

Rock Mechanics



Tetra Tech's engineering staff has extensive experience providing geologic, geotechnical engineering, and geo-environmental specialty services for mine infrastructure, open pit, and underground mining operations. Our experienced professional staff specializes in comprehensive rock mechanics services, including field and laboratory testing and the evaluation of rock engineering properties.

Our geotechnical engineering professionals are routinely integrated into a multidisciplinary project delivery team that handles projects from the early conceptual phase through detailed design, construction management, and final as-built documentation.

We offer our clients a professional engineering staff who have considerable experience solving difficult rock mechanics and geotechnical engineering problems for projects related to mine-site development and closure.

Tetra Tech provides engineering analysis and design for complex soil, rock, and groundwater conditions:

- Highwall stability and monitoring, including use of LiDAR and remote systems
- Rock highwall water seepage evaluation and containment design
- Design of grouting and ground freezing systems
- Evaluation and design of ground support systems
- Tunnel investigation, design, and assessment
- Design of mine adit plugging schemes
- Design and performance monitoring of excavation support systems
- Rock anchor and rock bolt system design
- Tie-back and bracing system design
- Soil nail walls
- Blasting design
- Blast monitoring



Tetra Tech is a leading provider of consulting, engineering, program management, construction management, and technical services. The Company supports government and commercial clients by providing innovative solutions to complex problems focused on water, environment, energy, infrastructure, and resource management. With 13,000 employees worldwide, Tetra Tech's capabilities span the entire project life cycle.



Our experienced professional staff specializes in all aspects of soil and rock mechanics, including field and laboratory testing and the evaluation of soil and rock engineering properties.

Corporate Headquarters

3475 East Foothill Boulevard
Pasadena, California 91107-6024 USA

Phone +1 (626) 351-4664
mining@tetratech.com

Tetra Tech Mining & Minerals

Australia Perth, Western Australia

Brazil Belo Horizonte, Minas Gerais State

Canada Vancouver, British Columbia
Toronto, Ontario

Chile Santiago, Santiago Province

UK Swindon, Wiltshire

US Golden, Colorado

Our approach to rock mechanics, and to geotechnical problems in general, includes comprehensive site assessment of subsurface conditions to characterize soil and rock compressibility, shear strength, and other engineering properties critical to an accurate understanding of soil and rock behavior under the expected stress conditions. We develop, evaluate, and rank engineered alternatives to minimize the owner's risks while providing cost-effective and practical solutions consistent with the project's requirements.

Tetra Tech's team of design engineers has extensive underground mine design and subsidence prediction and mitigation experience using empirical correlations and more advanced analytical methods as the project progresses.