

RISK REDUCTION FOR THE MINERALS INDUSTRY

SGS Minerals Services offers an industry-encompassing range of value-added solutions which reduce risk, enhance value and maximize returns at each step of the value chain. Services range from the simplest quality and quantity inspection and testing for a vast array of commodities to advanced process control which optimizes the recovery of metals in processing plants through the implementation of expert systems. With such a unique coverage of the minerals value chain and our truly global presence, SGS Minerals Services is the leading supplier of innovative, technologically advanced services and can help you achieve your goals.

CAPABILITIES

KEY AREAS OF FOCUS

SGS provides reliable, independent and thorough testing in the following areas:

- non-ferrous metals and precious minerals
- steel and steel making raw materials
- energy minerals
- fertilizers and dry chemicals
- industrial minerals

TECHNICAL RISK REDUCTION

ON-SITE LABORATORIES

Increasingly strict reporting requirements reinforce the need for third-party testing and validation of results. SGS Minerals Services is well recognized in the laboratory testing sector, and on-site laboratories are a key part of our business. We operate on-site and near-site laboratories in some of the most remote locations in the world.

Allowing SGS to design, staff, operate and support the lab will ensure that you minimize the risk associated with laboratory operations. You will have a full scope of capabilities for the rapid generation of accurate and reliable data that you need to run and optimize your plant operations while meeting transparency requirements.

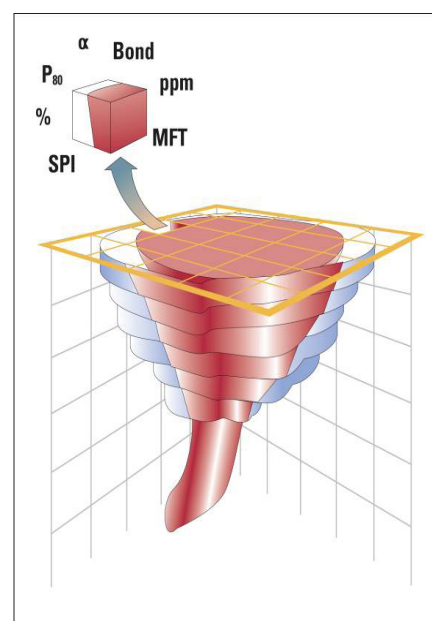


PILOT PLANTS

SGS Minerals Services' experienced metallurgical professionals have been developing and demonstrating bankable flowsheets and processes for environmentally sustainable metal and mineral extraction processing for over 65 years. We confirm and demonstrate these flowsheets through bench and pilot scale testing, generating proven flowsheets and products that are internationally recognized by the mining, engineering and financial communities to lower technical or project risk.

GEOMETALLURGY

Geometallurgy is a powerful, integrated approach to project development and planning because it links primary ore attributes to metallurgical processing and mine economics. Geometallurgy ensures potential processing challenges are recognized and addressed during the design stage. SGS Minerals Services is the recognized industry leader in geometallurgy and introduced geometallurgy as a useful tool to the mining industry. Our professionals have developed many standard geometallurgy tests including SPI and MFT.



PRODUCTION FORECASTING

Applying geometallurgical technology to production forecasting is a demanding task, due to the much shorter time frames over which production forecasting is carried out. Geometallurgical technology makes forecasting a challenging but achievable task. An accurate forecast results in better management of metal sales contracts. It also highlights periods when production will experience challenges, giving operations time to address these challenges thus minimizing technical risks to productivity and profitability.

FINANCIAL RISK REDUCTION

The financial risks of trade are great. We have a range of services designed to reduce these risks and facilitate trading. SGS also speeds the process with e.Certificates, digitalized versions of the paper certificate that is issued at the point of loading. Specifically we offer:

STOCK MONITORING AND CONTROL

- inventory management
- stock movement monitoring and damage control

COLLATERAL MANAGEMENT

- monitoring and control of a pledge
- warehousing, warehouse control
- goods receipt and dispatch

GUARANTEES

- full outturn guarantee for weight
- contained metal guarantee for quality
- rejection guarantees

DATA HOSTING

- secure, auditable, independent hosting of data
- global web-access to data by approved stakeholders for queries and reporting
- compilation and standardization of data from various vendors
- data integrity assured

OPERATIONAL EXPERTISE

CHEMICAL ANALYSIS (GEOCHEMICAL AND SETTLEMENT / UMPIRE)

Our globally standardized chemical laboratories are ideal for independent analytical services. They are operated 24/7/365. In addition to our commercial laboratories, we also design, build, staff and manage on-site laboratories. These provide mine-site based analytical services to fulfill your exploration and production analytical requirements. SGS Minerals Services is the largest global player in this area, with more than 50 on-site laboratories around the world.

METALLURGICAL SERVICES

SGS Minerals Services provides bankable metallurgical testing at the bench and pilot-scale, process modeling, advanced process control, consulting, outsourced services and in-plant services to the international mining community. The SGS Minerals Services metallurgical group is the world leader in geometallurgy, having completed over 60 projects worldwide.

DIAMOND SERVICES

SGS Minerals Services provides high quality bankable exploration to evaluation-stage service to the international diamond exploration community. We provide:

- exploration sample processing
- indicator mineral selection and grain morphology characterization
- microprobe analysis and indicator mineral classification
- macro and micro-diamond extraction by caustic fusion
- diamond selection, classification and evaluation
- petrographic analysis of host rock and xenolith suites
- bulk sample processing



ON-SITE AND IN-PLANT SERVICES

SGS' in-plant services range from short-term consulting contracts to extended, multi-year support contracts. We can help you initiate a new project, re-start an old mill or maximize the performance from an existing mill, by providing world-class technical support. Our powerful teams have considerable experience in plant start-ups, plant operations and plant optimization. We combine a rigorous technical approach to plant optimization with a practical operational/best operating approach to help you achieve the grade, recovery or combination of operational parameters you need to meet production requirements.

ADVANCED SYSTEMS

SGS Minerals Services offers advanced process control solutions through the implementation of expert systems. Expert system technology is used in process control, plant automation, modelling, simulation and scheduling applications. Our expert systems are always on duty, ensuring your output is optimised every shift, every day.

QUALITY AND QUANTITY CONTROL (TRADE AND SHIPPING RELATED SERVICES)

INSPECTION AND SAMPLING:

We have a full spectrum of trade support services focused on metal control and risk management. These include:

- quantity/quality, verification and guarantee services
- supervision, sampling and tallying
- pre-loading cargo survey
- custom sample preparation services
- party and umpire analysis
- sampling audits
- verification and calibration of weighing systems
- precious metal inventory management
- mechanical sampling systems
- performance testing
- bias testing
- mobile and fixed sampling augers
- sampling system consultancy
- value chain monitoring and management

CONTACT INFORMATION

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