

YALYALUP PROJECT

Doral

January 2024

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.

Doral's current operations include Keysbrook located 70km south of Perth and Yalyalup mine site, located 11km east of Busselton.

YALYALUP MINERAL SANDS PROJECT

The Yalyalup project, located 11km east 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 Yalyalup site has been operating since 2022, and subject to final exploration results and technical studies, Doral will seek to extend its mining operation to the north of the current Yalyalup eastern boundary.

KEY FACTS

 <p>Operations: 10+ years subject to approvals</p>	 <p>Products: Ilmenite, Zircon and Leucoxene</p>
 <p>Production: 100,000 tonnes HMC per annum</p>	 <p>Employees: 22 full-time plus contractors</p>



View of Yalyalup operations from the wet concentrator plant (WCP)



Truck delivering ore to the feed preparation plant (FPP)

HOW WILL DORAL MINE AND PROCESS MINERAL SANDS AT YALYALUP?

MINING

- The Yalyalup project is a combined wind blown 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 the feed preparation plant (FPP) and the wet concentrator plant (WCP) will operate.
- Mining will involve earthmoving equipment using a fleet of conventional excavators, front-end loaders, articulated dump trucks, dozers and graders.
- Mineral sands mining is a mobile operation with the in-pit-mobile unit (IMU) regularly moved to ensure it remains within a short distance of the ore pit.
- The top soil will be removed and stored for rehabilitation and noise bunds. An excavator and front end loader will remove the ore and feed through to the IMU which will then feed the ore to the 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 located in Picton. Here, the HMC passes through electrostatic and magnetic separators to create the final concentrate products of ilmenite, leucoxene and zircon.
- Product is sold to local businesses or exported to Doral's international customers via Bunbury or Fremantle Ports.
- Surplus sand will be returned to the Yalyalup site and used to backfill mined areas for rehabilitation.



HMC stockpile ready to be transported to Picton

REHABILITATION

- The mining area at Yalyalup is predominantly cleared agricultural land.
- 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.



Doral's Environmental team onsite investigating the revegetation program

ENVIRONMENT

- Native revegetation will be set aside using local provenance species to counterbalance the clearing 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. This includes noise monitoring stations, real time roadside observations and forecast weather analysis.
- Dust monitoring is conducted during mining to ensure compliance with licence conditions.
- Doral's haulage route entry and exit is via Princefield Road to Ludlow-Hithergreen Road heading north via South West Highway to the Mineral Separation Plant in Picton.

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.

COMMUNITY



Country's Football Club Junior sponsorship 2023

- 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.

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Doral ABN 49 137 091 297

25 Harris Road, Picton WA 6229 Tel: 08 9725 5444 Email: admin@doral.com.au Website: www.doral.com.au