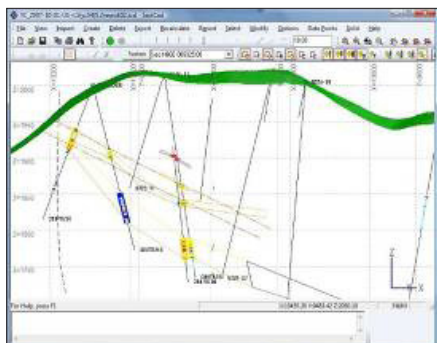


SGS GEOSTAT

With over 25 years of experience providing the mining industry with computer-assisted ore reserve estimation services using mainly geostatistical techniques, SGS Geostat is known globally as the expert in orebody modeling and reserve evaluation. We bring the disciplines of geology, statistics, and mining engineering together to provide you with accurate and timely reserve and modeling solutions. We also offer a broad range of additional services to the mining and exploration industries to reduce risk and enhance value. We have the expertise to assist you in the following areas:

- Exploration services
- Orebody modeling and resource estimation
- Independent qualification and technical reports
- Development and production stage services
- Geometallurgy
- Software consulting solutions
- Technical Report creation and audit
- Geotechnical engineering and hydrogeology
- Mine site reclamation and closure planning
- Training and education

With over 300 consulting projects completed worldwide, SGS Geostat is well equipped to minimize your operational and financial risks. You can



depend on SGS Geostat's global technical leadership to ensure effective solutions to your exploration and mining challenges.

EXPLORATION SERVICES

Properly managed exploration programs are essential in today's competitive and increasingly expensive exploration and mining industry. From the initial planning to the logging and testing of core samples, every exploration stage requires expertise and ethical excellence.

At the exploration stage of your project, SGS Geostat offers the complete management of exploration programs and will ensure that the entire chain of custody for your samples is managed efficiently so that you receive your results from accredited SGS laboratories in a timely fashion. Exploration services provided by SGS Geostat include:

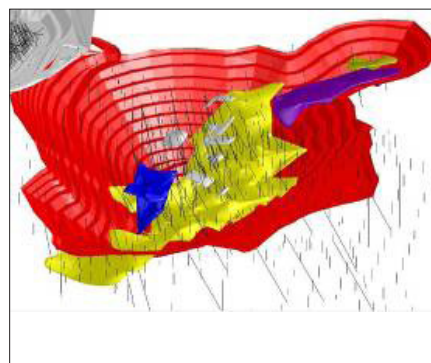
- Management of exploration programs
- Geological mapping from large to local scale
- Layout of reference grids
- Topographic surveys
- Supervision of drilling and core logging
- Trenching and sampling
- Bulk sampling

OREBODY MODELING AND RESOURCE ESTIMATION

SGS Geostat is a pioneer in computer-based orebody modeling and resource estimation, providing these services since 1981. We have provided modeling and resource estimation solutions to companies involved in the mining of:

- Gold and precious metals
- Base metals
- Iron ore
- Coal
- Uranium

- Diamonds
- Industrial minerals (bauxite, barite, limestone for cement, salt, sands with titanium bearing minerals, wollastonite, asbestos etc)



INDEPENDENT QUALIFICATION REPORTS

At SGS Geostat we understand the need for accuracy and integrity in the disclosure of scientific and technical information about your mineral project to the public. We have a number of professionals who can act as your "qualified person" and will ensure completeness and accuracy in all areas. We have successfully completed Independent Qualification Reports for companies worldwide, and can provide you with the following:

- NI 43-101 Qualified Persons
- JORC Qualified Persons
- Due diligence - audits
- Technical Reports and audits
- Property evaluation
- Prefeasibility studies
- Certification of reserves

DEVELOPMENT AND PRODUCTION SERVICES

Aside from presentation and reserve calculation purposes, an orebody model serves as the geological basis of all mine planning and production scheduling work. SGS Geostat offers computerized mine planning services in cooperation with mining engineering firms. Specific areas of expertise are pit optimization and production scheduling in open pits, open cuts or dredging operations. At SGS Geostat, our goal is to optimize your operations, and maximize your return. Leverage our mine planning capabilities and allow us to assist you in the following areas:

- Ore reserve estimation
- Mine optimization and design
- Mine planning
- Sampling optimization
- Blending optimization
- Reconciliation of production data

SOFTWARE CONSULTING SOLUTIONS

In typical projects, consulting and software solutions are required in tandem. A typical project involves the construction of a geological and resource model from data coming from various sources. Depending on the nature of the information, whether the data is hard copy or computerized, the principal steps of computer modeling are:

- Creation, standardization and validation of the database
- Section plotting and interactive geological modeling
- Geostatistical analysis
- Block modeling
- Resource estimation and classification
- Economical optimization
- Final mine design
- Mine planning and production scheduling
- Comprehensive training of staff and project follow-up

When you buy software from SGS Geostat, our engineers will typically install it, train your staff and even perform the

initial build-up of a computer model for your orebody. Our support continues through direct communication with the software developers or SGS Geostat. Software customization is also available, and a computerized maintenance service available after the first year allows you to keep your programs up-to-date.

GEOTECHNICAL ENGINEERING AND HYDROGEOLOGICAL SERVICES

SGS Geostat offers complete services for the mining industry as well as civic organizations. Your company can take advantage of our experience providing complete solutions or take advantage of our knowledge to solve specific problems. Our team of professionals includes engineers that can offer you the following comprehensive geotechnical & hydrogeological consulting services:

- Slope stability analysis in open pit mines and quarries
- Complete investigation of soils, rock and groundwater
- Erosion control
- Drainage analysis
- Pond design and stability
- Waste dump design
- Instrumentation, monitoring and training
- Fractures and structures inventory survey
- Anchorage and safety wire mesh installation
- Rock body monitoring and catastrophe prevention
- Cliff survey

A typical project begins with consultation of all available information followed by a preliminary investigation plan tailored to your site-specific needs. After agreement, the site investigation is executed. Results from the investigation are processed and modeled to provide the best image of the site characteristics. In addition, SGS Geostat also provides the supervision of development works and installation of observation wells. You can depend on SGS to provide cost effective solutions for your geotechnical challenges.



MINE SITE RECLAMATION AND CLOSURE PLANNING

As the production stage of your mine comes to an end, SGS Geostat is there to guide you through the process. With the immense responsibilities involved in closing a mine, you need a trusted partner. Our services at the project closure and reclamation stage include:

- Mine site reclamation and closure plan
- Production of mine site reclamation programs, reconversion and closure plan
- Landscape analysis and inventory
- Visual impact study
- Land development and landscape architecture
- Concept and design of waste dumps
- 3D animations (exploitation, progressive reclamation)
- Site works (management, field supervision, plantations and transplantations)

TRAINING AND EDUCATION

SGS Geostat is dedicated to the transfer of technology and knowledge. Over the years, hundreds of engineers, geologists and technicians have benefited from our expertise and experience. We offer on-site general training or short courses on specific topics. Courses available include:

- Geostatistics for the mineral industry
- Computer orebody modeling and resource estimation
- Sampling optimization for the mining industry
- Open pit optimization
- Sampling optimization for the environment
- Conditional simulation for the mining industry
- Quarry survey and digital terrain

model management

- Statistical processing of environmental sampling data
- Advanced geostatistics and modeling, sampling theory and practice for the cement industry

At SGS Geostat we have earned our leading position in the industry by utilizing a blend of people with practical mining and geological experience, world-renown theoretical knowledge, advanced mathematical techniques, efficient programming algorithms and the latest computer technology. Partner with SGS Geostat and let us reduce your financial risks and maximize your exploration and mining operations.

CONTACT INFORMATION

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www.sgs.com/mining

WHEN YOU NEED TO BE SURE

