

## Sampling Mineral Processing Plants

True, or representative, sampling is the foundation of many measurement systems in the mineral processing discipline. Although the theories underlying its best practice are often mathematically complex, their actual use is not difficult. Whether the samples taken are for chemical analysis or for metallurgical testing, whatever measurements are made from the sample material, however carefully performed, are only as meaningful as the trueness of those samples. The short course of 2 days is focussed on the following themes:

- Minimum sample mass for various sampling sources of ore
- True sample extraction and minimum sample mass for a flotation plant
- Statistical Benchmark Surveying of a Flotation Plant
- Some guidelines on the interfacing of sample material into quantitative mineralogy

It also includes a practical session run by experienced JKTech consultants about practical considerations when sampling modern flotation plants.

Prospective candidates wishing to attend this course must bring their laptop computer and power cables with them. Excel will be the basis of performing the tutorials.

### Objective

The discipline of sampling in the mining and metallurgical processing industry is very wide, and cannot be covered in a short course. This short course on sampling is an introduction to the subject. The specific objective is to introduce the delegates to a part of Pierre Gy's sampling theory, and to the methods used in surveying an operating concentrator.

### Topics

1. Minimum sample mass for ore samples, including four tutorials
2. Sampling a flotation plant for metal accounting, including a tutorial
3. Statistical Benchmark Surveying, including a tutorial
4. A guide to interfacing the final sample material into modern quantitative mineralogical instrumentation

SMI Knowledge Transfer, a business unit of JKTech, is a unique professional development initiative, offering professional development and life-of-mine training courses and workshops to the global resources sector.

Quantitative Group (QG) are leading consultants in the field of resource evaluation with a core competency in professional training.



## Presenter

**Norman O. Lotter, Ph.D., P.Eng.**

**CIM Distinguished Lecturer 2010/11**

Norman O. Lotter is Manager of Business Development at Xstrata Process Support, Sudbury, Ontario, Canada. He has 38 years of experience in the mineral processing industry, including 10 years in operations management. He obtained his bachelor's and master's degrees at the Universities of Natal and Cape Town, South Africa, and his doctorate, at McGill University, Montreal, Canada. He is a fellow of the IMMM and the SAIMM. His interests are in high-confidence flotation testing and statistical benchmark surveying, both in support of the modern Process Mineralogy practice, for which he was awarded Distinguished Lecturer 2010/11 by the Canadian Institute of Mining (CIM) in May 2010. Both of these practices involve sampling, and he wishes to share his experiences with the mineral processing industry through a series of short courses. He has authored and co-authored a total of 30 papers on the various aspects of Process Mineralogy, and serves as a reviewer for the Minerals Engineering journal.



---

## Testimonials

"I participated in Norm Lotter's "Sampling in the Mineral Processing Discipline" short course, which was offered as part of the 2011 Canadian Mineral Processors Conference. It was a well taught hands on class and I was very happy that I signed up for it. The practical examples and tutorials were particularly useful."

*Jenifer Abols*

Project Development Manager

**Magma Metals Limited**

"This is one of the best short courses I have ever attended! Norm steps through the (somewhat) incomprehensible mathematics in an orderly fashion and delivers a working solution that attendees can immediately apply to their own problems."

*Fred Ford Ph.D.*

Principal Research Mineralogist

**Vale Technology Development Canada**

*JKTech's range of technologies is supported by the ongoing research activities of the Sustainable Minerals Institute at The University of Queensland.*



# Useful Information for Sampling Mineral Processing Plants Course

## Course Cost

Cape Town, South Africa | AUD \$2600

## Registration

SMI Knowledge Transfer is pleased to offer you the convenience of online registration and payment.

'**Register and Pay Now**' will enable you to give contact details and make payment via credit card online.

'**Register Only**' will enable you to give contact details online with a follow up call from a SMI KT staff member regarding alternative payment details.

Please go to [www.jktech.com.au](http://www.jktech.com.au) and follow the links to register.

## Inclusions

Delegates will receive:

- A comprehensive set of course notes
- Arrival tea/coffee, morning/afternoon tea and lunch

## Timings

Professional development events will generally commence at 8.30am and conclude at 5.00pm. Times are subject to slight variations on the day, however SMI Knowledge Transfer will undertake to keep time accordingly.

## Cancellation

SMI Knowledge Transfer reserves the right to cancel any course at its discretion. Whilst we endeavour to make every effort not to do this, there could be circumstances beyond our control (e.g. insufficient numbers), that may prevent us from going ahead. In light of this, if you need to fly, we suggest that you purchase a fully flexible airline ticket. Delegates cancellations 14-8 days before course commencement incur an administration fee of \$110. For cancellations 7 days or less before course commencements and non-attendance at the course, the full registration fee is payable. Substitutions accepted when advised.

### JKTech Services

- Consulting (Comminution, Flotation, Mineralogy, Mining & Geometallurgy)
- Process Mineralogy and In-House Instrument Analysis
- Specialist Software (JKSimMet, JKSimFloat, JKMultiBal, JKSimBlast)
- Specialist Equipment (Ore Breakage Characterisation, Flotation Characterisation)
- Metallurgical Laboratory Services
- Professional Development and Training

### Contact

#### Ron McLean

Manager SMI Knowledge Transfer

Telephone: +61 7 3365 5842

Facsimile: +61 7 3365 5900

Email: [r.mclean@jktech.com.au](mailto:r.mclean@jktech.com.au)

*JKTech's range of technologies is supported by the ongoing research activities of the Sustainable Minerals Institute at The University of Queensland.*

