



Client: Quebec Iron Ore (QIO)
Location: Quebec, Canada
Commencement: 2016

Capability Groups: Mineral Processing
Completion: Practical Completion 2018

Services Provided

- Metallurgical testing
- Flowsheet development
- Engineering design and drafting
- Procurement
- Process equipment supply
- Site construction and commissioning
- Process equipment commissioning
- Operator training

Highlights

- Upgrade circuit achieves 66% Fe iron concentrate
- On time and on budget delivery of project milestones
- Installation of up-current classifiers (UCC) and magnetic scavenging circuit to enhance recovery
- First train load of high-grade 66% Fe iron concentrate shipped February 2018
- Successful collaboration with local trades in construction stage

Latest Technology

The new gravity circuit incorporates an upgraded recovery circuit; it replaced the existing traditional three stage spiral separator flowsheet. It utilises WW6 spirals with UCC equipment to dramatically reduce recirculating loads and minimize losses to the rougher spiral stage tailings.

Additional recovery gains have been accomplished with the inclusion of a magnetic separation circuit to recover fine iron from the gravity circuit tailings.

Smart Engineering

Bloom Lake is one of Canada's long-life iron ore mines and a major supplier of high quality iron ore to global markets. Mineral Technologies was awarded the CAD\$40 million circuit upgrade project in 2016. The operational focus was to optimise the separation circuit to recover high-grade 66% Fe iron concentrate.

Initially engaged at Bloom Lake in 2011 through delivery of over 1,400 spirals, Mineral Technologies utilised working knowledge of the mine and expertise in Iron Ore beneficiation to design the new circuit.

Samples were tested at Mineral Technologies' Australian metallurgical testing facility. This work informed the flowsheet development, which highlighted the benefits of incorporating magnetic separation and UCC equipment to enhance recovery.

To ensure maximum value for QIO, Mineral Technologies deployed core expertise on site and collaborated with local suppliers to ensure cost effective delivery of the construction stage. The first shipment was achieved on schedule in February 2018 with the first train load of high-grade 66% Fe iron.

Community Engagement

During the project Mineral Technologies was pleased to have the opportunity to work with QIO to donate a new Spiral Test Rig to the local Technical College Laboratory at Cégep de Sept-Îles. The test rig gives students the opportunity to gain practical experience as part of their mineral processing studies.

