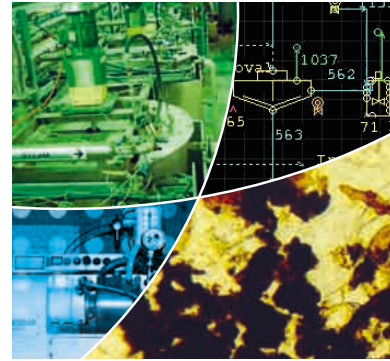




hrltesting

News at hrltesting

October 2008



Welcome to hrltesting issue 2

At **hrltesting** we've had a busy 12 months during which we have taken on a number of bench and pilot scale projects to evaluate a range of commodities and technologies. Notable among these was an extensive large scale Albion Process pilot plant campaign on base metal concentrates. It is pleasing to note that all work has been completed to our clients' satisfaction and with an unblemished safety record.

We are also pleased to say that **hrltesting** has been successful in employing and retaining the right professional and technical talent to deliver high quality service, a challenge for all players in the mining industry. While the past gives plenty of reason for optimism, our focus in the coming months remains to work closely with our clients and deliver true value through expert cost effective laboratory solutions.

Chris Casingena, General Manager

Analytical Services

At the beginning of the year **hrltesting** took delivery of a Varian 710 ICP spectrophotometer. Given a pressing need to have the equipment available for Albion Process pilot plant testwork, installation and commissioning was fast tracked and completed in time for start up of the large scale campaign mentioned above. With this acquisition **hrltesting** is now in a position to undertake in house analysis for all commodity metals and work is underway to extend these capabilities to precious metals. Over the last few months significant progress was achieved in ratifying the standard operating procedures to ISO9001 standards and it is anticipated that full accreditation will be in place by the end of the year.

Pilot Plant Flotation Run

hrltesting recently ran a pilot flotation program to produce a large quantity of pyrite concentrate from a tailings sample, for a client that is using this sample to conduct roasting testwork. The flowsheet tested included a high intensity conditioning stage using sand media. This aggressive conditioning stage (similar to that used at the Hellyer operation in the 90's) was required to improve the surface characteristics of the sulphide minerals in the tailings material, ahead of rougher flotation. The pilot flotation cells have a capacity of 60 litres each and have a throughput of up to 400 kg/hr of feed.

hrltesting introductions



Wilfred Leong is a chemistry graduate from the University of Queensland. He has extensive analytical and mineral processing experience having spent several years as chemist and technical officer at WMC – Roxby Downs, the Tasmanian Dept of Mines and at Orrcon tube and steel.



Sue Nacey has been with us for some time and we are pleased that she has accepted the new role of office manager at **hrltesting**. Sue is a commerce graduate from the University of Queensland with a solid industry background having held similar positions at Northern Business Accountants, Bruce Bird & Co Accountants and as a team member for the BDO Kendalls superannuation fund.



Albion Process – MRM Pilot Plant Update

In January this year a continuous Albion Process pilot plant was set up to process a zinc rich bulk concentrate sample. The plant comprised 4 parallel Acid Albion reactors operating at 95°C, 4 neutralisation reactors, ancillary thickeners, boilers and filtration equipment. The plant also included a Paragon PLC and a set of local controllers to allow 24/7 plant operation at reduced manning levels. In parallel to the plant operation this project included an extensive bench scale flotation test program to investigate sulphur flotation on leach residues. The project was successfully brought to a conclusion in April.

Coal Pyrolysis

A coal pyrolysis project which was commenced last year was progressed further over the last few months with added instrumentation being made available to increase the accuracy of the various stream measurements. The instrument upgrade included the installation of an Agilent micro GC which enabled rapid (<3mins) gas analysis and also an electronic coriolis type mass flow meter for accurate mass balance calculations. As in the past **hrltesting** worked closely with the client to develop this flowsheet and to ensure that all testwork was carried out at a high level of accuracy and precision.

Process Engineering Services

Work completed over the last 6 months includes the following;

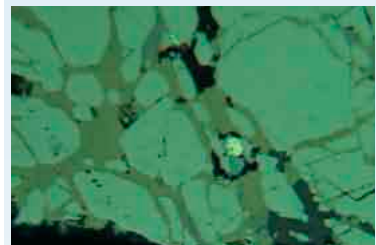
- ▶ Process modelling package including capital and operating costs for the Albion Process applied to Conquest Mining’s Silver Hill Deposit as part of the conceptual study completed by AARC consultants.
- ▶ Designed a sulphur dioxide gas reactor (using Metsim and Excel as process modelling tools) for use in reducing iron present in high ferric process liquors typical of that generated from the acid leaching of nickel laterites.
- ▶ Designed and commissioned a laboratory scale scrubber used for quantifying mercury emissions from various process off-gases.
- ▶ Assisted in the design of testwork campaigns targeting the recovery of nickel and cobalt from process leach liquors.
- ▶ Assisted in the commissioning of a coal pyrolysis unit fitted with gas cleaning and chemical analysis equipment.

Mineralogical Services

Our in house optical mineralogical services (provided by **hrltesting** mineralogist John Knights) provides clients with timely information on mineral makeup and liberation grain sizes, to guide testwork programs. Optical mineralogy provides clients with a cost effective and fast way to ensure testwork programs can be progressed efficiently and without delay, while the more detailed mineralogical information that automated scanning electron microscopy provides is acquired.

Mining 2008 Resources Convention

Come and join **hrltesting** at stand 76 at the Mining 2008 Resources Convention in Brisbane from 29 to 31 October 2008.



Classic example of gold (electrum Ag, Au) entrapment in a particle comprising chalcopyrite cemented pyrite micro-breccia. The larger gold granule is 5x6mm.



hrltesting

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