

## EDUCATION & EXPERIENCE

- ▶ Completion of Grade 12 is required.
- ▶ A bachelor's degree in geological engineering or in a related discipline is required. Some employers may require a master's degree or doctorate in a related engineering discipline.
- ▶ Licensing by a provincial or territorial association of professional engineers is required to approve engineering drawings and reports and to practise as a Professional Engineer (P.Eng.).
- ▶ Supervisory and senior positions in this unit group require experience.

## TRAINING

Universities across Canada offer many different engineering programs. If you are interested in a career in mining, talk to a university program advisor about the best course for you to take. The University of British Columbia ([www.ubc.ca](http://www.ubc.ca)) offers an undergraduate degree program in geological engineering.

## CAREER ADVANCEMENT POTENTIAL

- ▶ There is considerable mobility between engineering specializations at less senior levels.
- ▶ Engineers often work in a multidisciplinary environment and acquire knowledge and skills through work experience that may allow them to practise in associated areas of science, engineering, sales, marketing or management.
- ▶ Geological engineers work closely with geologists and other scientists and engineers, and mobility is possible between some fields of specialization.

To learn more about a career as a geological engineer (including information about work duties and working conditions, salaries and employment prospects), you can access information in the National Occupation Classification (NOC) System at [www.workbc.ca](http://www.workbc.ca). The NOC code for this occupation is 2144.

# GEOLOGICAL ENGINEERS

Geological engineers conduct geological and geotechnical studies to assess sustainability of locations for civil engineering, mining and oil and gas projects. They also plan, design, develop and supervise programs of geological data acquisition and analysis and prepare geological engineering reports and recommendations. Geological engineers are employed in consulting engineering companies, electrical utilities, mining and petroleum companies and in government and research and educational institutions.



Image source: MiHR Council and iStock

## JOB DESCRIPTION

If you are a geological engineer, you perform some or all of the following duties:

- ▶ Plan, develop and co-ordinate programs of geotechnical, geological, geophysical or geohydrological data acquisition, analysis and mapping to assist in the development of civil engineering, mining, petroleum and waste management projects or for regional development.
- ▶ Analyze and prepare recommendations and reports on settlement of buildings, stability of slopes and fills, and probable effects or landslides and earthquakes to support construction and civil engineering projects.
- ▶ Conduct theoretical and applied study of groundwater flow and contamination and develop prescriptions for site selection, treatment and construction.
- ▶ Plan, develop, co-ordinate and conduct theoretical and experimental studies in mining exploration, mine evaluation and feasibility relative to the mining industry.
- ▶ Conduct surveys and studies of ore deposits, ore reserve calculations and mine design.
- ▶ Design, develop and implement computer applications for geophysics, geochemistry, geology, mapping and related fields.
- ▶ Supervise technologists, technicians and other engineers and scientists.

Seabridge Gold developed its job fact sheets using information from Human Resources and Skills Development Canada's 2006 National Occupational Classification, Work BC ([www.workbc.ca](http://www.workbc.ca)) and the Mining Industry Human Resource Council (<https://mihr.ca>). To learn more about Seabridge Gold and its projects, visit [www.seabridgegold.com](http://www.seabridgegold.com).