FACT SHEET

YALYALUP PROJECT

August 2021

About Doral Mineral Sands Pty Ltd (Doral)

Iwatani Australia is wholly owned by Iwatani Corporation of Japan and includes the Doral group of companies, being Doral Mineral Sands (DMS) and Doral Fused Materials (DFM).

DFM's Rockingham operation is an integrated zirconia producer with downstream processing operations, transforming zircon sand to high value zirconia products utilised in ceramics, colours and industrial refractories.

DMS produces titanium minerals and zircon sand products at its mineral sands operations in Western Australia's South West and Peel region. Heavy mineral concentrate (HMC) produced from Doral's mines are transported via road to its Mineral Separation Plant (MSP) located in Picton for processing into final product.

Dorals current operations includes Keysbrook located 70km south of Perth and the rehabilitated Yoongarillup mine site, located 17km south east of Busselton.

Haddon's rehabilitated Yoongarillup property

YALYALUP MINERAL SANDS PROJECT

The Yalyalup project, located 11km southeast of Busselton, is a zircon/ilmenite/leucoxene rich mineral sands deposit. The project site, between Princefield and Yalyalup Road, covers approximately 450 hectares (ha) of predominantly cleared farmland.

The approved Yalyalup project will have a mine life of up to 5 years and will follow a similar mining method as the decommissioned Yoongarillup mine.

KEY FACTS

Operations: Q2 2022

Products: Ilmenite, Zircon and Leucoxene

Production: 100,000 tonnes per annum

Employees: 30 full-time plus contractors

HOW WILL DORAL MINE AND PROCESS MINERAL SANDS AT YALYALUP?

MINING

- The Yalyalup project is a combined wind blown and strand deposit with an orebody depth of up to 10 metres.
- The mine will operate 24 hours a day, 7 days a week. The mining operation will be daytime only. During the evening (7pm-7am) only feed preparation and the Wet Concentrator Plant (WCP) will operate.
- Mining will involve earthmoving equipment using a small fleet of conventional excavators, front-end loaders, articulated dump trucks, dozers and graders.
- The top soil will be removed and stored for rehabilitation. An excavator and front end loader (FEL) will remove the ore and stockpile it next to the Input Mining Unit which will feed the ore through to the Feed Preparation Plant (FPP).
- At the FPP, ore will be mixed with water and passed over vibrating screens to remove coarse non-mineralised waste. The remaining mineralised ore is then pumped as a slurry to the WCP.

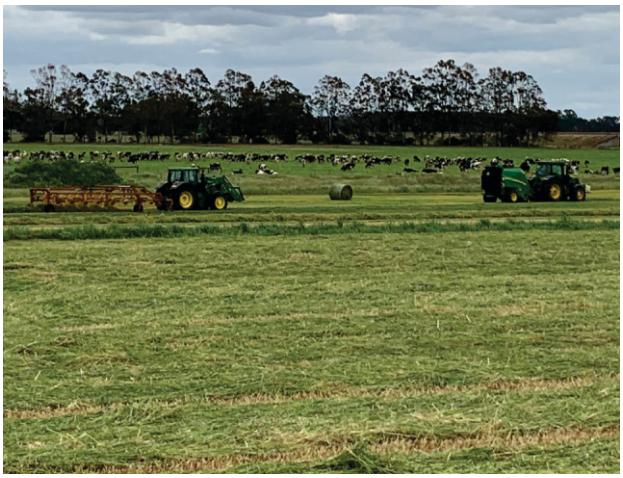
PROCESSING

- At the WCP, the ore will pass through multiple spirals using water and gravity to further separate heavier minerals from non-mineralised sand. This is a chemical-free process that creates a Heavy Mineral Concentrate (HMC).
- The HMC will be stockpiled on site and transported by road to Doral's Mineral Separation Plant (MSP), located in Picton. Here, the HMC passes through electrostatic and magnetic separators to create the final concentrate products of ilmenite, leucoxene and zircon, which is sold to local businesses or exported to Doral's international customers through Bunbury or Fremantle Ports.
- Surplus sand will be returned to the Yalyalup site and used to backfill mined areas for rehabilitation.

Back: Heavy Mineral Concentrate Front L-R: Ilmenite, Leucoxene, Zircon

REHABILITATION

- The mining area at Yalyalup is predominantly cleared agricultural land and covers approximately 450ha.
- Once mined, the void will be backfilled with soil, contoured and then covered with the stored topsoil. The area will be seeded to a combination of pasture and vegetation indicative of tree and shrub species local to the area.
- Mined areas will be progressively rehabilitated and returned to their pre-mining state within two growing seasons.



Yoongarillup rehabilitated land

COMMUNITY

- Doral's Community Relations Advisor manages the Stakeholder Engagement Program.
- The Company is committed to ensuring stakeholders are engaged on important project developments.
- A Community Partnership Program has been established to provide funding opportunities for local community groups and organisations.

ENVIRONMENT

- 4.7ha of native revegetation will be set aside using local provenance species to counterbalance the clearing of 3.5ha of mostly degraded vegetation.
- Production water for mine processing will be required during dry conditions and will be sourced from the Yarragadee aquifer.
- All of the water used on site is recycled.
- No chemicals are used in the mining and processing circuits.
- The site will follow a comprehensive Noise Management Plan for its daily operations taking into account types of machinery to be operated on the day and forecast weather conditions.
- Dust monitoring is conducted pre-mining and during mining to establish a baseline and collate data to ensure compliance with licence conditions.
- Dorals haulage route will be entry and exit near Princefield Road on to Ludlow-Hithergreen Road heading north via South West Highway to the Picton Mineral Separation Plant (MSP).

WHAT ARE HEAVY MINERAL SANDS USED FOR?

- Mineral sands are a key element in many products that are used in everyday life.
- Ilmenite (as titanium dioxide) is commonly used as a whitening agent in products such as paints, plastics, papers, inks, foods, medicine tablets, and most toothpastes. Titanium metal is used for industrial processes, mobile phones, sporting equipment, 3D printing, and more.
- Zirconium based products are used in ceramic tiles, sanitary wares, household crockery, and a range of consumer products.

Doral®

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