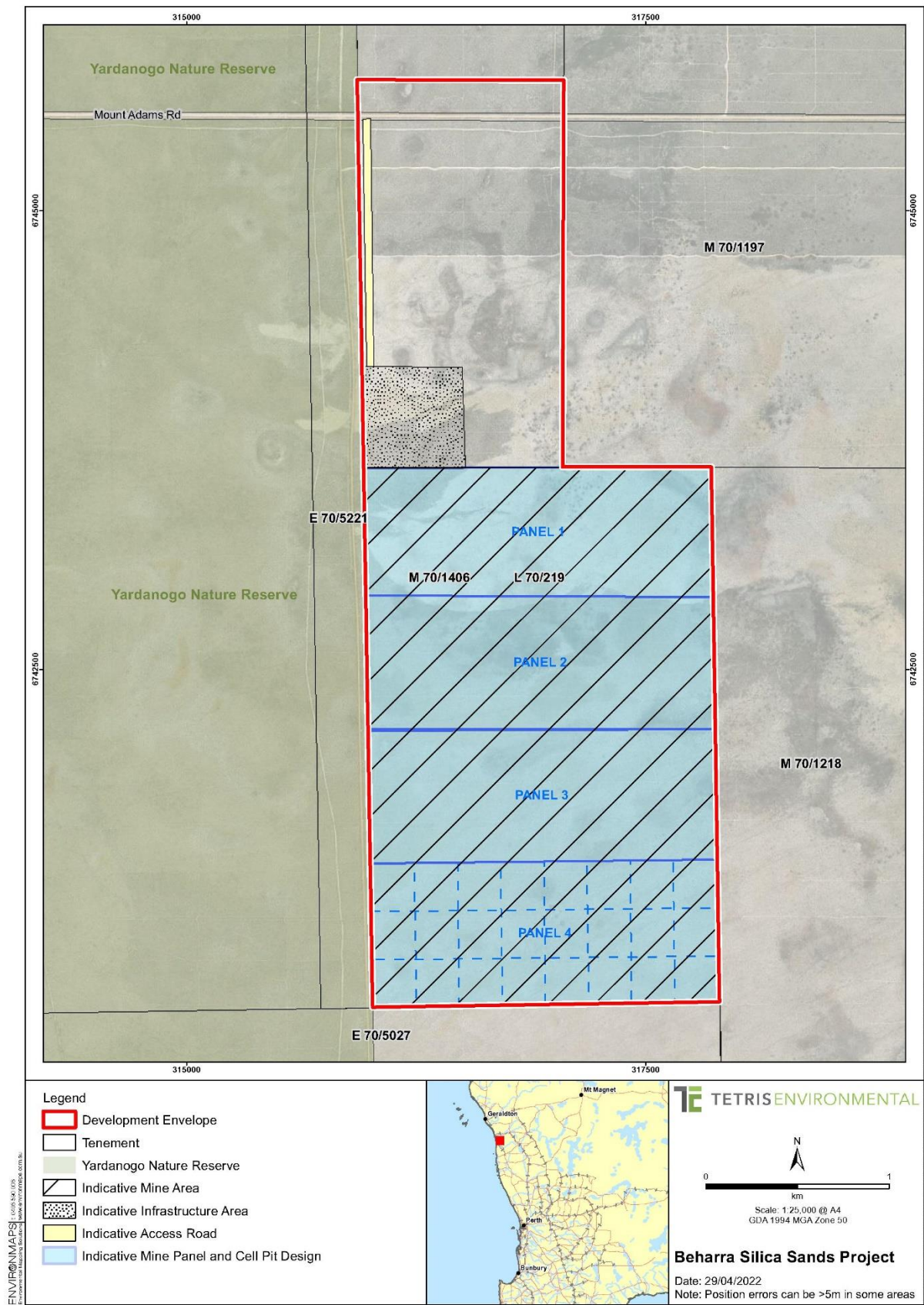


Figure 2-2 Mine panel layout