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## Geochemistry

# Mine Site Laboratory Services

- Expansion, optimisation and/or update of existing mine site laboratories;
- Mobile laboratory facilities setup for both sample preparation and analysis;
- Mobile sample preparation facilities upgrade to full service analytical laboratories;
- New & existing mine site laboratories operation, management and maintenance;
- Near mine site laboratory analysis solutions;
- Grade control analysis;
- Exploration analysis;
- Metallurgical process plant control analysis;
- Core cutting, core photo-archiving and core storage services;
- Fire assay;
- Wet chemistry including BLEG and LeachWELL™;
- Instrumentation including: AAS, ICP-AES, MP-AES, XRF, TGA, IR for Total S & C;
- Secure Data Management – LIMS, Webtrieve™, CoreViewer™;
- Data integration with 3D mine planning software;
- Laboratory audits;
- Inventory management (consumables, purchasing);
- Lab operational staff training;
- Consultation with mine production personnel to prioritise sample analyses;
- Moisture analysis; and
- Bulk Density, SG and particle size distributions.

### Auxiliary supporting services include:

- Metallurgical test-work for process optimisation;
- Advanced mineralogy technologies;
- Commercial settlement analysis;
- Inspection of concentrate, cathode or doré bullion;
- Environmental analysis for water, soil, tailings;
- Oil condition monitoring for the mining fleet.

ALS offers a full range of testing capabilities with design, installation and operation of dedicated site laboratories that cater to the specific needs of each project.

Partnering with ALS on a mine site laboratory project provides peace of mind that design, commissioning and daily laboratory production will be completed to the high standards characteristic of all ALS operations – irrespective of remoteness.



**Successful ALS mine laboratories operate in some of the most remote locations around the world, from the tropics to the arctic. This real-world experience along with ALS's decades of analytical experience ensures that each mine site laboratory has access to industry leading expertise to assist in strategic and operational decisions.**

All equipment installed at mine site laboratories is consistent with that used at ALS commercial analytical laboratories. The use of proven technologies and methods provide highly accurate and precise analysis, down to and below cut-off grades, ensuring the optimisation of mining, stockpiling, metallurgical and environmental operations. Experienced site personnel can rely upon technical and operational support from the extensive ALS global laboratory network. Access to ALS management expertise coupled with the training of site personnel in core ALS principles, procedures and quality standards offers clients the assurance and convenience of continuous analytical assistance.

### **Laboratory Information Management System (LIMS)**

With any dedicated mine laboratory ALS will provide access to its LIM System known as GEMS (Global Enterprise Management System) that is utilised at all its commercial locations. This access is provided at no extra cost. The GEMS system allows ALS management to oversee operations from off-site in order to track performance and quality at site-based labs to ensure production is efficient and quality is maintained. ALS is the only laboratory group in the world that can provide this level of integration between site laboratories and their global management system.

Clients can access data directly through ALS's data portal, Webtrieve™ allowing real-time tracking and monitoring of results. ALS offers automation of most Webtrieve™ functions such as the automatic downloading of analytical results to a client application. This process is facilitated by company specific Application Program Interfaces (API) and can reduce the time until data is accessible to site personnel, as data is sent automatically without the need for users to log into Webtrieve™. Please contact your local client services group to

determine if your mill or mine operations can be streamlined with a company or project specific API.

Via the ALS Geochemistry App and Process Control Alerts™ function, assays from fixed sampling points can be automatically monitored. All Webtrieve™ users can set up notification alerts when a parameter is outside of defined limits. These automatic warnings can be sent as emails, SMS and/or push notifications. Process Control Alert™ can be used for numerous situations where a sample is routinely collected and analysed such as cyclone overflow, heads, tailings, concentrates, residues, CIL carbons, water discharge, water wells etc. The App can also be used to oversee the progress of work orders, review results and monitor over limit results using the Overlimit Alert™. The Overlimit Alert™ like the Process Control Alert™, provides notification when an analysis result is higher than a user defined value.

The consolidated offering of GEMS, CoreViewer™ and Webtrieve™ interfaces with multiple 3D orebody software packages, such as Maptek™ — Vulcan™ and Leapfrog Edge, which can provide real-time data integration to a geological model. This integration between lab data and 3D viewing shortens the time between data production and use, allowing real-time decision making. ALS as a company delivers unrivalled client solutions with highly integrated business systems.

### **Outsourcing models**

Flexible mine site laboratory services allow clients to work closely with ALS to facilitate laboratory design and select equipment and analytical methodologies suitable for their project. Mobile sample preparation and analytical facilities are also available allowing for expansion when project demand increases. ALS's extensive management experience assists with optimising staffing levels and operation logistics to suit individual mine site specifications.

By outsourcing laboratory design and management to ALS, companies can reduce capital requirements, plus allow industry specialists to take charge of commissioning, maintenance and operation, thereby ensuring the project is completed to international best standards.



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ALS provides a wide range of specialised testing services covering all stages of your project's life cycle.

Please visit [alsglobal.com](http://alsglobal.com) for more information on our services and specialties.