

Mining Services

Common Sense Solutions



BGC Engineering Inc.

Vancouver | Kamloops | Calgary | Edmonton | Toronto | Halifax | Fredericton | Denver | Santiago

bgcengineering.com

Mining Services

BGC provides a comprehensive range of engineering and applied geoscience services for every stage of mine development, from pre-development to operation and closure. With a specialized understanding of the impacts of geology on engineered structures, we excel at providing innovative, common-sense solutions in diverse and challenging terrains. We have successfully completed projects on a wide variety of mineral, metal, oil sand, and coal mining applications worldwide, in conditions ranging from tropical to permafrost.

Site Characterization

Mining projects require a comprehensive understanding of ground conditions as they directly impact the health and safety requirements, design considerations and cost of mining structures. From detailed air photo interpretation and designing site investigation programs, to geohazard assessments and data management, BGC has the expertise to deliver site characterization services for all types of mining projects, particularly those in remote or otherwise challenging settings. By providing a comprehensive characterization of a site's subsurface and geohazard conditions, we help our clients to better understand their project risks.

Risk Assessment

Risk assessments enable mine developers and operators to recognize potential problem areas before they result in serious and costly impacts. Utilizing our geological and geotechnical expertise, BGC provides comprehensive risk assessment services applicable to a wide variety of mine facilities and infrastructure such as tailings dams, open pits, underground openings, waste dumps, and closure plans.

Waste and Water Management

Effective and efficient management of mine waste and water is essential to safe, sustainable mining operations. BGC provides extensive services related to all aspects of mine waste and water management, including:

- Design and operation of tailings dams, waste dumps and associated structures
- Instrumentation and monitoring plans and systems
- Design and operation of water diversion channels and structures
- Mine site tailings water balances and water management plans
- Specialized construction design, services, drawings and reports, and Engineer of Record services
- Seismic assessment and liquefaction triggering assessments
- Operations, Maintenance and Surveillance (OMS) Plans and Emergency Preparedness Plans (EPP) for dams and mine waste facilities

Environment & Permitting

BGC experts provide a variety of services related to environmental impact assessments, including water quality and contamination assessments, remediation designs, environmental audits, due diligence reviews and community/stakeholder consultation programs. We're also well versed in the permitting needs of mining projects and provide numerous support services.

Mine Design

BGC experts provide geotechnical and hydrogeological input to mine designs and mine engineering plans to help ensure that our clients' overall project objectives suit the ground conditions. We offer a broad spectrum of open pit and underground mine design services, including:

- Rockmass strength and structural geologic assessments
- Geotechnical design criteria for pit slope angles and stope sizes
- Numerical modeling and stress assessments
- Crown pillar stability
- Hydrogeological assessments and dewatering system design
- Pit slope and underground instrumentation and monitoring
- Artificial support design
- Rockfall assessments

Mine Closure

The mining industry is committed to sustainable and environmentally secure mine closure. BGC provides integrated services to develop site specific closure plans for proposed and existing mines. We incorporate the mine plan, as well as the geotechnical, geochemical and hydrotechnical aspects of the site, to effectively schedule the practical reclamation of mine components.

