

APPENDIX G
JOBS ENGAGEMENT

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JOBS ENGAGEMENT

- Valley Sentinel News Story

Handout Sheets:

- Operations
- Administrative
- Camp Support
- Construction Management
- Construction Spread
- Engineers – Engineering Technologists
- Environmental Safety Compliance
- Reclamation
- Semi-skilled Workers
- Technical Inspector
- Trades
- Truck Drivers

<http://www.thevalleysentinel.com/trans-mountain-and-tru-partner-to-host-jobs-and-training-information-session/>

Trans Mountain and TRU Partner to Host Jobs and Training Information Session

The Trans Mountain Expansion Project and Thompson Rivers University are holding a community Jobs and Training Information Session in Valemount on November 18th and Blue River on November 19th.

From planning and permitting, to clearing, digging trenches and testing the new pipe, building a new pipeline requires a variety of skilled workers. The majority of the potential jobs will be created during pipeline construction and span a wide variety of responsibilities, skill levels and trade specializations.

The proposed Trans Mountain Expansion Project, at its peak construction, will require a workforce of 4,500. It is important to talk with, and build community readiness for potential employment opportunities related to the project. Community residents, including skilled and unskilled workers, interested in knowing more about potential employment opportunities with the Trans Mountain Expansion Project are welcome to attend. The information session is also useful for community residents interested in speaking to a trades and training representative from Thompson Rivers University.

Trans Mountain will not be hiring or accepting resumes at this information session.

Where and when:

Drop in to one of the following locations between 5:30 and 7:30PM. There will be a brief presentation at 6:30PM.

- Valemount – Tuesday, November 18, 2014 – Eagleview Room, Best Western Plus Valemount Inn and Suites, 1950 Hwy. 5 South
- Blue River – Wednesday, November 19, 2014 – Blue River Community Hall, 885 Main Street

What is it about:

- An overview of the Trans Mountain Expansion Project, as well as provincial workforce predictions.
- Potential employment opportunities with the Trans Mountain Expansion Project. Attendees will hear from an employee who has worked on the pipeline for 33 years.
- Thompson Rivers University Training and Education opportunities to increase job qualifications.

For more information on the community employment information session:

Thompson Rivers University

Wendy Blaskovic

Wblaskovic@tru.ca

Trans Mountain Expansion Project

info@transmountain.com

1-866-514-6700

OPERATIONS ROLES

All Skilled Positions

OPERATOR TECHNICIANS (NOC 9232)



Other Job Titles: Pipeline Operators, Field Operators, Terminal Operators

Essential Skills (Reading/Document Use/Numeracy): 3/3/3

Operator Technicians work along the pipeline and at pump stations and terminals. They perform oil quality and measurement tasks including tank gauging, sample collection and analysis, pipeline pigging and equipment inspections and maintenance. Operator Technicians operate pumps, valves and other facility equipment.

Operator Technician is a team-oriented position that requires multi-tasking and quick thinking. The role is physically demanding and requires bending, lifting and being outside for long periods of time. Operator Technicians are mechanically inclined and require a valid driver's license. They are able to adhere to required work schedules, focus attention on details and follow policies and procedures.

Pipeline, Pump Stations, Terminals

PIPELINE PROTECTION TECHNICIANS (NOC 2255)



Other Job Title: Geomatic Technicians

Essential Skills (Reading/Document Use/Numeracy): 3/3/3

Pipeline Protection Technicians are responsible for the implementation of damage prevention process, policies and procedures along the pipeline. This includes overseeing and inspecting activities occurring on the pipeline right-of-way to ensure compliance with pipeline protection zones and excavation conditions. Pipeline Protection Technicians are responsible for responding to potential issues reported by company employees, landowners, aerial and ground patrollers, etc.

Pipeline Protection Technicians require a valid driver's license. They need strong communication and problem-solving skills and are customer/landowner focused. They are able to adhere to required work schedules, focus attention on details and follow policies and procedures. Pipeline Protection Technicians typically work a 24-hour on-call rotation.

Pipeline, Pump Stations, Terminals

PIPELINE MAINTENANCE TECHNICIANS (NOC 7442)



Other Job Title: PLM Technicians

Essential Skills (Reading/Document Use/Numeracy): All 3/3/3

Pipeline Maintenance Technicians assist in safe, efficient and environmentally sound pipeline, right-of-way and facility maintenance activities. They are responsible for right-of-way clearing using safe excavation practices and for checking and adjusting the equipment at pump stations and other related sites. Other duties include pipeline repair and replacement, co-ordinating operations with the Control Centre and responding to problems as they occur along the pipeline system.

Pipeline Maintenance Technicians are mechanically inclined and require a valid driver's license. They enjoy working in a team environment and have strong problem-solving skills. The role is physically demanding and requires being outside for long periods of time. Experience operating heavy equipment is considered an asset.

Pipeline, Pump Stations, Terminals

ELECTRICAL TECHNICIANS (NOC 2241)



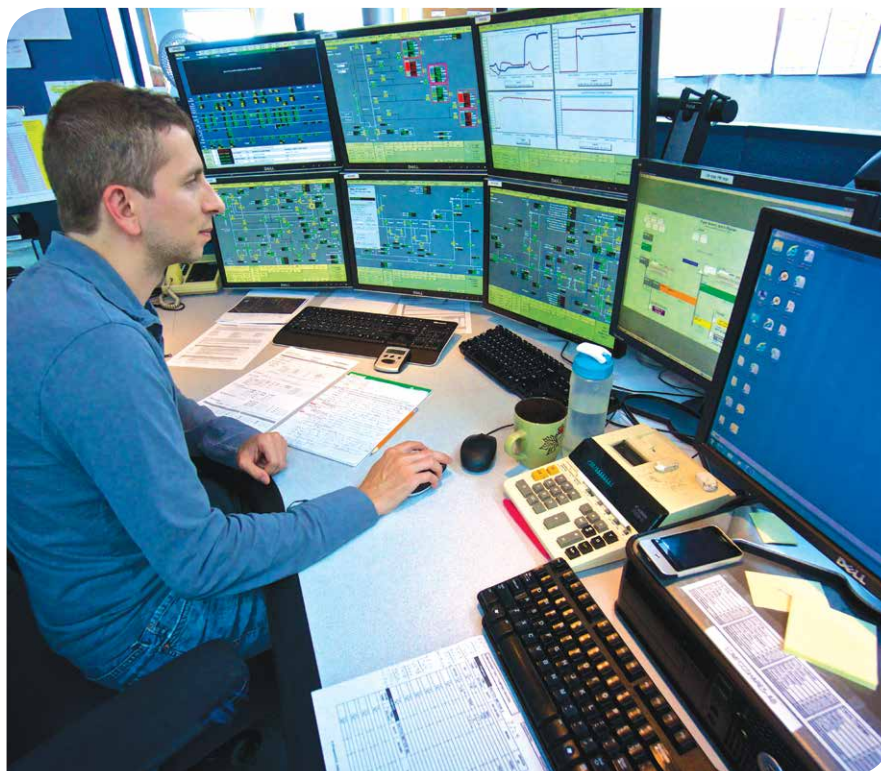
Other Job Title: Electricians

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Electrical Technicians are responsible for the repair and preventative maintenance of a wide variety of electrical equipment associated with pipeline, pump stations and terminals. They work closely with operations personnel and Mechanical and Instrumentation Technicians.

Electrical Technicians possess a journeyman Industrial Electrician trades certificate. Interprovincial Red Seal certification is preferred so Electrical Technicians can work between provinces. They are good troubleshooters and problem solvers.

Pipeline, Pump Stations, Terminals



MECHANICAL TECHNICIANS (NOC 7311)



Other Job Titles: Millwrights, Heavy-duty Mechanics, Mechanical Technologists

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Mechanical Technicians provide maintenance and technical support to pipeline, pump station and terminal operations. They are responsible for performing both repair and preventative maintenance on a wide variety of mechanical equipment such as valves, pumps and motors. Mechanical Technicians work closely with operations personnel and Electrical and Instrumentation Technicians. They typically use computerized maintenance management systems (CMMS) to track and manage maintenance activities.

Mechanical Technicians require journeyman certification in a millwright or heavy-duty mechanic trade. Interprovincial Red Seal certification is preferred so Mechanical Technicians can work between provinces. They are good troubleshooters and problem solvers and enjoy working in a team environment with operations and maintenance personnel.

Pipeline, Pump Stations, Terminals

INSTRUMENTATION TECHNICIANS (NOC 2243)



Other Job Titles: Instrumentation Technologists, Instrumentation & Controls Technicians

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Instrumentation Technicians provide maintenance and technical support to the pipeline, pump station and terminal operations. They install, calibrate, troubleshoot and maintain process instrumentation, communication networks and control equipment including flow meters, tank gauging systems, custody transfer metering, motor operated valves and control panels. They work closely with operations and Mechanical and Electrical Technicians to ensure safe and efficient operations. They typically use computerized maintenance management systems (CMMS) to track and manage maintenance activities.

Instrumentation Technicians require journeyman certification and Interprovincial Red Seal certification, as the role requires interprovincial mobility. They are good troubleshooters and problem solvers and enjoy working in a team environment with operations and maintenance personnel.

Pipeline, Pump Stations, Terminals

CONTROL CENTRE OPERATORS (NOC 9232)

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Control Centre Operators monitor and control the pipeline activity from a centralized control room. They monitor the rate of flow and product quality in the pipeline, the storage tank levels and the leak detection systems. They often are first to detect potential operational issues and work closely with operations and maintenance staff to avert problems.

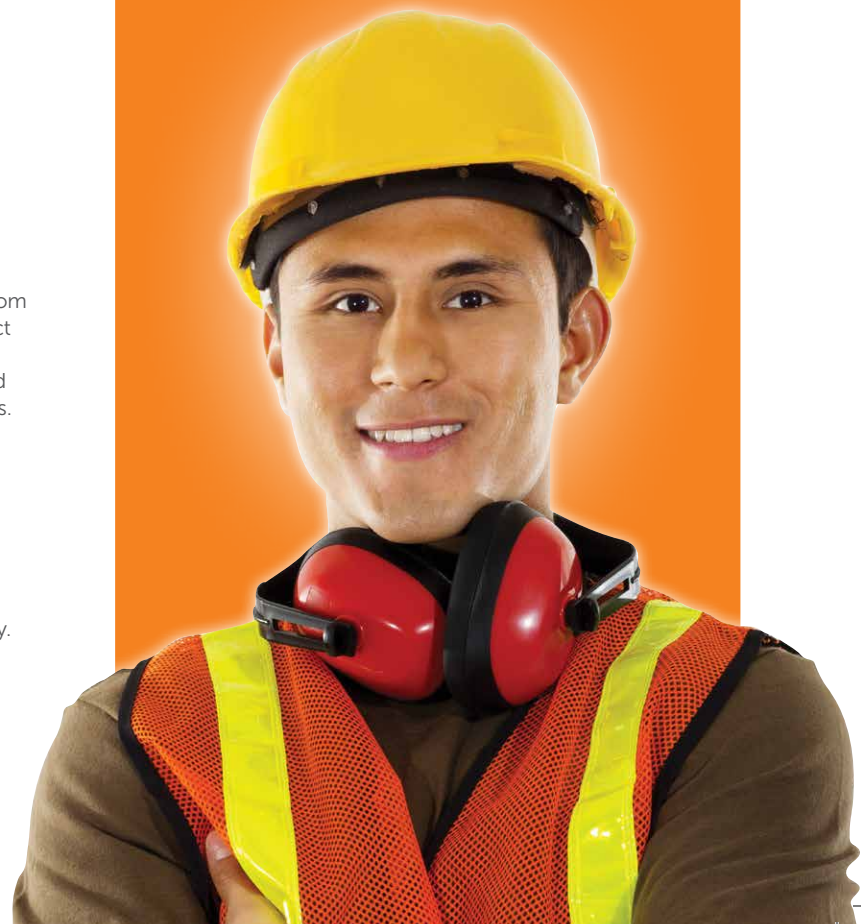
Control Centre Operators work in an office environment and do shift work. They are comfortable working with computers and have the ability to monitor a number of control panels at one time. Control Centre Operators work well under pressure, have excellent problem-solving skills and the ability to communicate precise information to others – most often over the phone. Control Centre Operators typically have related post-secondary training such as process operations or chemical or petroleum engineering technology.

Pipeline, Pump Stations, Terminals



Is an operations job right for you?

- ✓ I enjoy working in a highly technical work environment.
- ✓ I have post-secondary training or am interested in pursuing specialized training.
- ✓ I am willing to work shift/rotational work.
- ✓ I am safety conscious and care about the well-being of others on the job site.
- ✓ My family and I are willing to permanently relocate for the job.
- ✓ I am looking for an opportunity with a single company.
- ✓ I enjoy working with a team.



ADMINISTRATIVE & ACCOUNTING



PAYROLL CLERKS (NOC 1432)

Other Job Titles: Timekeepers, Paymasters

Essential Skills (Reading/Document Use/Numeracy): 4/3/4

Skilled Position, Contract Work

Payroll Clerks compile employee time, production and payroll information from time sheets and other records. They enter data into computers to process and issue cheques and statements of earnings. They may require knowledge of provincial labour standards such as overtime rules so they can calculate wages and payroll deductions.

Payroll Clerks assist Field Office Administrators to ensure all aspects of the payroll department are performed accurately and in accordance with standard payroll policies.

Payroll Clerks are able to communicate effectively, both in person and on paper, and follow written and verbal instructions. They carefully analyze data and are comfortable working with numbers in a deadline-oriented environment. They have the ability to concentrate for extended periods of time and pay close attention to detail but also have extensive multi-tasking skills. This position requires strict adherence to confidentiality and may require working long or irregular hours. Payroll clerks often have accounting backgrounds.

Pipeline, Pump Stations, Terminals

PURCHASING AGENTS (NOC 1524)

Other Job Titles: Timekeepers, Procurement Co-ordinators, Supply Chain Specialists, Buyers

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Skilled Position, Full-Time & Contract Work

Purchasing Agents buy goods, materials, supplies and services required for the construction project and ensure supplies are of the quantity, quality, price and availability required. Purchasing Agents are able to communicate effectively both in person and on paper. They require negotiation skills and strong organizational skills and should work well under pressure. They are able to analyze a wide range of purchasing options and make sound purchasing decisions. Purchasing Agents must have good computer skills and be detail-oriented. Prior experience and supply chain management educational background are required.

Pipeline, Pump Stations, Terminals

MATERIALS CO-ORDINATORS (NOC 1521)

Other Job Titles: Shipper/Receivers, Supply Chain Analysts, Materials Handlers

Essential Skills (Reading/Document Use/Numeracy): 3/2/4

Entry Level Position, Full-Time & Contract Work

Materials Co-ordinators receive and record the movement of parts, supplies, materials and equipment required for construction of the pipeline, pump stations and terminals. They control material inventory until it is turned over to the Project team. They may operate a forklift, hand truck or other equipment to load, unload, transport and store goods. Computer skills are generally required and applications include inventory control programs, word processing and spreadsheets. Attention to detail is required along with the ability to compile and organize information.

A Materials Co-ordinator works in a warehouse and outdoor setting and has knowledge of health and safety procedures, standards and regulations, security, customer service and basic mathematics. They are able to communicate effectively as they work with others to co-ordinate the movement of goods into and out of the warehouse. Materials Co-ordinators may require a driver's license and a forklift certificate. Some roles may require a supply chain management educational background.

Pipeline, Pump Stations, Terminals

CLERKS/ADMINISTRATIVE SUPPORTERS (NOC 1241/1411)

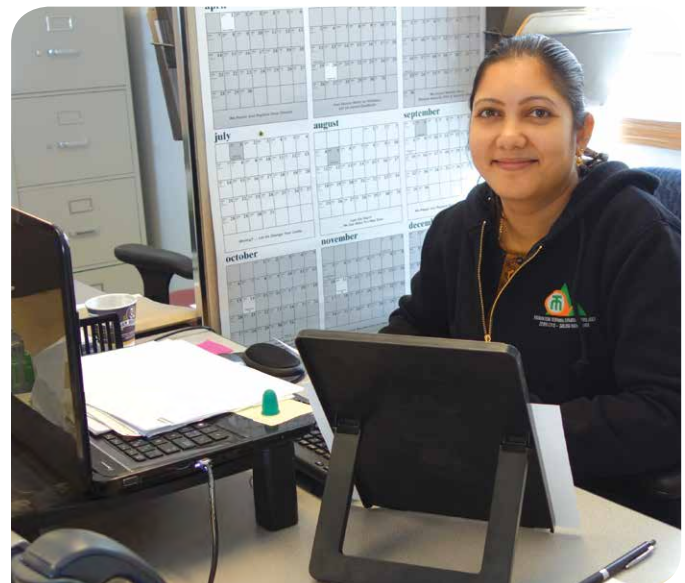
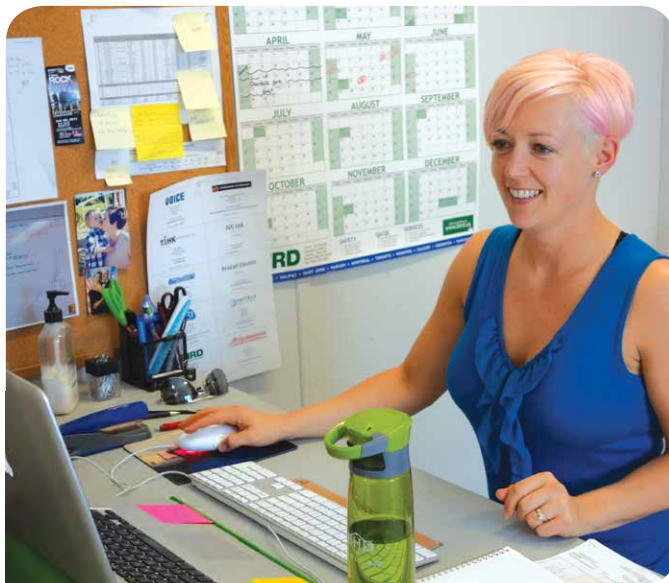
Essential Skills (Reading/Document Use/Numeracy): 3/3/3

Entry Level Position, Full-Time & Contract Work

Clerks assist the Field Office Administrator and operations and maintenance personnel with duties such as maintaining office procedures and supply inventories, data entry, reception and phone support, frontline technical support and training others on software use. In addition, they deliver work order completion reports and provide local support for updating materials transfers and sort, code and file records.

Clerks have good organizational and time management skills. They are able to work independently with minimal supervision and have the ability to handle confidential information. Clerks should have intermediate skills with Microsoft Office products and be able to communicate effectively with various contacts such as field staff, technical professionals and supervisors.

Pipeline, Pump Stations, Terminals



FIELD OFFICE ADMINISTRATORS (NOC 1221)

Other Job Titles: Office Managers, Administrative Officers

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Skilled Position, Full-Time & Contract Work

Field Office Administrators plan, organize and direct the administrative services of the construction field office. They advise and oversee staff engaged in records management, security, finance, purchasing, human resources or other administrative services. They also plan, administer and control budgets for contracts, equipment and supplies and interview, hire and oversee training for field office staff.

Field Office Administrators require good oral and written communications skills and good organizational time management skills and enjoy working both independently and as part of a team. They pay close attention to detail and can multi-task. Field Office Administrators enjoy working with people and have exceptional interpersonal skills. They must be comfortable using computer applications such as Microsoft Office Word and Excel, compiling and organizing information and tracking budgets.

Most employers require Field Office Administrators to have a minimum high school diploma. An administration or accounting certificate or diploma and related experience are considered assets.

Pipeline, Pump Stations, Terminals

FIELD COST CONTROLLERS (NOC 1111)

Essential Skills (Reading/Document Use/Numeracy): 4/4/5

Skilled Position, Full-Time Work

Field Cost Controllers are responsible for construction site cost management and collecting, reviewing and reporting on daily construction costs. This involves examining accounting records, preparing financial statements, analyzing cost reports and reviewing internal control procedures. Field Cost Controllers may be involved in providing updates and reports to Construction Management personnel and advising on financial or cost management decisions. Other duties include periodic budget review of construction contracts and developing progress and cost reports.

Attention to detail and accuracy are important as well as proficiency in MS Office, especially Excel. Previous experience, training and education in accounting are necessary, preferably in a construction operations environment. Professional designations and provincial association memberships such as Certified General Accountant (CGA) or Certified Management Accountant (CMA) are generally required. A relevant university degree and related experience may also be considered.

Pipeline, Pump Stations, Terminals

FIELD CONTRACT ADMINISTRATORS (NOC 1225)

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Skilled Position, Full-Time Work

Field Contract Administrators interpret contracts associated with the construction phase, prepare correspondence, co-ordinate work orders and amendments and monitor progress. They complete and close out contracts including final payments and discharge of liens. Duties may include forming, reviewing, revising and analyzing contracts as well as using computerized tracking systems.

Field Contract Administrators are able to communicate effectively both in person and on paper, have strong negotiation skills and work well under pressure. They manage relationships with contractors and ensure obligations to contractors are met in accordance with agreements. They also investigate and resolve complaints. Field Contract Administrators must have good organizational and computer skills and be detail-oriented.

Previous experience, training and education in contract administration are required and relevant post-secondary education is preferred.

Pipeline, Pump Stations, Terminals



Is a job in the construction industry right for you?

- ✓ I enjoy working with my hands.
- ✓ I am mechanically inclined.
- ✓ I do not mind working outdoors in all kinds of weather.
- ✓ I like to see what I've accomplished each day.
- ✓ I am okay being away from home for extended periods of time.
- ✓ I like working with others in a team environment.
- ✓ I am safety conscious and care about the well-being of others on the job site.
- ✓ I enjoy the challenge and opportunity to learn from moving from project to project.
- ✓ I am willing to pursue certifications required to work interprovincially.
- ✓ I have interests and relationships that I enjoy during downtime between projects.

CAMP SUPPORT



CAMP MANAGERS (NOC 0632)

Other Job Title: Lodge Managers

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Skilled Position

Camp Managers supervise the safe and proper operation of the work camp while performing a range of administrative tasks. They are generally employees of camp companies.

Camp Managers direct the setup and shutdown of a camp and schedule and supervise camp staff and administration. Supervisory tasks include responding to client and staff inquiries, resolving issues and complaints, and the overall management of camp activities. This role involves inspecting and evaluating camp cleanliness, food quality, presentation and inventories and ensuring all camp staff are adhering to health, sanitation and safety standards.

Administrative tasks include ensuring the camp is operating in a cost-efficient manner, handling staff time sheets, reporting accidents, injuries and on-site equipment use. Camp Managers maintain an inventory of vacancies, reservations and room assignments.

Camp Managers require extensive experience and good oral communication, organizational skills and time management skills. They enjoy working both independently and as part of a team and must be comfortable using computer applications, organizing information and tracking budgets.

To work as a Camp Manager, individuals require post-secondary training related to hotel and/or food services management, several years of experience in large camps, WHMIS and First Aid certification, and previous managerial experience.

Pipeline, Pump Stations



COOK/KITCHEN MANAGERS (NOC 6321)

Essential Skills (Reading/Document Use/Numeracy): 4/4/3

Skilled Position

Cooks/Kitchen Managers plan, organize, direct, control and evaluate kitchen operations. They must be competent in the major techniques and principles used in cooking, baking and other aspects of food preparation. In addition to a sound set of cooking skills, Cook/Kitchen Managers at this level are able to plan and cost menus and recipes. They recruit staff and oversee staff training, set staff work schedules and monitor staff performance. They are also responsible for inventory control and monitoring budgets, supplier arrangements and adherence to health and safety regulations.

Qualifications may range from individuals with extensive experience as a Cook/Kitchen Manager, to the completion of a college program related to hospitality or food and beverage service management with several years of related experience or an experienced apprentice or journeyman Cook. In BC, a Professional Cook 3 must have met all requirements of the national Red Seal standard. In Alberta, a Cook is a designated trade.

Pipeline, Pump Stations

COOK'S HELPERS (NOC 6711)

Other Job Title: Kitchen Helpers

Essential Skills (Reading/Document Use/Numeracy): 2/2/2

Entry Level Position

Cook's or Kitchen Helpers clear tables, clean kitchen areas, wash dishes and assist with basic food preparation. This includes tasks such as making sandwiches, hamburgers, salads and beverages and cleaning, peeling, slicing and trimming food items using manual and electric appliances. They may also portion and wrap food or put it on plates for service to patrons, stock refrigerators, cupboards and salad bars, and keep records of the quantities of food used. They clean and sanitize kitchen areas including work surfaces, cupboards and storage areas, as well as dispose of kitchen garbage.

Cook's Helpers enjoy working with people, have good interpersonal skills and must be comfortable working in a busy environment. They must have the ability to concentrate for long periods of time and pay close attention to detail while multi-tasking.

To work as a Cook's Helper, an individual must have WHMIS and Alberta/BC First Aid training and Food Safety Training.

Pipeline, Pump Stations

CAMP ATTENDANTS (NOC 6721)

Essential Skills (Reading/Document Use/Numeracy): 2/2/2

Entry Level Position

Camp Attendants are employees of the camp company and are responsible for kitchen and camp maintenance, housekeeping and the overall hygienic conditions of the bedroom, bathrooms, hallways, kitchen floors and dining area. Other duties include daily tasks to improve the camp's general appearance.

Camp Attendants must pay close attention to detail, be able to follow supervisory instruction and be comfortable multi-tasking.

Camp Attendants should have good oral communications, organizational and time management skills, and enjoy working both independently and as part of a team. They should be able to lift and be in good physical condition.

To work as a Camp Attendant, an individual must have WHMIS and Alberta/BC First Aid training.

Pipeline, Pump Stations

SPOTLIGHT: **Camp Life**

Industrial construction workers often need to live away from home to maintain employment in the industry. This is especially true for pipeline construction given the mobile nature of these projects. Companies recognize it can be difficult for workers to be away from their families and therefore try to make camp life as comfortable as possible with spaces for socializing and entertainment, areas for privacy, quality food, regular housekeeping and if possible, internet and cellphone service. Camp regulations dictate that worker accommodations are located a safe distance from the construction site and staffed with security and first aid personnel.



CONSTRUCTION MANAGEMENT



Essential Skills (Reading/Document Use/Numeracy): 4/4/4 • All Skilled Positions

PROJECT MANAGERS (NOC 0711)

Project Managers are responsible for the overall management of a project. They estimate, tender and assign work, and review, revise and sign off on contract documents. They are responsible for making changes as needed, tracking project budgets and being the communication contact for all team members. Project Managers are also responsible for ensuring environmental responsibilities are integrated into all project activities.

Project Managers build teams for project success, motivate team members and establish and maintain excellent working relationships with employees at all levels. They must have excellent computer knowledge and skills, and generally have an engineering degree and many years of pipeline, facility or terminal construction experience. Project Managers spend significant time meeting with construction contractors both in offices and at the work site.

Project Managers ensure jobs are completed in a safe, timely and cost-efficient manner.

Project Managers possess excellent organization skills, have the ability to build productive, dedicated teams and are extremely detail-oriented. They have the ability to multi-task, think ahead and deliver projects on time and on budget. They are effective communicators that can motivate others and effectively resolve potential internal conflicts. They have extensive experience in the construction industry and a strong mechanical knowledge. They likely have project management training and experience using project management software programs.

Pump Stations, Terminals

SPOTLIGHT: Commitment to Hiring

The proposed Trans Mountain Expansion Project will involve Kinder Morgan and contractor commitments to provide employment opportunities for Aboriginal and local community members. The majority of jobs will be created during pipeline, facility and terminal construction and span a wide variety of responsibilities, skill levels and trade specializations.

Trans Mountain will maximize Aboriginal, local and regional employment opportunities by working with communities, industry associations and construction prime contractors and sub-contractors.

CONSTRUCTION MANAGERS (NOC 0711)

Construction Managers oversee all construction activities and ensure the Project is completed to specifications, permit conditions, contracts and applicable codes and regulatory requirements. Construction Managers play a key role ensuring environmental and safety objectives are met by working closely with the Environmental Compliance Manager and the Environmental Manager to evaluate and improve the Project's environmental and safety performance. They co-ordinate all environmental and technical inspection activities and consult with regulatory authorities as required.

They have the ability to multi-task, think ahead and work effectively with all company and contractor personnel. In addition to being effective communicators, Construction Managers have exceptional problem-solving skills. They have extensive industrial construction-related experience and knowledge, and likely have project management training and experience using project management software programs.

Pipeline, Pump Stations, Terminals

SUPERINTENDENTS (NOC 0711)

Project Superintendents are responsible for day-to-day operations of the construction project. This includes management of construction schedules, quality control and safety. Superintendents supervise, co-ordinate and schedule the work required to complete construction of the pipeline, facility or terminal project. They also are responsible for ensuring day-to-day construction activities are conducted in an environmentally responsible manner.

Superintendents are also responsible for making sure construction project employees are trained in their job duties and the company's policies and procedures. In addition, they must also hold daily meetings with owner and inspector representatives.

Project Superintendents are excellent leaders and have strong planning and negotiation skills. They have excellent written, verbal and listening communication skills and have the ability to develop a workforce that is focused on safety, reliability and compliance. Superintendents manage multiple priorities, make good decisions, possess a positive attitude and have the ability to motivate and lead others.

They have an excellent understanding of pipeline, pump stations or terminal construction techniques. Superintendents operate in field office environments and in camp settings and often work extended hours.

Generally, Project Superintendents have 20 years of experience with 10 years in senior management.

Pipeline, Pump Stations, Terminals

ASSISTANT SUPERINTENDENTS (NOC 0711)

Assistant Superintendents are responsible for assisting the Superintendent fulfill his or her duties. The responsibilities of this position include managing construction schedules, quality control, environmental compliance and safety, and co-ordinating the activities of workers. Assistant Superintendents manage the ordering of materials and supplies, resolve work problems and recommend ways to improve productivity. They assist with worker training and also ensure the necessary equipment and machinery are on-site as required.

Assistant Superintendents must be flexible with regard to working in different environments, including in the office, in the outdoors and sometimes in isolated locations.

Assistant Superintendents are effective leaders with the ability to take direction from others, have excellent communications skills and are able to work with a wide range of team members. They have a strong knowledge of pipeline, facility or terminal construction techniques and can deliver assigned tasks on time and on budget. They also have experience monitoring and responding to employee performance. Typically, Assistant Superintendents have technical training related to construction and 10 – 15 years of experience.

Pipeline, Pump Stations, Terminals





TECHNICAL & PROJECT SUPPORT SUPERVISORS (NOC 0211) ▲

Technical and Project Support Supervisors are responsible for leadership and supervision, providing measurement expertise and technical support throughout the development and implementation phases and evaluating the integrity of engineering designs and plans. They co-ordinate research and development projects to introduce effective oil measurement technologies.

In addition, they actively support and participate in industry committees in the development of new measurement technologies and standards, and provide leadership and coaching to staff including accountability for delivering on performance objectives.

Supervisors are Professional Engineers with 7 – 10 years of progressively complex and related technical experience or an equivalent of experience and education. They have excellent, oral, written and computer skills, and display outstanding leadership, project management and interpersonal skills. They are good at working under pressure and have proven ability to think strategically.

Pipeline, Pump Stations, Terminals

FOREMEN (NOC 0711) ▲

Foremen supervise and direct on-site construction for all key construction functions. They are responsible for crews including hiring, training, scheduling, problem solving and monitoring. They must be adaptable to different environments and be able to lead a team and respond in a capable, controlled manner when emergencies arise. They are knowledgeable about construction methods, materials and regulations and have a solid understanding of environmentally responsible practices. Foremen must view safety as a main concern and have good communication skills.

Foremen are able to handle the pressure of deadlines in a fast-paced environment, possess excellent written and verbal communication skills, and have a proven track record as effective team leaders. They have good interpersonal skills, must be flexible with regards to working long and/or irregular hours and have the ability to maintain a positive attitude in a high-stress environment.

Foremen positions are filled based on the applicants' prior pipeline, facility or terminal construction work experience as well as trades certification/post-secondary education, safety and technical certifications and work references.

Each of the different Foremen are responsible to the Superintendent for cost-effective attainment of crew production goals set by the contract or the Superintendent. They include:

Backfill Foremen – direct and supervise the crew that completes backfill of the trench following lowering in of the pipeline. They may also be responsible for directing and supervising cleanup crews.

Pipeline, Pump Stations, Terminals

Bending Foremen – direct and supervise the crew that completes bending of pipe joints so the pipeline will follow the ditch centre-line and geographical contours.

Pipeline, Pump Stations, Terminals

Cleanup Foremen – direct and supervise the crew that completes cleanup and restoration of all areas disturbed or damaged by pipeline construction or related activities. They are responsible for the placement of previously stockpiled topsoil.

Pipeline, Pump Stations, Terminals

Clearing Foremen – direct and supervise the crew that completes the hand or machine clearing and disposal of trees and brush on the pipeline right-of-way prior to grading and subsequent construction operations.

Pipeline, Pump Stations, Terminals

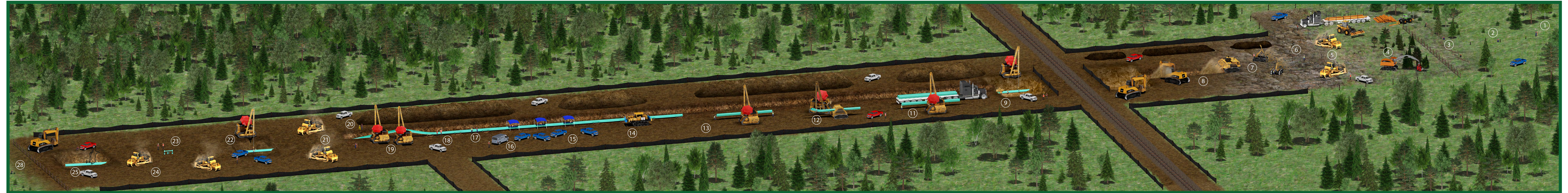
Coating Foremen – direct and supervise the crew that completes pipeline sandblasting activities and applies protective coating on girth welds and valve assembly in accordance with contract specifications.

Pipeline, Pump Stations, Terminals

Ditch Foremen – direct and supervise the crew that excavates the pipeline trench in accordance with contract specifications and the location stakes provided.

Pipeline, Pump Stations, Terminals

Major Activities of a Typical Pipeline Construction Spread



This graphic is a compressed view showing the main work activities over several kilometres during construction of a major pipeline project.



- | | | | |
|------------------------------------|---|---|---|
| 1. Routing & Environmental Surveys | 8. Trenching | 15. Welding-Fill Passes & Cap (Firing Line) | 22. Tie-Ins |
| 2. Staking for Construction | 9. Boring - Conventional | 16. NDE Examination (X-Ray or UT) | 23. Fabrication |
| 3. Temporary Fencing & Signage | 10. Boring - Horizontal Directional Drill (not shown) | 17. Field Weld Coating | 24. Cleanup |
| 4. Clearing | 11. Stringing (ahead of or behind trenching) | 18. Final Coating Inspection (Jeeping) | 25. Caliper Pigging & Hydrostatic Testing |
| 5. Grading & Topsoiling | 12. Pipe Setup & Bending | 19. Lowering-In | 26. Dewatering, Drying, Final Tie-Ins (not shown) |
| 6. Restaking Trench Centreline | 13. Setup, End Preparation & Alignment (Pipelay) | 20. As-Built Survey | 27. Commissioning (not shown) |
| 7. Rock Trenching & Padding | 14. Welding-Rootbead & Hot Pass (Pipe Gang) | 21. Backfilling | 28. Final Cleanup, Restoration & Revegetation |
| | | | 29. Monitoring & Maintenance (not shown) |

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 [transmountain.com](https://www.transmountain.com)
blog.transmountain.com





ENGINEERS & ENGINEERING TECHNOLOGISTS



All Skilled Positions

ENGINEERS

Essential Skills (Reading/Document Use/Numeracy): 5/5/5

Engineers are involved in the design and construction phases of the Project. They will ensure the detailed designs and activities associated with construction of the pipeline, pump stations and terminals are compliant with regulations, specifications and contract documents. Developing detailed designs for the Project is key to ensuring accurate procurement, fabrication, construction and installation of the pipeline, pump stations and terminals. Engineers may also oversee the work of Technologists and Technicians.

The minimum requirement for Engineers is a bachelor's degree in engineering. Most companies also require Engineers to become registered or licensed by a provincial or territorial association. This involves three or four years of supervised work experience in engineering and passing a professional practice exam. Registration is required to approve engineering drawings and reports and to practice as a Professional Engineer (P.Eng.). Unlicensed engineers must work under the direct supervision of a Professional Engineer.

All engineering disciplines work closely together to ensure all components of the construction Project meet specifications, regulations and contracts. They are good communicators and problem-solvers.

Engineer Roles:

Civil Engineers (NOC 2131) – Pipelines: prepare and interpret engineering designs, drawings and specifications for pipeline alignment and installation and crossings, bends and other details. Facilities: prepare and interpret engineering designs, drawings and specifications for the earthworks, foundations and structures for pump stations and terminals.

Pipeline, Pump Stations, Terminals

Electrical/Instrumentation Engineers (NOC 2133)

– prepare and interpret engineering designs, drawings and specifications for power and control systems, electrical and instrumentation equipment (such as transformers, switchgear, variable frequency drives, motor control centres, motors, meters, etc.), and cable, cable tray and grounding for pipelines (valve sites), pump stations and terminals.

Pump Stations, Terminals

Mechanical Engineers (NOC 2132) – prepare and interpret engineering designs, drawings and specifications for power and control systems, electrical and instrumentation equipment (such as transformers, switchgear, variable frequency drives, motor control centres, motors, meters, etc.), and cable, cable tray and grounding for pipelines (valve sites), pump stations and terminals.

Pipeline, Pump Stations, Terminals

Process Engineers (NOC 2134) – prepare and interpret engineering designs, drawings and specifications related to the operational function and performance of process and piping systems (including hydraulics, surge analysis, heat transfer, equipment capacities, pipe sizing, protective devices, etc.) for pipelines, pump stations and terminals.

Pump Stations, Terminals

Field Engineers (NOC 2131) – work directly with and report to the Project Manager and liaise closely with the KMC Technical Advisor. Field Engineers maintain continuous contact with the Construction Manager, Assistant Chief Inspectors, the Environmental Inspector, the Quality Lead and appropriate regulatory personnel as required.

Pump Stations, Terminals

ENGINEERING TECHNOLOGISTS

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Engineering Technologists provide technical support to engineers during the construction of pipelines, pump stations and terminals by preparing engineering designs, construction specifications, cost and material estimates, project schedules and reports. Most engineering designs are created using computer-aided design (CAD) software.

Engineering Technologists usually require post-secondary training and can also pursue professional technologist certification through supervised work experience. Engineering Technologists need to be comfortable using computers and CAD software.

Mechanical and Electrical/Instrumentation Engineering Technologists are also hired during operations to maintain mechanical and electrical/instrumentation equipment. Engineering Technologists can be involved in operations work from field locations.

Engineering Technologist Roles:

Drafting Technologists and Technicians (NOC 2253) – prepare engineering designs and drawings from preliminary concepts, sketches, engineering calculations, specification sheets and other data using computer-aided design (CAD) and drafting programs.

Pipeline, Pump Stations, Terminals

Civil Engineering Technologists (NOC 2231) – prepare and interpret structural engineering designs, drawings and specifications for construction of the pipeline, pump stations and terminals.

Pipeline, Pump Stations, Terminals

Electrical/Instrumentation Engineering Techs (NOC 2241)

– design and oversee installation and testing of electrical components, electronic communications, instrumentation and control systems used to monitor pipeline, pump station and terminal operations.

Pipeline, Pump Stations, Terminals

Mechanical Engineering Technologists (NOC 2232)

– prepare and interpret engineering designs, drawings and specifications for construction of mechanical installations required by the pipeline, pump stations and terminals including pumps, valves and flow meters.

Pipeline, Pump Stations, Terminals

SURVEYORS (NOC 2154)

Essential Skills (Reading/Document Use/Numeracy): 5/5/5

Surveyors develop survey plans and conduct surveys to establish and mark legal boundaries of properties.

Surveyors set up and use specialized electronic equipment to obtain measurements of horizontal and vertical angles and calculate parallel offset lines when completing pipeline surveys. They use contour or elevation graphs to analyze the topography of an area and to plot it onto scale plans. They analyze, manage and display data using geographic information systems (GIS) and computer-aided design and drafting and record all measurements and other information obtained during survey activities.

Surveyors work outdoors in all types of weather and sometimes in isolated locations. They interact with co-workers and colleagues to discuss projects and co-ordinate job tasks.

Ideal candidates are registered as an Alberta or BC Land Surveyor with a diploma or degree from a recognized institution specializing in geomatics.

Pipeline, Pump Stations, Terminals

ENVIRONMENTAL COMPLIANCE ROLES

ENVIRONMENTAL COMPLIANCE MANAGERS (NOC 4161)

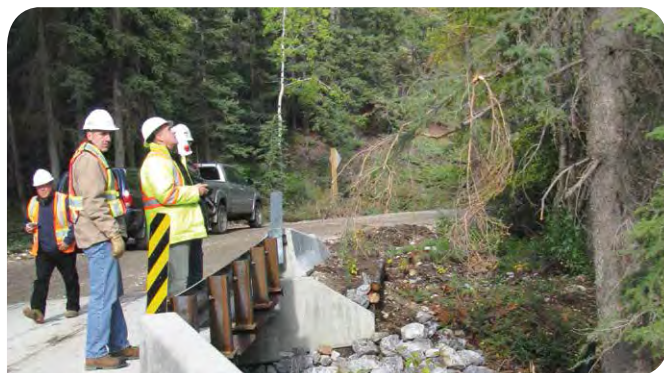


Essential Skills (Reading/Document Use/Numeracy): 4/4/4
Skilled Position

Environmental Compliance Managers develop, maintain and ensure implementation of the Project's Environmental Compliance Plan. They work closely with the Project Construction Field Management Teams and report to the Environmental Manager to ensure environmental commitments are understood, implemented and documented through all phases and locations of Project construction. Environmental Compliance Managers are responsible for the maintenance of the environmental commitment and issues tracking list which monitors environmental compliance issues to resolution, and informs the as-built report and post-construction monitoring process. Environmental Compliance Managers co-ordinate on-site environmental compliance audits and are responsible to communicate non-compliance issues and reportable spills to regulatory authorities.

Environmental Compliance Managers have full understanding of the Environmental Protection Plans and Project environmental commitments to regulatory authorities, government agencies, Aboriginal groups and the public, as well as understanding pipeline and facilities construction methods. The position requires excellent communication abilities to co-ordinate with all levels of construction management and to liaise with environmental regulatory authorities. Environmental Compliance Managers are required to have a background in the utilities industry and a bachelor's or graduate degree in a related scientific or technical discipline.

Pipeline, Pump Stations, Terminals



PERMITS & APPROVALS MANAGERS (NOC 4161)

Essential Skills (Reading/Document Use/Numeracy): 4/4/4
Skilled Position

Permits and Approvals Managers oversee all elements of environmental permits and compliance necessary for Project construction and confirm understanding of permit requirements with the regulator and with construction and handle any permit-related issues. They work closely with Project Construction Field Management Teams to ensure all required permits are in place and advise when new or revisions to permits are necessary. Permits and Approvals Managers co-ordinate with Field Management to track that the conditions of permits are being met and ensure field office permit binders are kept up to date with all necessary permits.

Permits and Approvals Managers are experienced professionals with either technical construction or environmental training. They have knowledge of federal and provincial environmental laws and regulations and the requirements of the Project Environmental Protection Plan. The position requires skills at building strong work relationships, collaborating and negotiating and the ability to pay attention to detail while keeping the Project as a whole in mind.

Pipeline, Pump Stations, Terminals

ENVIRONMENTAL INSPECTORS (NOC 2263)



Essential Skills (Reading/Document Use/Numeracy): All 4/4/4
Skilled Position

Environmental Inspectors (EIs) are part of the Project Field Management Team and ensure the Project Environmental Protection Plans (EPP) are understood and met during all phases of construction. They monitor Project construction activities to ensure mitigation and contingency plans are being implemented to minimize environmental disturbance and that activities are in compliance with commitments of the EPP and regulatory permits and approvals.

They tour the right-of-way and visit site activities to monitor construction compliance to the EPP and go ahead of construction phases to ensure environmentally sensitive features are sufficiently signed and mitigation requirements are understood by each upcoming phase of construction. They support and advise Activity Inspectors and Construction Foremen in applying the EPP by reviewing the Environmental Alignment Sheets (EAS) to ensure environmental features and mitigation measures are incorporated into daily construction plans. Where necessary, EIs halt work where non-compliant conditions exist and discuss how corrective solutions can be applied.

Environmental Inspectors have extensive pipeline construction experience and full understanding of the Project EPP and regulatory commitments. They have a background in environmental field sciences and application. They are comfortable communicating environmental protection measures under all types of construction conditions. They must be physically prepared for the work and have good observation, documentation and reporting skills.

Pipeline, Pump Stations, Terminals

ENVIRONMENTAL ABORIGINAL MONITORS (NOC 2263)



Essential Skills (Reading/Document Use/Numeracy): 4/3/3
Skilled Position

Aboriginal Monitors are part of the Environmental Inspection team. They have knowledge of Project Environmental Protection Plans and support the Environmental Inspection team and Resource Specialists by contributing a traditional knowledge-based and stewardship perspective to protecting the land. They go ahead of construction to ensure environmental features, such as wildlife habitat, water and plant resources are being correctly identified and protected. They assist in collecting information and test samples on environmental conditions, including, water, wildlife habitat, vegetation and soils. They monitor daily construction activities and work closely with Environmental Inspectors. They assist in daily operations in maintenance and running of equipment related to environmental work.

Aboriginal Monitors have good observation and communication skills and provide reports on daily activities. They give guidance to the Project team on applying traditional land stewardship values during pipeline construction and reclamation.

They must enjoy working in a team-oriented environment, be physically prepared for the work and possess strong skills in diplomacy, conflict resolution and a willingness to exchange ideas and solve problems. They likely have Environmental Technologist education and/or experience.

Pipeline, Pump Stations, Terminals

SAFETY COMPLIANCE ROLES

SPOTLIGHT: **Safety**

Construction work is fast-paced, uses heavy equipment and hazardous materials and is conducted outdoors in all types of weather. Ensuring a safe work environment and responding with appropriate first aid procedures are expectations for all workers.

Proper safety training and following safety procedures can help reduce incidents on the construction site. Industry standards generally require all workers to have CSTS (Construction Safety Training System) or PCST (Pipeline Construction Safety Training) certification, WHMIS (Workplace Hazardous Materials Information System) and First Aid. In addition, supervisors require Leadership for Safety Excellence training.

SAFETY CO-ORDINATORS (NOC 2263)



Other Job Title: Safety Officers

Essential Skills (Reading/Document Use/Numeracy): 4/3/3
Skilled Position

Safety Co-ordinators play a key role in the development of a zero-injury safety culture. They are responsible for ensuring all construction contractors conduct themselves in a safe manner and in accordance with Project safety plans, equipment operating manuals and guidelines, as well as applicable federal and provincial safety and health regulations.

Safety Co-ordinators need a strong working knowledge of federal and provincial occupational health and safety regulations. An understanding of the construction site and equipment used is also beneficial. They require a driver's license and preference is given to Safety Inspectors with Construction Safety Officer (CSO) Certification or National Construction Safety Officer (NCSO) designation.

Pipeline, Pump Stations, Terminals

SAFETY INSPECTORS (NOC 2263/2264)



Essential Skills (Reading/Document Use/Numeracy): 4/4/4
Skilled Position

Safety Inspectors serve as the primary interface between the company and the contractors at construction sites. They actively monitor contractor work progress to ensure compliance with health and safety expectations and applicable federal and provincial safety and health regulations.

Safety Inspectors inspect work sites as well as first aid facilities and emergency vehicles to ensure compliance with applicable federal and provincial safety and health regulations. They assist contractors in meeting their commitments and conducting regular inspections and audits of the work site on behalf of the company. They also have knowledge of construction practices and previous experience on industrial construction projects. They require a driver's license and preference is given to Safety Inspectors with Construction Safety Officer (CSO) Certification or National Construction Safety Officer (NCSO) designation or a Canadian Registered Safety Professional (CRSP) designation.

Pipeline, Pump Stations, Terminals

SECURITY OFFICERS (NOC 6541)

Other Job Titles: Guards, Watchmen

Essential Skills (Reading/Document Use/Numeracy): 3/2/3
Entry Level Position

Security Officers conduct mobile and foot patrols at camp and construction sites. They check for signs of damage, theft or intrusions and report unusual activity or incidents to the Supervisor. They are responsible for vehicle and pedestrian access and clear visitors at the construction site or camp gate.

Security Officers also monitor work areas for hazards, enforce policies, regulations, applicable laws and site rules, respond to fire alarms and other emergencies, and issue or assign pass or permit numbers.

This role requires excellent physical condition, good vision, good eye-hand and hand-foot co-ordination, mechanical ability, a strong work ethic, good report writing skills and the ability to work alone.

Security Officers must be at least 18 years of age and preference will be given to candidates with an applicable provincial security guard certification, Alberta/BC First Aid, WHMIS training and Alberta/BC Pipeline Construction Safety Training (PCST) course. Security Officers require a driver's license and may be required to be licensed and bondable.

Pipeline, Pump Stations, Terminals

EMERGENCY MEDICAL RESPONDERS – EMRs (NOC 3234)



Other Job Titles: Emergency Medical Technicians (EMT),
Emergency Medical Assistants (EMAs), Occupational First Aiders
Essential Skills (Reading/Document Use/Numeracy): 4/3/3
Skilled Position

Emergency Medical Responders (EMRs) administer pre-hospital emergency medical care to patients with injuries or medical illnesses and, if necessary, transport them to hospitals or other medical facilities for further medical care. They assess the extent of injuries or medical illnesses to determine emergency medical treatment.

EMRs need to collaborate with ambulance dispatch centres, hospital staff, police, firefighters and family members to ensure relevant information is collected and proper treatment is administered. They also document and record the nature of injuries and illnesses and treatment provided.

Emergency Medical Responder is a physically and emotionally demanding job. Since services are provided 24 hours per day, weekend, evening and holiday work is required. EMRs work both in emergency transport vehicles or at fixed first aid room locations.

In BC and Alberta, EMRs are governed by a provincial licensing agency (in BC, the Emergency Medical Assistants Licensing Board; in Alberta the Alberta College of Paramedics) and must have valid certificates from a recognized training agency. EMRs may also require Occupational First Aid training and designations from WorkSafeBC or otherwise meet the requirements of Alberta Occupational Health and Safety requirements.

Pipeline, Pump Stations, Terminals



RECLAMATION SPECIALISTS



Entry Level Positions

Reclamation Specialist crew members are responsible for returning vegetation, drainage patterns, natural and human habitat back to disturbed areas of the pipeline corridor following construction.

Tasks will include:

- Installing erosion control structures: silt fencing and fabric matting.
- Weed control measures: mechanical weed whacking, mowing and hand pulling.
- Seeding and fertilizer applications; by-hand broadcast, 4x4 ATV and tractor-pulled cyclone broadcasters, assisting with specialized methods such as fixed wing and helicopter seeding and hydro-seeding.
- Tree planting: installing tree and shrub planting plugs on foot with hand tools.
- Live willow staking: correct selection, harvesting, handling and installation of native live willow stakes to restore wetland, stream bank and seepage site vegetation.
- Plant care and irrigation: handling and care of nursery stock plants before, during and following planting.
- Watercourse reclamation: assisting to install structures, materials and plants to reclaim stream bank habitat at pipeline crossings
- Browse controls: installing fencing and other measures to protect reclamation plantings from animal browse.
- Access controls: installing fencing, gates, log structures and barriers to prevent vehicle and ATV access thereby protecting reclamation areas.
- Landscaping: residential area landscape installations of grass areas, tree and shrub plantings, fences and paths.

Beneficial Skills and Job Assets:

- Tasks will involve knowledge of how to safely operate and maintain hand tools, and power tools such as chainsaws (certification required), mechanical weed whackers, pumps etc.
- Driving: a current clean driver's license with abstract is required and ATV operator's certification.
- Experience and skill in operating farm and semi-heavy equipment such as tractors, skid-steers, forklifts and small backhoes.
- Plant identification: knowledge and ability to identify local native plants and invasive weed species would be beneficial.
- Organizational and logistical skills: the work entails planning ahead, ensuring all needed tools, fuels, materials, safety gear and plants are available, loaded and transported safely to work sites, which are often remote.
- Documentation: work will require recording amounts and coverage by area of seed, fertilizer and plants and maintenance of daily work logs and safety documentation.
- Safety: Construction Safety Training System (CSTS) or Pipeline Construction Safety Training (PCST), Workplace Hazardous Materials Information System (WHMIS) and First Aid training are considered assets.

Personal Skills:

- Reclamation specialists must work in teams where willingness to work and consideration for others will benefit the success and safety of the group.
- Health: good physical condition is needed as the work is demanding and takes place outdoors, often in challenging terrain and weather conditions.
- Personal care: to work as team members individuals will need to look after their own gear, which will include dry boots and gloves, rain gear, sufficient and suitable clothing, and pack enough food and water to sustain them over the workday.



SEMI-SKILLED WORKERS



Essential Skills (Reading/Document Use/Numeracy): 2/2/2 • Entry-Level Positions

Semi-skilled Worker positions are entry level and challenging. Semi-skilled Workers must be in excellent physical condition and have good vision, depth perception and co-ordination. A strong work ethic and an ability to learn and deal with a methodical work environment are needed. Semi-skilled Workers must like challenges and enjoy troubleshooting problems. They are comfortable working in remote work camps and in all types of weather and enjoy working as part of a team. Semi-skilled Workers are able to take direction, follow instructions and safety procedures, and work with caution and care.

Semi-skilled Workers may work in construction or operations but there is greater demand for Semi-skilled Workers during the construction phase. Construction and pipeline Semi-skilled Workers are involved in different supportive labour roles and assist skilled tradespersons on the construction site.

Typical Roles – There are a variety of Semi-skilled Worker roles required for the Trans Mountain Expansion Project.

GENERAL LABOURERS/PIPLINERS (NOC 7611)

The General Labourers/Pipeliners position is an entry-level job with duties usually performed by hand. It is a physically demanding job involved in various duties on the construction site, such as work site maintenance, hand digging to expose existing infrastructure and maintaining the site.

Pipeline, Pump Stations, Terminals

SWAMPERS (NOC 7611)

Other Job Title: Trades Helpers

Swampers assist Truck Drivers and Heavy Equipment Operators (HEO) with loading and unloading goods, attaching chokers and chains, and cleaning equipment. Swampers signal to HEOs to guide them in moving, cleaning and fuelling equipment. They travel with the transport and ensure the load is tied down properly.

Pipeline, Pump Stations, Terminals

OILERS (NOC 7612)

Other Job Titles: Labourers, Trades Helpers

Oilers ensure all mechanical equipment is properly lubricated in accordance with equipment service manuals.

Pipeline

SURVEY HELPERS (NOC 7612)

Other Job Titles: Survey Helper Stickmen, Survey Interns, Rodmen

Survey Helpers assist with survey work for various construction activities such as right-of-way and facility boundary layouts, grading activities, foundation and piling layout, and gathering as-built information for existing facilities and structures and new piping and equipment installations.

Pipeline, Pump Stations, Terminals

MEASUREMENT (NOC 7611)

Other Job Titles: Labourers, Bending Crew Helpers

Measurement Labourers assist the Bending Engineer/Technologist with pipe measurements to ensure the proper bend is put into the pipe so it fits into the trench. They should be comfortable with calculations.

Pipeline

SANDBLASTERS (NOC 9612)

Sandblasters are responsible for sandblasting and hand-held high-pressure water jet operations used for cleaning and preparation of the pipe for welding, final buffing and application of protective pipe coating. There may be a potential for dusty work conditions.

Pipeline

PIPELINE LABOURERS (NOC 7611)

Other Job Titles: Stringing, Jeeps & Lower-In Pipeliners

Pipeline Labourers assist in stringing pipe along ditch line and lowering pipe in ditch and running testing equipment.

Pipeline

TRADES HELPERS (NOC 7611)

Trade Helpers assist journeymen with equipment, tools and cleanup. They position materials, pipes, fittings and pumping equipment for trades workers. Basic knowledge of trades is helpful.

Pipeline, Pump Stations, Terminals

SPECIALIZED LABOURERS (NOC 7612)

Other Job Titles: Pump Operators

Specialized Labourers manage pumps and other equipment as required to handle surface and ditch water during construction, installation and removal of silt fencing and other erosion control measures.

Pipeline, Pump Stations, Terminals

TRAFFIC CONTROLLERS (NOC 7611)

Other Job Titles: Flagmen

Traffic Controllers control traffic using hand signals, flags, paddles, lights, signs, barricades, etc. while crews are working on or near highways or roadways. MOT certification is required.

Pipeline, Pump Stations, Terminals

FIRE WATCH LABOURERS (NOC 7611)

Other Job Titles: Labourers

Fire Watch Labourers burn brush piles for clearing operation and fire watch within existing facilities. They must be able to run chainsaws and operate gas-monitoring equipment.

Pipeline, Pump Stations

PAINTERS/COATERS (NOC 7294)

Essential Skills (Reading/Document Use/Numeracy): 3/3/3

Painters and Coaters apply pipe coating on the pipeline. Pipe coating prevents water from coming into contact with the steel and causing corrosion. They apply other finishes to interior and exterior surfaces of buildings, tanks, piping, structural steel and other permanent structures for protection.

Pipeline, Pump Stations, Terminals

Other Semi-skilled positions include Power Saw Operators, Flaggers and Rodmen.

Semi-skilled Workers require safety certifications that may include Construction Safety Training System (CSTS) or Pipeline Construction Safety Training (PCST) and Workplace Hazardous Materials Information System (WHMIS) training. First Aid certification is considered an asset. Other certificates may be required depending on the type of work such as: H2S Alive or Awareness; Fork Lift Operation, Wildlife Awareness, Confined Space Entry, All Terrain Vehicle (ATV), Chainsaw Safety, Fall Protection or Transportation of Dangerous Goods (TDG). A valid driver's license may also be required for some positions. Physical strength and stamina to work with heavy equipment and in cramped and awkward positions are also required.



SEMI-SKILLED JOBS ARE ENTRY LEVEL AND CHALLENGING. Semi-skilled Workers must be in excellent physical condition and have good vision, depth perception and hand-foot co-ordination. A strong work ethic and an ability to learn and deal with a methodical work environment are also needed. Semi-skilled Workers must like challenges and enjoy troubleshooting problems. They are comfortable working in remote work camps in all types of weather and enjoy working as part of a team. Semi-skilled Workers are able to take direction, follow instructions and safety procedures, and work with caution and care.



TECHNICAL INSPECTOR ROLES



Essential Skills (Reading/Document Use/Numeracy): 4/4/4 • All Skilled Positions

A variety of Technical Inspectors are associated with construction of the pipeline, pump stations and terminals to ensure compliance with all specifications, quality standards, codes and regulations. Technical Inspectors, Environmental Inspectors and Safety Inspectors ensure the Project is constructed safely with minimal environmental and socio-economic impacts. Before the pipeline is put into service it is tested to ensure it is fit for its purpose and that there are no defects in the pipeline. Two key testing activities are hydrostatic (pressure) testing and pigging (internal gauging).

Technical Inspectors are hired based on previous pipeline, pump station and/or terminal construction experience and certifications. Technical Inspectors require the technical and regulatory knowledge to proactively identify mitigative and corrective measures during the construction phase of the Project. They are familiar with the tools and equipment required to conduct inspection and testing. In addition to Construction Safety Training System (CSTS) or Pipeline Construction Safety Training (PCST), Workplace Hazardous Materials Information System (WHMIS) and First Aid, Technical Inspectors may require Line Locating Certification, Ground Disturbance Certification, Confined Space Entry Tickets and H2S Alive.

Technical Inspectors require good communication and problem-solving skills. They are comfortable working outdoors, are in good physical condition and have good vision.

CHIEF INSPECTORS (NOC 2264)

The Chief Inspector is the Senior Representative in the field and reports directly to the Construction Manager. All inspectors, including Safety Inspectors, Office Manager, Surveyors, Right-of-Way Agents and third-party consultants report to the Chief Inspector, either directly or indirectly. The Chief Inspector liaises on a daily basis with the Field Environmental Inspectors to determine whether environmental guidelines are being followed to the extent practical. The Chief Inspector's role is paramount in co-ordinating the efforts of the Field Inspection Team to ensure the conditions of the Contract Documents and the Regulatory commitments are met at all times.

While office-based, Chief Inspectors spend a good portion of their time in the field.

Pipeline, Pump Stations, Terminals

TECHNICAL INSPECTORS (NOC 2264/2261)

Technical Inspectors monitor and control construction practices to minimize potential adverse effects on the safety of work areas, the environment or the final technical performance requirements of the pipeline, pump stations and terminals. The intent of all inspection activities is to monitor, control and ensure the minimization of construction practices or procedures which could have adverse effects on the safety of work areas, the environment or the final technical performance requirements of the pipeline system. Recognition of the need for early implementation of mitigative and corrective measures is a key function and responsibility of all Inspectors.

Typical Roles:

Ground Disturbance Inspectors – ensure all ground disturbance activities are completed in accordance with third-party permits and company pipeline and terminal protection and damage prevention plans and procedures.

Pipeline, Terminals

Pigging and Hydrotest Inspectors – oversee the hydrotesting and pigging of the pipeline to ensure it is fit for operation.

Pipeline

Senior Welding Inspectors – co-ordinate all welding activities throughout the Project and report on a daily basis to the Construction Manager. Senior Welding Inspectors are responsible for ensuring consistency of inspection procedures, consistency among NDT Contractors and welding consistency between all spreads.

Pipeline, Pump Stations, Terminals

Pipeline Inspectors – oversee various pipeline construction activities including preparation of right-of-way, installation of the pipeline and reclamation of the work site. They ensure compliance to Project specifications, drawings, codes, standards and regulatory requirements. Each phase of pipeline construction has its own Inspector. Pipeline Inspectors each have their own duties and responsibilities, however, working and communicating as a team is essential to minimize conflicts arising between phases of construction.

Pipeline

Pipeline Inspector roles may include:

- River Crossings Inspector
- Rock Blasting Inspector
- Trench Inspector
- String/Bend Inspector
- Lower-in Inspector
- Tie-in Inspector
- Bore Inspector
- Fabrication Inspector
- Backfill Inspector
- Welding Inspector
- Cleanup Inspector
- Horizontal Directional Drilling Inspector
- Buoyancy Control Inspector
- Field Coating Inspector
- Topsoil Removal Inspector
- Grading Inspector
- Clearing Inspector
- Stockpile Inspector
- Buried Facilities Inspector
- NDT Inspector

Craft Inspectors – oversee various pump station and terminal construction activities. They ensure compliance to Project specifications, drawings, codes, standards and regulatory requirements. Each craft or discipline has its own Inspector. Craft Inspectors each have their own duties and responsibilities, however, working and communicating as a team is essential to minimize conflicts arising between phases of construction.

Pump Stations, Terminals

Craft Inspector roles include:

- Earthworks Inspector
- Piling Inspector
- Civil or Foundations Inspector
- Tank Inspector
- Structural Inspector
- Mechanical Inspector
- NDT Inspector
- Rotating Equipment Inspector
- Piping Inspector
- Welding Inspector
- Coating Inspector
- Electrical/Instrumentation Inspector
- Operations Liaison



SPOTLIGHT: Pre-Employment Medical & Drug Testing

Pre-employment medical and drug testing is commonplace in the industry. It is just one of the ways companies demonstrate their commitment to ensuring workers can do their job safely.





All Skilled Positions

Tradespeople are actively involved in the construction and fabrication of materials and equipment and ongoing maintenance of the pipeline, pump stations and terminals.

Pipeline, pump station and terminal construction sites are fast-paced, physically demanding and safety conscious work environments. Trades workers must enjoy working outdoors in a team environment and adhere to safety protocols. Trades workers have excellent manual dexterity, good hand-eye co-ordination and can concentrate on detailed work. They may be required to work within confined spaces or at heights.

CARPENTERS (NOC 7271)

Other Job Title: Industrial Carpenters

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Carpenters construct various temporary and permanent foundations and structures. They read and interpret blueprints and drawings to determine specifications and calculate material requirements.

For pump station and terminal construction, carpenters also require a background in concrete, grout and masonry applications.

Carpenters assist with the setup and maintenance of construction camps and yard infrastructure.

Pump Stations, Terminals

PLUMBERS/GASFITTERS (NOC 7251)

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Plumbers and Gasfitters assist with setup and maintenance of water, heating cooling and sprinkler systems at the construction camps.

Pipeline, Pump Stations, Terminals

HEAVY-DUTY MECHANICS (NOC 7312)

Other Job Title: Heavy-duty Technicians

Essential Skills (Reading/Document Use/Numeracy): 4/4/3

Heavy-duty Mechanics repair and maintain heavy transport and construction equipment such as bulldozers, side-boom tractors, trackhoes, etc. They need to be mobile and move along the pipeline. Good mechanical senses are an asset in order to assist with the diagnosis of mechanical problems.

Pipeline, Pump Stations, Terminals

PIPEFITTERS (NOC 7252)

Other Job Titles: Industrial Pipefitters, Pipefitters/Steamfitters, Pipeline Spacers, Pipeline Stabbers

Essential Skills (Reading/Document Use/Numeracy): 4/3/4

Pipefitters install high pressure industrial piping, prefabricated spools and valves used in pump stations and terminals. During pipeline construction, they bevel the ends of each pipeline section so it aligns for welding, ensure the joint of pipe to be welded is aligned and ensure the proper space between the pipe joints is maintained.

Pipeline, Pump Stations, Terminals

WELDERS (NOC 7237)

Other Job Titles: B-Pressure Welders, Pipeline Arc Welders, Utility Welders

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Welders use manual or semi-automatic welding equipment to fuse pipe joints or structural metals together. They need to be certified as a B Pressure Welder to construct pipelines and tanks. All welds are tested using techniques that include MPI, x-ray and ultrasonics.

Pipeline, Pump Stations, Terminals

BOILERMAKERS (NOC 7234)

Essential Skills (Reading/Document Use/Numeracy): 3/4/4

Boilermakers fit and weld metal parts or sections together to fabricate and assemble oil storage tanks. They work closely with others during fabrication, assembly and installation of heavy metal structures.

Terminals

ELECTRICIANS (NOC 7242)

Other Job Titles: Industrial Electricians, Pipeline Electricians, Maintenance Technicians

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Electricians install, maintain, test, troubleshoot and repair industrial electrical equipment. They are required to read and interpret electrical, mechanical and architectural drawings and electrical code specifications to determine wiring layouts.

Pump Stations, Terminals

INSTRUMENTATION TECHNICIANS (NOC 2243)

Other Job Title: Industrial Instrument Technicians

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Instrumentation Technicians install and calibrate the various instruments and technology used to monitor and control the pipeline, pump stations and tanks during the construction and operation phases.

Pump Stations, Terminals

STRUCTURAL STEEL ERECTORS (NOC 7236)

Other Job Title: Structural Ironworkers

Essential Skills (Reading/Document Use/Numeracy): 3/3/3

Structural Steel Erectors, also called Structural Ironworkers, fabricate, erect, hoist, install, repair and service structural ironwork, precast concrete, concrete reinforcing materials and other metals used in the construction of buildings, piperacks, etc.

Reinforcing Ironworkers position and secure steel bars or metal mesh in concrete forms to reinforce concrete structures.

Pump Stations, Terminals

MILLWRIGHTS (NOC 7311)

Other Job Title: Industrial Mechanics

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Millwrights install, align and calibrate stationary and rotating industrial mechanical equipment such as valves, flow meters and pumps during the construction of pump stations and terminals. They read blueprints, diagrams and schematic drawings to determine work procedures.

Pump Stations, Terminals

INSULATORS (NOC 7293)

Essential Skills (Reading/Document Use/Numeracy): 4/3/4

Insulators apply insulation materials to tanks, piping, valves, equipment and other structures, to prevent or reduce the passage of heat, cold, sound or fire.

Pump Stations, Terminals

SHEET METAL WORKERS (NOC 7233)

Essential Skills (Reading/Document Use/Numeracy): 4/4/4

Sheet Metal Workers install sheet metal to insulate tanks, piping, valves, equipment and structures. They install metal cladding on buildings. They may need to work in confined spaces or at heights.

Pump Stations, Terminals



SPOTLIGHT: Apprenticeship

Apprenticeship is the most common way to become a tradesperson.

An apprenticeship is a combination of on-the-job training and classroom learning that leads to a trade credential – or “ticket.” Journey-certified trades workers oversee the work of apprentices, ensuring they receive practical, hands-on training that meets the needs of current and future employers. Once an individual has completed the apprenticeship and has received a ticket, the person is qualified to work in a skilled trade.

Apprenticeships and trades programs are regulated by provincial governments and may differ. The List of Compulsory and Optional Certification Trades in Alberta can be found here: http://tradesecrets.alberta.ca/SOURCES/PDFS/designated_trades_certification.pdf

Trades careers are regulated by the Industry Training Authority Act. Apprenticeship in BC helps individuals get a Certificate of Qualification (CoQ) which is accepted across BC. A list of BC's trades programs can be found here: <http://www.itabc.ca/discover-apprenticeship-programs/search-programs>

About 50 trades offer an Interprovincial (IP) Red Seal, which certifies workers across Canada.



TRUCK DRIVERS



Essential Skills (Reading/Document Use/Numeracy): 2/2/2

Transport Operators and Truck Drivers are responsible for moving supplies, equipment and people to and from construction sites. They operate various types of equipment and vehicles including water trucks, fuel trucks, gravel trucks, dump trucks and other specialized vehicles. They operate in a wide variety of weather, traffic and general road conditions. Workloads and schedules vary depending on the goods being transported and the distances being travelled, with consideration for regulatory constraints regarding hours of work.

Transport Operators and Truck Drivers need to be physically fit and have good vision. They require the ability to learn how to manoeuvre trucks in tight spaces and use on-board computer devices and other specialized equipment. They must load trucks to maximize the use of space, distribute weight accordingly and employ proper load securement procedures to ensure safety on the road. They conduct security checks and inspections enroute and, if necessary, make roadside adjustments and repairs. They must comply with National Safety Code provisions. A clean driver's abstract is required in addition to good paperwork skills in maintaining required log books.

Truck Drivers are able to remain alert and maintain a high level of concentration while driving safely and displaying courtesy on behalf of the Project. They have a customer service orientation and enjoy working with others. Truck Drivers remain calm in emergency situations and maintain good judgment while under pressure. Construction Safety Training System (CSTS) or Pipeline Construction Safety Training (PCST), Workplace Hazardous Materials Information System (WHMIS) and First Aid training are considered assets.

Typical Roles – Job titles generally reflect the types of trucks they operate.

FLAT DECK/LOWBED OPERATORS; WATER TRUCK, PARTS TRUCK & GRAVEL TRUCK DRIVERS (NOC 7511)

Appropriate Provincial Class Licensing is required (Generally Class 1 or 3 with an Air Brake endorsement; dependent on vehicle configuration); potentially requiring a Transportation of Dangerous Goods (TDG) Certification.

Pipeline, Pump Stations, Terminals

BUS DRIVERS (NOC 7511)

Provincial bus license applicable to the passenger configuration; First Aid.

Pipeline, Pump Stations, Terminals

FUEL TRUCK & LUBE TRUCK OPERATORS (NOC 7511)

Provincial Class 3 license with air endorsement and TDG certificate; Workplace Hazardous Material Information System (WHMIS) training for the materials being dispensed.

Pipeline, Pump Stations, Terminals

HYDROVAC TRUCK OPERATORS (NOC 7511)

Provincial Class 3 license with air endorsement and TDG certificate; specialized training in the operation and maintenance of the unit.

Pipeline, Pump Stations, Terminals

PICKER TRUCK OPERATORS (NOC 7371 / 8241)

Other Job Title: Boom Truck Drivers

Picker Truck Operators run hydraulic lifting arms used to move machinery, materials and other large objects. Requires Provincial Class 1 or 3 license with an Air Brake endorsement; potentially a TDG certificate; provincial hoisting tickets and in Alberta, must be a registered apprentice or journeyman. In BC, Picker Truck or Boom Truck Operators must be certified or registered for assessment by the British Columbia Association for Crane Safety (BCACS).

Pipeline, Pump Stations, Terminals

HEAVY EQUIPMENT OPERATORS



Essential Skills (Reading/Document Use/Numeracy): 3/3/3 • All Skilled Positions

Heavy Equipment Operators (HEOs) operate one or more types of heavy equipment including bulldozers, trackhoes, excavators, side booms, loaders and graders. This position is responsible to excavate, move, load and grade earth, rock, gravel and other materials during construction. HEOs may also be responsible for basic maintenance of the equipment.

Typical Roles – Job titles generally reflect the types of machines they operate.

BULLDOZER OPERATORS (NOC 7521)

Bulldozer Operators run crawler-tractors equipped with large blades for moving soils and obstacles and rippers for loosening hard terrain. They clear and level land on the pipeline right-of-way and push other equipment to provide traction. Bulldozer Operators require steep slope winching experience.

Pipeline, Pump Stations, Terminals

TRACKHOE OPERATORS (NOC 7521)

Other Job Titles: Trenching Machine Operators, Trench Excavators

Trackhoe Operators use a variety of attachments to dig trenches, load heavy materials, vibrate and break rock or concrete, back-fill excavations and scoop and dump materials.

Pipeline, Pump Stations, Terminals

GRADER OPERATORS (NOC 7521)

Grader Operators spread and level earth, sand, gravel and rock, and plow snow. They use controls to adjust the height and angle of grader blades.

Pipeline, Pump Stations, Terminals

FELLER BUNCHERS (NOC 7521)

Other Job Title: Mulcher Operators

Feller Bunchers run crawler equipment used for clearing and processing of trees on the pipeline right-of-way.

Pipeline, Pump Stations, Terminals

Other HEOs include Skidder Operators, Wood Processor Operators and Loader Operators. HEOs require technical training for specific equipment types. For most HEOs, many construction employers will assess an operator's competency prior to hire. HEOs need to be physically fit, have good vision and depth perception, quick reflexes and good hand-eye co-ordination. TDG certification, Construction Safety Training System (CSTS) or Pipeline Construction Safety Training (PCST), Workplace Hazardous Materials Information System (WHMIS) and First Aid training are considered assets. Excavator operators will require a Ground Disturbance course.

BENDING MACHINE OPERATORS (NOC 7521)

Bending Machine Operators run hydraulic pipe bender to fit the contours of the pipeline ditch and right-of-way.

Pipeline

SIDE-BOOM OPERATORS (NOC 7371)

Side-boom Operators run side-boom tractors using hydraulically operated booms and lifting tackle to lift and manoeuvre heavy items. Specialty skills will entail lifting and lowering the welded pipe into the trench as a concerted effort of a co-ordinated team.

Pipeline

PILEDRIVERS (NOC 7521)

Piledrivers construct and install deep piles and caisson foundations for the dock and any other marine installations.

Terminals

CRANE OPERATORS (NOC 7371)

Essential Skills (Reading/Document Use/Numeracy): 4/4/3

Crane Operators run mobile tower and boat/barge mounted cranes to lift, move, position or place equipment and materials. They may also operate pile driving cranes to drive pilings during the construction of terminals. Trade certification requirements differ depending on the type of crane being used.

Terminals

