

Geologists & Geological Engineers

A guide for newcomers to British Columbia



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1. Working as a Geologist [NOC 2021: 21102/ NOC 2016: 2113] and Geological Engineer [NOC 2021: 21331/ NOC 2016: 2144]

Job Description

Geoscientists (*geologists, geochemists, or geophysicists*) study the history and structure of the earth's crust, the rocks and minerals that make it up.

Working as a **geologist, geochemist, or geophysicist** you perform the following duties:

- Conduct field studies, drilling and geological testing
- Prepare maps that show rock types and geological structures
- Locate new oil fields and mineral deposits, and plan ways to access them
- Advise builders and engineers on the suitability of sites for building or mining projects
- Plan and conduct seismic, electromagnetic and other remote sensing programs
- Advise in areas such as site selection, waste management and restoration of contaminated sites

Sources:

- WorkBC Career Profile for Geoscientists (including geologists)
<https://www.workbc.ca/Jobs-Careers/Explore-Careers.aspx>
- Career Cruising – Profile for 'Geologists'
<http://www.vpl.ca/digital-library/career-cruising>

Available from the VPL Digital Library | Explore our Digital Library page

Geological engineers carry out geological and geotechnical studies to assess suitability of locations for civil engineering, mining and oil and gas projects.

Working as a **geological engineer** you perform the following duties:

- Conduct programs of data acquisition, analysis, and mapping to assist with civil engineering, mining, petroleum and waste management projects
- Analyze and prepare recommendations and reports for construction or civil engineering projects
- Conduct studies of groundwater flow and contamination
- Carry out studies in mining exploration and mine evaluation
- Supervise technologists, technicians, and other engineers and scientists

Source:

WorkBC Career Profile for Geological Engineers

<https://www.workbc.ca/Jobs-Careers/Explore-Careers.aspx>

Industry Overview

Future employment opportunities for geologists and geological engineers are expected to be good, with more job openings than number of workers to fill them.

New jobs will likely come from oil, gas and mining exploration in BC and the environmental geosciences sector including land use planning, risk assessment and water resources management.

Much of the demand for geologists and geological engineers is expected to be filled by immigration.

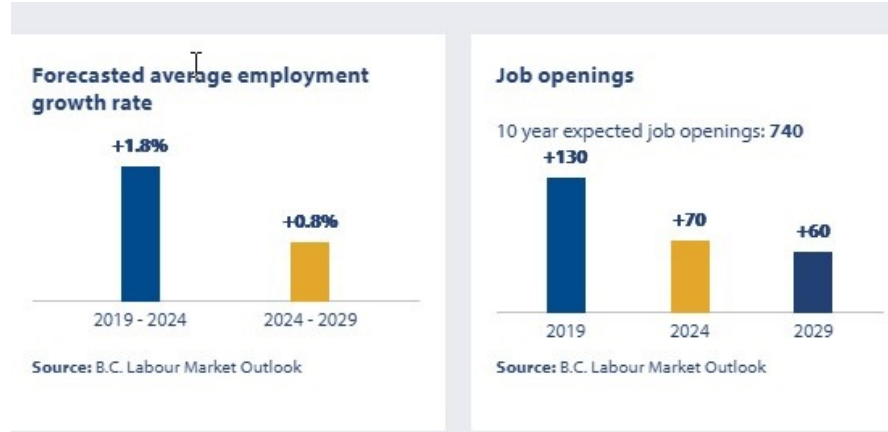
Source:

- WorkBC Career Profile for Geoscientists (including geologists)

<https://www.workbc.ca/Jobs-Careers/Explore-Careers.aspx>

Job Outlook in BC

Geoscientists (including Geologists)

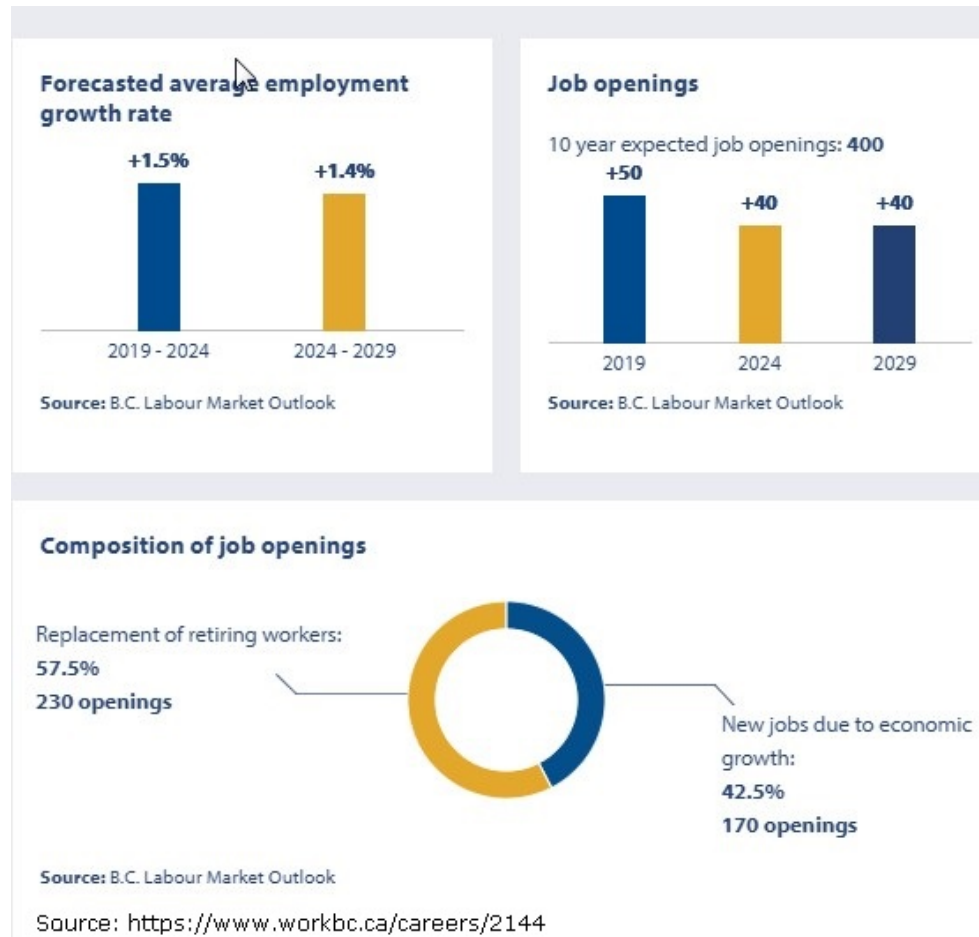


Composition of job openings



Source: <https://www.workbc.ca/careers/2113>

Geological Engineers



WorkBC provides job openings in BC regions from 2019-2029:

Geologists, Geochemists, and Geophysicists

Region	Expected # of Job Openings 2019-2029	Average Annual Employment Growth
Vancouver Island	170	0.7%
Lower Mainland / Southwest	470	1.7%
Thompson-Okanagan	60	1.9%
Kootenay	30	-0.1%

Source: <https://www.workbc.ca/Jobs-Careers/Explore-Careers.aspx>

Industry sources report that more **geoscientists** are expected to be based in the Lower Mainland, and less in other areas of B.C. Improved travel and instant communications make it easier for geoscientists to reside centrally and work remotely.

Geological Engineers, 2019-2029

Region	Expected # of Job Openings 2019-2029	Average Annual Employment Growth
Vancouver Island	30	0.8%
Lower Mainland / Southwest	310	1.7%
Thompson Okanagan	50	1.5%

Source: <https://www.workbc.ca/Jobs-Careers/Explore-Careers.aspx>

You can learn more about working as a Geologist and Geological Engineer from:

- WorkBC Career Profile for Geoscientists (including geologists)
<https://www.workbc.ca/Jobs-Careers/Explore-Careers.aspx>
- WorkBC Career Profile for Geological Engineers
<https://www.workbc.ca/Jobs-Careers/Explore-Careers.aspx>
- Career Cruising – Profile for ‘Geologists’
<http://www.vpl.ca/digital-library/career-cruising>

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Types of Employers

Geologists work for:

- petroleum and mining companies
- consulting geology, geophysics, and engineering firms
- government and educational institutions
- may be self-employed

Geological engineers work for:

- consulting engineering companies

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- electrical utilities, mining, and petroleum companies
- government
- research and educational institutions

Salary

In BC, the median annual salary for **Geologists** is \$109,285. The median annual salary for **Geological Engineers** is \$100,317.

Your salary varies depending on education, work experience, position, and employer. Management positions may make more. In addition to your salary, full-time employees often receive benefits such as pension plans, dental coverage, sick leave, and paid vacations.

Job Bank Canada website provides hourly wages:

Geologists / Geoscientists

Community/Area	Wages (\$/hour)		
	Low	Median	High
British Columbia	30.53	52.40	64.90

Geological Engineers

Community/Area	Wages (\$/hour)		
	Low	Median	High
British Columbia	30.30	48.10	99.61

Source: Job Bank, Wage Report

<https://www.jobbank.gc.ca/marketreport/wages-occupation/2551/BC>

<https://www.jobbank.gc.ca/marketreport/wages-occupation/22455/BC>

Working Hours

You generally work between 8 and 10 hours a day, 40 to 50 hours a week. However, during fieldwork, you may be required to work longer hours due to seasonal site access limitations, remote location or data gathering equipment requirements.

2. Skills, Education and Experience

Skills

- Applied knowledge of math, physics, chemistry and biology
- Detailed observation skills
- Good physical stamina
- Excellent problem solving and decision making abilities
- Project management experience
- Ability to travel to field locations
- Good interpersonal and communication skills

Education and Experience

- University degree in geology, environmental geoscience, geological engineering, geochemistry, geophysics, or a related discipline is required. Registration with Engineers & Geoscientists British Columbia (<https://www.eqbc.ca/>) (formerly APEGBC) is required.
- A master's degree or a PhD may be required for some positions

Qualifications

This occupation is regulated in British Columbia.

This means that if you are working as an engineer or as a geoscientist (geologist) in BC, you must either:

- Be registered as a Professional Engineer or Geoscientist in BC

OR

- Work under the direct supervision of someone who is registered as a Professional Engineer or Geoscientist in BC

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In order to become a registered member of Engineers & Geoscientists British Columbia you require:

- graduation from an accredited educational program - a 4-year full-time bachelors program in applied science, engineering, geoscience, science, or technology
- four years of supervised work experience in engineering or geoscience
- passing a professional practice examination - testing the applicant's knowledge of Canadian professional practice, law, and ethics.
<https://www.egbc.ca/Registration/Individual-Registrants/How-to-Apply/Examinations-Seminars/Professional-Practice-Examinations>
- completion of the law and ethics seminar – (Professional Engineering and Geoscience Practice in BC Online Seminar)
- satisfy the Canadian Environment Competencies, and demonstrate knowledge and experience of Canadian regulations, codes, standards, quality control, safety awareness, professional accountability and communication.

For more information:

- **Engineers & Geoscientists British Columbia - Become a Member**
<https://www.egbc.ca/Registration/Individual-Registrants/How-to-Apply/Professional-Membership-and-Licence/Engineer-First-Time-Applying-in-Canada>

Internationally trained professionals:

Engineers and Geoscientists British Columbia, in partnership with the Applied Science Technologists and Technicians of BC (ASTTBC) and the BC Ministry of Jobs, Tourism and Skills Training, has developed an online self-assessment tool to assist internationally trained professionals entering the engineering and technology fields in British Columbia. This tool will help you determine whether you should pursue a career in an applied science technologist/technician field with certification through ASTTBC, or as a professional engineer with registration through Engineers and Geoscientists BC. Based on your academic background and work experience, the tool will also provide guidance on what to expect during the qualification review process at Engineers and Geoscientists BC or ASTTBC.

For more information:

Engineers & Geoscientists British Columbia Online Resource for Internationally Trained Engineers and Geoscientists:

- Self-assessment tool
<https://engtechinbc.ca/>
<https://www.egbc.ca/Registration/Programs-Resources/Self-Assessment-Tool>
- Job Mentoring Programs:
<https://www.egbc.ca/Registration/Programs-Resources/Mentoring-Program>
- **Becoming a licensed engineer in Canada: a roadmap to engineering in Canada. Engineers Canada**
<https://engineerhere.ca/>
- **International agreements** between professional engineering associations
<https://engineerscanada.ca/become-an-engineer/agreements-on-international-mobility>

3. Finding Jobs

You'll find job advertisements in local newspapers, trade journals, and electronic sources, as well as through professional associations' publications.

Local Newspapers

You can look at the *Vancouver Sun* & *The Province* at Vancouver Public Library for free. Check the job postings daily, the careers section in the *Vancouver Sun* on Wednesdays and Saturdays, and in *The Province* on Sundays.

Online Job Postings

- **Engineering Central Canada**
<https://engcen.com/>
- **TechJobs.ca**
<https://www.techjobs.ca/en/>
-

- **Engineer Jobs.com**

<https://www.engineerjobs.com/jobs/canada/british-columbia/>

- **Neuvoo.ca**

<http://neuvoo.ca>

- **Indeed.com**

http://ca.indeed.com/advanced_search

Find jobs posted on a multitude of company career sites and job boards

Professional Associations' Career Resources

- **Association of Consulting Engineering Companies British Columbia (ACEC-BC)**

<http://www.acec-bc.ca/resources/>

- **Engineers & Geoscientists British Columbia Employment Centre**

<https://www.egbc.ca/Careers/Career-Listings>

- **Engineering Institute of Canada**

<http://www.engineeringcareers.ca/>

- **Engineering Central Canada**

<https://engcen.com/career-resources>

- **Canadian Institute of Mining, Metallurgy and Petroleum**

<https://www.cim.org/>

Identifying the Right Position

When you browse job advertisements, you'll find a range of different job titles that are relevant.

For **geologists**, look for these related job titles (from NOC):

- Geochemist /Geophysicist
- Hydrologist
- Mine Geologist / Mineralogist
- Petroleum Geologist / Petrologist
- Sedimentologist

For **geological engineers**, look for these related job titles (from NOC)

- Geophysical Engineer
- Hydrogeological Engineer

Creating a List of Potential Employers

You can use directories to produce lists of employers who work in the mining or engineering industries in Vancouver or the Lower Mainland. Contact them directly to find out if they're hiring.

- **Association of Consulting Engineering Companies British (ACEC-BC),**
Directory of Member Firms

https://www.acec.ca/business_search.html

- **Engineers & Geoscientists British Columbia**

<https://www.egbc.ca/Registrant-Directory>

- **Business in Vancouver. Book of Lists.**

Biggest Engineering Firms in BC

Available at the Central Library 338.9711 B97b and online at

<http://www.biv.com/lists>

- **Mines Handbook**

Available at the Central Library, 380 Mi6C

- **Reference Canada**

<http://www.vpl.ca/digital-library/reference-canada>

Click on "Start Search" beside Canadian Businesses, then select the "Advanced Search" button. Select both "Keyword/SIC/NAICS" under Business Type and "City" under Geography. In the top search box enter "geological" and click SEARCH. Select the appropriate headings. Lower down, select the Province, choose the cities, and click the "View Results" button.

Available from the VPL Digital Library | Explore our Digital Library page

NOTE: *You can access this database from a Library computer. If you are using a computer from outside the Library, you will need a Vancouver Public Library card to login to this database. After clicking on the database name, you will be asked to enter your library card number and PIN (usually last four digits of your telephone number).*

4. Applying for a Job

In Canada, employers usually expect to receive a resume (curriculum vitae) and a cover letter that identifies the position you are applying for and summarizes your relevant experience.

Use the library catalogue, <http://vpl.bibliocommons.com/> to find books on writing resumes and cover letters specific to your industry.

To learn about applying for jobs in Canada, use the following pathfinders which are available in print at the Central Library or online at <http://skilledimmigrants.vpl.ca/>.

- **Writing Resumes and Cover Letters**
Go to <http://skilledimmigrants.vpl.ca>
[Search Writing Resumes and Cover Letters]
- **Getting Canadian Work Experience**
Go to <http://skilledimmigrants.vpl.ca>
[Search Getting Canadian Work Experience]
- **Networking for Employment**
Go to <http://skilledimmigrants.vpl.ca>
[Search Networking for Employment]
- **Learn More About Working in BC and Canada**
Go to <http://skilledimmigrants.vpl.ca>
[Search Learn More About Working in BC and Canada]

5. Getting Help from Industry Sources

Industry Associations

Associations for professional and civil engineers in BC and Canada provide information and assistance. Registration and fees are required for membership.

- **Engineers & Geoscientists British Columbia**
<https://www.egbc.ca/>
- **Canadian Society of Petroleum Geologists**
<http://www.cspg.org>
- **Engineering Institute of Canada (EIC)**
<http://www.eic-ici.ca>
- **Geological Association of Canada**
<http://www.gac.ca>
- **Prospectors and Developers Association of Canada**
<http://www.pdac.ca>
- **Geology Exploration & Mining. Online Resources**
<http://geologydegree.org/mining-mineral-exploration/>
Links to numerous associations & organizations in BC and elsewhere
- **Association of Chinese Canadian Engineering Professionals and Technologists (ACCEPT) BC**
<https://www.acceptbc.ca/>
- **Society of Punjabi Engineers and Technologists of British Columbia**
<http://www.speatbc.org>

Industry Journals

Search the Vancouver Public Library catalogue for journals related to your profession.

Examples at the Central Library:

- **Canadian Consulting Engineer**
Available at the Central Library, 620.5 C212 and online at:
<http://www.canadianconsultingengineer.com/>
- **CIM Magazine** / Canadian Institute of Mining, Metallurgy and Petroleum
Available at the Central Library, 622.06 C21c and online at:
<http://magazine.cim.org>
- **Canadian Mining Journal**
Available at the Central Library, 622.05 C2125 and online at:
<http://www.canadianminingjournal.com/>
- **Innovation** / Association of Professional Engineers & Geoscientists of BC
Available at the Central Library, 620.5 B86 and online at:
<https://www.egbc.ca/Resources/News-and-Publications/Innovation-Magazine/Innovation-Past-Issues>
- **The Northern Miner**
Available at the Central Library, 338.205 N87 and online at:
<http://www.northernminer.com/>

Questions? Please ask the Information Staff in the Central Library, Vancouver Public Library or telephone 604-331-3603.

Please note that the information in this guide is also available online through the Skilled Immigrant InfoCentre website at <http://skilledimmigrants.vpl.ca/>.