
Geotechnical Engineer

Expertise

Geotechnical Engineering (Civil/Mining) — numerical modeling: tunneling/underground excavations; support and reinforcement; slope stability analysis, design and remediation; instrumentation; foundation engineering; HDD pipeline crossing design; field investigation.

Education

Ph.D. (Geotechnical Engineering), 2006
M.Eng. (Geotechnical Engineering), 2002
University of Alberta, Edmonton, Canada

B.Eng. (Civil Engineering), 1997
Dalhousie University (TUNS), Nova Scotia, Canada

Certificate of Engineering, 1993
Mount Allison University, New Brunswick, Canada

Professional Affiliations

Canadian Geotechnical Society (CGS), Minnesota Geotechnical Society.

Professional Registrations

The Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA), P.Eng. status.

Professional Experience

2005 - Present

*Itasca Consulting Group, Inc., Minneapolis, Minnesota
Geotechnical/Mining Engineer*

2002 - 2005

University of Alberta, Edmonton, Canada, Graduate Student/Research Assistant

1998 - 2002

Geo-Engineering (MST) Ltd., Calgary, Canada, Geotechnical Engineer

1996 - 1998

AMEC Earth & Environmental Ltd., Alberta, Canada, Geotechnical Engineer

Project Experience

Numerical Analysis: Finite element, finite difference, discrete element, limit equilibrium methods and bearing capacity analysis.

Site Characterization: Site assessments using a range of equipment in numerous and varied sites in soils and rock. Geological mapping, air photo interpretation; helicopter site reconnaissance; instrumentation installation, monitoring and interpretation.

Tunneling/Underground Operations: Ph.D. research on tunneling in Opalinus Clay, consisting of laboratory, field and numerical modeling components. Numerical analysis for underground mining operations, including support requirements, stability assessment and surface subsidence estimation. Use of numerical modeling to develop design charts to optimize mining dimensions. Paste-backfill stability and drainage numerical analysis. Three-dimensional analysis of cavern and tunnel intersection support for the Second Avenue Subway Project, New York City. Ongoing research on support methods for mine tunnels in highly stressed rock.

Slope Stability: Participated in a number of slope stability projects involving field investigations, instrumentation and monitoring, data interpretation, analysis, and design/implementation of remedial measures.

Foundation Engineering: Provided design and construction recommendations for numerous industrial/oilfield, commercial and residential projects. Involved in forensic foundation projects. Extensive involvement in the Nova Chemicals (Joffre) and Union Carbide (Prentice) plant expansions in Alberta, Canada.

Pipeline Construction: Performed reconnaissance and investigations for pipeline project routing and feasibility relating mainly to directionally drilled (HDD) stream crossings and slope stability issues.

Geo-Environmental: Conducted Phase I and II Environmental Site Assessments. Gained familiarity with handling, testing and analytical procedures as well as the Federal and Provincial regulatory environments.

Project Management: Involved in many aspects of project management including marketing, cost estimates, invoicing, personnel and resource utilization.