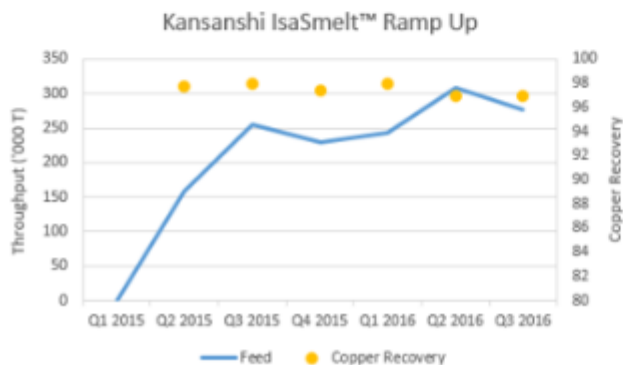




The Value of Knowhow

It is always hard to value knowhow. It is one of those qualities that is hard to quantify, an intangible that can't be touched. And it is especially hard to put a value on it, especially if you are already spending vast sums for a new operation or even a brownfield operation – exactly what can knowhow achieve?

One recent example where knowhow was tangible was the recent startup of the IsaSmelt™ copper smelter at First Quantum Minerals Kansanshi operations. The smelter was designed to treat 1.2MTPa of concentrate, with the first startup in early 2015. After 3 months from startup and commissioning it had achieved over 100% of its nameplate capacity. And within 6 months of startup on the 1st of July, it had declared commercial production! Copper recoveries have been consistently between 97 to 98% - a great effort for the Kansanshi operations. Glencore Technology provided Kansanshi with hands on training and mentoring at Mount Isa Mines Isa Smelt™ operation, as well as supporting the operation through the commissioning period.



Data source: FQM – Quarterly Reports

"No matter if it's the biggest of projects, or smallest of projects, you need a partner who has the expertise - the knowhow - who come from operations and understands the importance of working with project owners and making sure the knowledge is transferred – this makes a successful project. That is the way we have always worked at Glencore Technology, and continue to do so in the future"

Paul Telford, Chief Technical Officer, Glencore Technology.



Steerhorn Cathodes added to the IsaKidd™ Range

Glencore Technology's IsaKidd™ business has released the Steerhorn Cathode Plate to the market, consisting of a bar designed to reduce the distance for the current to travel from the hanger bar to the plate.

Nigel Aslin, Technology Manager, said the new cathode plate was designed to enable operators to achieve significant power savings – “Reductions of up to 1.7% total power use can be expected with this cathode, as we recently demonstrated in a South American EW tankhouse”.

This development can be retrofitted into existing plant, or can be designed into new projects, to provide power savings from the start of the operation. It is ideally suited for Glencore Technology's IsaKidd™ Cathode designs or HP Cathode Plate designs.



The Role of IsaMills™ in the Shutdown of KCGM Roasters

Greg Anderson - IsaMill™ Technology Manager at Glencore Technology, together with Neville McDonald - Senior Metallurgist at KCGM, recently presented a paper at the AusIMM Mill Operators Conference titled “IsaMills™ at Kalgoorlie Consolidated Gold Mines – from the M3000 to the M10000 and Replacement of the Roasters at the Gidji Processing Plant.

Traditionally, the refractory pyrite/gold concentrate from the Fimiston concentrator was roasted prior to cyanide leaching for gold recovery. In 2001, KCGM became the first external user of IsaMill™ technology by supplementing the capacity of the roasters by using an M3000 IsaMill™ to ultrafine grind (UFG) the concentrate in an M3000 IsaMill™ in parallel to the roasters. The IsaMill™ product was cyanide leached together with the roasted product.

The paper reported on the latest project at KCGM – the \$98M Emissions Reduction Project, which resulted in an additional M10000 IsaMill™ being commissioned in parallel to the existing M3000 IsaMill™ allowing the permanent decommissioning of the roasters. The use of the IsaMills™ in place of the roasters resulted in the elimination of 170,000t/a SO₂ emissions and other pollutants from entering the atmosphere.

The paper also describes the selection process for the IsaMill™, the learnings gained from a wear perspective from treating extremely hard pyrite/gold concentrate and the implementation of acoustic sensors used to monitor the mill.



Project at a Glance

- IsaMill™ used to replace two roasters – concentrate ground to 12µm (P80)
- New process incorporates UFG/Leaching route
- No SO₂ released to atmosphere (eliminated 170,000 tpa SO₂)
- Site operating and maintenance cost reduced by 11% - \$4.5M savings per annum

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