

MINERAL SANDS PROCESSING

SGS MINERALS SERVICES

SGS Lakefield Orestest Pty Ltd (SGS) was originally founded in 1993 as Orestest Pty Ltd. SGS has since developed into a major metallurgical services organisation located in a purpose-built laboratory in Perth, Western Australia.

The laboratory is dedicated to providing high quality metallurgical testing across the broad spectrum of the minerals industry including:

- Gold ores
- Nickel laterites
- Base metal
- Iron ore
- Mineral sands
- PGM ores
- Rare-earths and other exotics
- Diamond ores
- Environmental services

SGS provides a comprehensive range of test work capabilities including bacterial leaching, crushing, screening, grinding, ultra fine grinding, gravity, magnetic & electrostatic separation, solvent extraction, electrowinning, flotation, pressure leaching, pressure oxidation, pressure acid leach and cyanide speciation. Pre-feasibility studies, on-site diagnostic metallurgical services, environmental testing and analytical services are also included in our range of capabilities.



INTRODUCTION

Mineral sands processing consists mainly of wet gravity separation, wet and dry magnetic separation and dry HT and electrostatic separation, together with screening and classification. SGS has the facilities to test all these processes.

FACILITIES & EQUIPMENT AT SGS

The following is a summary of the facilities and equipment utilised at SGS for carrying out test work on mineral sands processing:

Sample Analysis & Characterization

- Heavy liquid separation (TBE, sink/float).
- Mineralogy (microscope identification / grain counting).
- Particle size analysis (wet & dry sieving).
- Slimes separation (cyclosizing).
- Elemental analysis (XRF / XRD).



Screening & Classifying

- Kason screens / Derrick screens / trommels / DSM / Nordberg screen.
- Hydrocyclones (Krebs / Warman / Moseley / Concord).
- Hydrosizers (Outokumpu, Linatex).

Gravity Separation

- Spirals (various types and makes including Roche MT / Carpcu / Multotec profiles).
- Closed circuit spiral test rig.
- Bulk sample spiral pilot plant for continuous multi-stage (rougher / cleaner / scavenger) operation.
- Kelsey centrifugal jig.
- Wet shaking tables (Wilfley ¼ size).

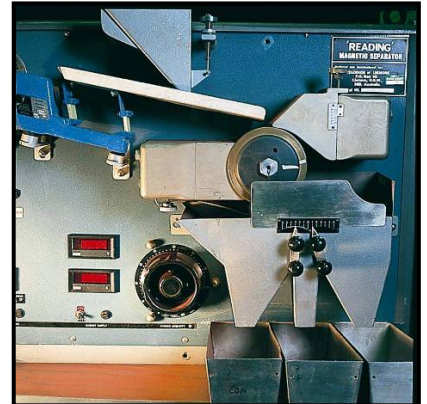


High Tension & Electrostatic Separators

- Readings 10 inch roll.
- Ore Kinetics ultra & corona stat.
- Roche MT single and multi-stage plates.

Magnetic Separators

- Readings Cross Belt & IRM.
- Eriez Rare Earth Roll & RE Drum.
- Magnapower RE Roll.
- Improsys RE Roll.
- Readings & Eriez WHIMS.



Flotation

- Bench & pilot plant flotation cells.
- Sulphide flotation (eg arsenic removal).
- Oxide flotation (eg chromite recovery).

MAJOR CLIENTS

- Iluka Resources
- Tiwest
- Cable Sands
- Doral Mineral Sands

For more information, please contact us:

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