SOLUTION FOCUSED TECHNOLOGY

QEMSCAN is a key technology which assists in maximising processing plant recoveries by determining the mineralogical controls causing the loss of valuable minerals to Tailings. QEMSCAN provides integrated automated mineralogy solutions for the quantitative analysis of minerals, rocks and man-made materials. The word QEMSCAN is an abbreviation standing for Quantitative Evaluation of Minerals by SCANning electron microscopy. As experts in mineralogical analysis and mineral laboratory services across Australia and internationally, Bureau Veritas - Mineral Laboratories are proud to offer QEMSCAN solutions to achieve measurable results and set new standards of excellence for our clients.

OUR SERVICES

Using QEMSCAN technology, Bureau Veritas - Mineral Laboratories is able to deliver repeatable, reliable and quantifiable analysis which provides for our clients the information necessary to determine what mineralogical controls are causing losses of valuable minerals to Tailings. Utilising integrated hardware and software, this technology can identify rock- and ore-forming minerals using backscattered electron and secondary electron signals, in combination with electron-induced secondary x-ray emission. This specialised technology can analysis many samples types including drill core, and even particulates on SEM tape or filter paper. A wide range of petrographic characteristics can be quantified, including: modal mineral proportions, grain size, phase associations, ore-type, litho-type, porosity, liberation, surface area, and grain density, to name a few.

WHY IS QEMSCAN TECHNOLOGY IMPORTANT?

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>Am I losing minerals to the Tailings Dam?</td>
<td>Are I losing my target mineral through fine inclusions in gangue minerals?</td>
</tr>
<tr>
<td>What do I need to know to minimise these losses?</td>
<td>Am I losing my target mineral through fine inclusions in gangue minerals?</td>
</tr>
<tr>
<td>What target minerals are being lost?</td>
<td>What is the grain size distribution of the lost mineral?</td>
</tr>
<tr>
<td>Am I losing a particular mineral species or is it a general loss across the board?</td>
<td>How much of the lost material is fine inclusions vs coarse liberated grains?</td>
</tr>
<tr>
<td>How are the minerals being lost to the Tailings? Is there a mineralogical or mechanical reason?</td>
<td>Does the grain size distribution of my target mineral change across the deposit?</td>
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<tr>
<td></td>
<td>Has my target mineral been liberated?</td>
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</tbody>
</table>

Improve And Protect Your Mineral Operations.
KEY BENEFITS

- Fast and accurate analysis allows for cost effective gathering of large datasets
- Large datasets are essential for studying losses of valuable minerals such as Ag, Au, and Pt in trace amounts
- Resolution down to 1um allows for accurate identification of very fine target minerals
- Determining mineralogy by elemental X-ray signatures allows for detection of some elements present in solid solution with other mineral phases
- Visual representation of key mineral associations aids in development of methods to minimise losses to Tailings

WHY CHOOSE BUREAU VERITAS?

**Experience** Our mineralogy team has over 20 years experience in the mining industry and more than 15 years experience in Automated Mineralogy technology. Our expertise in the usage of QEMSCAN technology allows us to tailor a solution to client’s specific needs.

**Recognition** Founded in 1828, Bureau Veritas is a world leader specialising in conformity assessment services related to Quality, Health, Safety & Environment (QHSE). Certified to ISO 9001 for all of its activities globally, Bureau Veritas is well known for its ability to adapt to changing client environments and situations and for its commitment to providing leading solutions through quality service.

**Knowledge & Expertise** Through expert local teams and technical knowledge, Bureau Veritas are able to deliver packaged and targeted solutions and information, to support our clients’ unique business requirements.

**Network** With a vast global network operating in more than 140 countries, Bureau Veritas provides tailored solutions to clients throughout the world across a diverse range of industries.

CONTACT

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FOR MORE INFORMATION

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