

# Spotlight on Civil Engineering Technologists



What one occupation impacts just about every facet of operations in the oil and gas industry? Civil Engineering Technologists support the exploration, production and transportation of petroleum products. Civil engineering is more than just building plants, pipelines, roads, offshore rigs or foundations. It also includes environmental protection, geotechnical assessment, water resource management, transportation, material management and surveying.

Envision yourself as part of a team of engineering professionals designing and constructing a new production facility in the oil sands. Consider how you could apply your technological skills to plan and design pipeline routes and pumping stations. These are just some of the many contributions that you can make to the oil and gas industry as a Civil Engineering Technologist.



*Checking over a construction site.*



## What do Civil Engineering Technologists do?

**Civil Engineering Technologists** assist engineers in planning, designing, constructing, and maintaining a wide variety of oil and gas facilities. These facilities may include production plants, pumping and compressor stations, pipelines, storage facilities/tanks/reservoirs, oil and gas well sites, offshore drilling and production rigs, and oil sands surface mining sites. There are several key jobs that you can choose from including:

- **Civil Construction Engineering Technologists:** Oversee construction projects including work plans, estimates, contractor selection, inspection, resources and materials, and project reports.
- **Civil Engineering Technologists – Mining/Tailings:** Provide technological services for surface water hydrology and hydraulics, drainage, flood control, water supply, dam and industrial water/wastewater process design.
- **Materials/Geotechnical Technologists:** Design, test and apply the use of materials such as rock, soil, concrete, steel, timber, asphalt, metals and polymers on engineering construction projects.
- **Drafting/CADD/3D Modeling Technologists:** Create conceptual and detailed engineering designs, drawings and calculations for a variety of structures.
- **Survey Technologists:** Develop survey and mapping standards. They also inspect survey contractor work and review survey findings.



## How do I become a Civil Engineering Technologist?

At minimum, you will need a two or three year Civil Engineering Technologist diploma from a recognized technical institute. You can pursue various specialized disciplines such as environmental, geotechnical, structural, transportation, water resources, surveying or construction. Alternatively, other diploma programs offer a broad generalist study of the occupation. Some programs provide co-op experiences and applied projects, both of which provide hands-on experience.

Graduates may be granted certification by provincial associations of the Canadian Council of Technicians and Technologists (CCTT). Certification usually requires a minimum two years of experience after graduation. To check out the associations, visit the CCTT website at [www.cctt.ca](http://www.cctt.ca).

You will need a valid driver's license in good standing as travel to worksites may be required.



*Reviewing technical specifications.*





## What are the working conditions like?

Working conditions for technologists are varied and depend on the work they do. For example, Survey Technologists work outdoors and may be subjected to all variations in weather and seasons, in comparison to Drafting Technologists, who work mostly indoors in office settings. Technologists working in plants may need to work and live in remote locations. Other technologists based in office locations may spend some time outdoors when they visit field locations. While in the field, there may be exposure to potentially hazardous conditions, inclement weather, heavy lifting, travel and overnight stays. Work hours vary from a regular 8 hour day to 12 hour rotational shifts depending on the job and location of work. Appropriate time off is given depending on the rotation.



A surveyor at work.



## Do I fit the bill?

Do you think you have what it takes to become a Civil Engineering Technologist?

- I am very interested in mathematics, physics and science.
- I pay special attention to detail and accuracy and am not easily distracted.
- I am a good problem solver and think quickly on my feet.
- I am a great multi-tasker.
- I believe that applying proper procedures, standards, codes and policies is very important.
- I am quite versatile and can work on my own or with a team.
- I have well developed communication and computer literacy skills.
- I can follow safety rules and precautions, and understand their importance when dealing with potentially hazardous materials and equipment.
- I can work rotational shifts and long hours, and do not mind changes in routine.
- I am able to travel to and from work locations.
- I have the tolerance, stamina and flexibility to work outdoors in any weather conditions.
- I can work and live in isolated regions for extended periods of time.
- I believe that I have what it takes to be an excellent Civil Engineering Technologist!



## Quick tips and next steps!

- Visit career fairs and talk to employers who offer jobs and careers in this occupation. Check with employment centres, educational institutions, newspapers, petroleum-related magazines and the internet for information on career fairs.
- Start sharpening up your skills and knowledge in areas such as mathematics, chemistry, physics, computers and earth sciences.
- Participate in *National Technology Week* which is held annually during November and offers a host of activities along with interactive and fun resources to help students, teachers and parents explore technical careers.
- Read the on-line publication, '*Canadian Civil Engineer*' published by the Canadian Society for Civil Engineering.
- Check out websites of industry and professional associations such as the Canadian Council of Technicians and Technologists at [cctt.ca](http://cctt.ca); The Canadian Society of Civil Engineering at [www.csce.ca](http://www.csce.ca); or [whatiscivilengineering.csce.ca](http://whatiscivilengineering.csce.ca).

## Want more info?

For information on other industry occupations check out [www.careersinoilandgas.com](http://www.careersinoilandgas.com).