

Iluka – Douglas – 550/600TPH WCP

Client: Iluka Resources
Location: Australia
Commencement: 2003

Capability Groups: Mineral Processing
Completion: 2006

Services Provided

- Metallurgical testing
- Flowsheet development
- Plant design
- Process equipment supply
- Process equipment commissioning
- Plant commissioning
- Plant performance testing

Highlights

- Wet concentrator modular design to accommodate transportation by road for rapid relocation
- Sizing of modules provided the smallest practical concentrator whilst maintaining operation and maintenance access
- Plant performance exceeded design expectations
- Innovative surge bin design to provide one-hour retention time and excellent density control
- Desliming circuit for removal of clay fraction up to 30% of feed
- Designed to accommodate wide HM grade ranges

Superior Technology

Mineral Technologies was awarded the contract to design a 550/600 t/h Modular Land-Based Wet Concentrator Plant and supply equipment for Iluka Resources for the Douglas Project in Hamilton, Victoria.

Extensive testwork was conducted at Mineral Technologies' mineral processing facility on ROM samples with varying heavy mineral grades (12% HM to 19% HM) over three years.

From this work a process flowsheet was developed and engineering design undertaken by Mineral Technologies for a modular Wet Concentrator Plant (WCP) consisting of 50 modules.

Design criteria had to accommodate Victorian road transport requirements. Each module was pre-assembled for transport with its appropriate process equipment which included: Gravity Spiral Separators; Linear Screen; WHIMS and LIMS; and Upcurrent Classifier.

Additional engineering design and specification was undertaken on:

- Desliming circuit to remove high proportion of slimes
- Surge bin to provide precise density control
- Thickeners and flowchart system
- Process water system

A design team of 20 engineers and drafters worked on the project over a period of 12-months.

Mineral Technologies supplied 264 spirals configured in six stages of spiral separators and 3 stages of magnetic separation.

