Amélie C. Ouellet – Project Engineer

Amélie is a geological engineer cumulating over nine years of consulting experience as well as teaching. Her project experience spans over 20 consulting projects at more than 15 mine sites. Her areas of specialisation are rock engineering in support of underground mine design, pit slope stability assessment, advanced numerical modeling and development of engineering geology models. She also participated in research projects in France on CO_2 geological storage. Amélie is a Registered Professional Engineer in Quebec.

Expertise

- Geomechanics
- Advanced numerical modeling
- Pit slope stability assessment
- Development of engineering geology models

Professional experience

- January 2019 – present: Project engineer at Andrieux & Associates Geomechanics Consulting, Quebec, Canada.
- 2012 – 2018: Project engineer at Golder Associates Ltd, Montreal, Quebec, Canada.
- 2010 – 2011: Junior rock mechanics engineer (part time) at Itasca Consulting Canada Inc., Montreal, Quebec, Canada.
- 2008 – 2010: Junior rock mechanics engineer at Schlumberger Carbon Services, Paris, France.
- Summer 2008: Intern in radar satellite imaging at Geo212, Paris, France.
- Summer 2007: Intern in seismic data acquisition at Schlumberger, Kuala Lumpur, Malaysia.
- Summer 2006: Intern in seismic data processing at Total, Pau, France.

Education

- M.A.Sc. (Civil engineering, Rock mechanics), 2013, École Polytechnique de Montréal, Montreal, Quebec, Canada.
- Engineering Diploma (Geosciences), 2008, École Nationale Supérieure des Mines de Paris, Paris, France.
- B.Eng. (Geological engineering), 2008, École Polytechnique de Montréal, Montreal, Quebec, Canada.

Registration

- Registered Professional Engineer in the Province of Quebec (OIQ), Canada

Professional affiliation memberships

- Canadian Institute of Mining, Metallurgy and Petroleum (CIM)
- International Society of Rock Mechanics (ISRM)

Project experience

Various projects for different mining companies operating on a national and international scale.

Conceptual, scoping, pre-feasibility and feasibility studies

- Geotechnical data review, consolidation and gap analysis
- Site characterization (mapping, oriented core logging, photogrammetry, strength testing programs)
- Rock mechanics in support of underground mine design (longhole and room-and-pillar mining methods)
- Pit slope stability assessment
- Development on engineering geology models for mining projects

Geomechanical stability analyses

- Empirical and analytical analyses
  - Stope dimensioning and design
  - Dilution estimates
  - Pillar stability assessment (for sill, crown, rib)
  - Ground support requirements
  - Paste strength requirements

  - Pit slope stability assessment by limit equilibrium
- Numerical modeling
  - Elastic and inelastic 3D numerical analyses for evaluation of mine extraction sequences and dimensioning of pillars, stopes, infrastructure, developments and other underground excavations.

Ground support systems

- Design of underground support systems for static and dynamic conditions
- Open pit wall support

Technical services and support

- Evaluation of site conditions for design reviews
- Photogrammetry data acquisition and processing

Softwares

- Geomechanics: *FLAC3D*, Map3D, ADAMTech, Rocscience suite
- Scientific: Maple
- Computer-Aided Design: AutoCAD, Rhinoceros
- Others: Surpac, Office (including Access et VBA)

Publications

Bewick, Rob, Amélie Ouellet, Steven Otto and David Gaudreau. (2017). ***Importance of understanding laboratory strength and modulus testing data for deep mining in hard brittle rocks*.** Deep Mining. Perth, Australia.

Sinha, Bikash, Amélie Ouellet and Thomas Bérard. (2010). ***Estimation of principal horizontal stress using radial profiles of shear slownesses utilizing sonic data from a CO2 storage site in saline aquifer in Germany*.** SPWLA (Society of Petrophysicists and Well Logs Analysts) 51st Annual Logging Symposium, June. Perth, Australia.

Amélie, Ouellet et al. (2010). ***Reservoir geomechanics for assessing containment in CO2 storage: A case study at Ketzin, Germany*.** 10th International Conference on Greenhouse Gas Control Technologies, May. Pittsburgh, United States.