

**PIPELINE SERVICE  
AND  
OILFIELD SERVICE**

Prepared for the  
Northern Labour Market Information Clearinghouse

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## **Pipeline Service and Oilfield Service**

The Clearinghouse Project is a consortium of northern Alberta colleges and the Northern Alberta Development Council. The focus of the project is to conduct research concerning labour market issues in the north.

The college participants in the Clearinghouse Project identified the investigation of a number of possible training issues in the pipeline industry as a priority. Specifically, the consultant was asked to examine:

- ❖ potential growth in the industry
- ❖ new activity that could result from pipeline rehabilitation
- ❖ types of services the industry requires
- ❖ types of training to meet the service needs
- ❖ current and future training demands

### **Methodology**

Websites posted by industry associations, government departments and individual companies were searched for relevant information. These websites yielded useful content and suggestions for informative personal interviews. Personal telephone interviews were conducted with representatives of small and large pipeline companies who provided information about the construction sector of the industry. A firm that specializes in tailor-made program design for pipeline operator companies outlined the kinds of training provided and a list of the occupations that have been involved in training.

Several building trades unions were contacted to gain an understanding of the extent of employment or unemployment in the industry. Three major industry associations also reported on current and future activity in pipeline construction.

Two representatives of the Energy and Utilities Board (EUB) commented on the current state of existing pipelines in the province. As well, they were able to provide information about activity that could result from pending applications for development.

### The Alberta Pipeline Industry

The pipeline industry is an important part of the Alberta economy. Currently, there are 300,000 kilometres of pipeline in the province (Appendix A). At the present time, there is one small pipeline project under construction in the north. The industry is awaiting a decision on the proposed MacKenzie Valley Pipeline that would be built between Inuvik and Fort St. John. The building of this line is viewed as a benefit for northern residents, particularly those north of the 60<sup>th</sup> parallel and those involved in exploration and production. As yet, there is no resolution to the debate about the merits of a MacKenzie Valley pipeline vs. an Alaskan line. Industry representatives estimate that any announcement will be four to five years in the future.

Pipeline construction is a highly labour intensive operation. The predominant employment in construction goes to four craft areas: plumber/pipefitters, crane and hoist operators, truckers/drivers and labourers. With two of the four crafts being compulsory trades, this workforce is dependent on the apprenticeship system.

The pipeline workforce is highly mobile because pipelines are scattered geographically across the country. For example, most of Alberta's experienced pipeline construction workers were in Nova Scotia for a part of the year 2000. A labour union representative indicated that "a real pipeliner owns the biggest fifth wheel in existence and has crossed the country at least three times in the past year". Pipeliners tend not to work in other construction sectors, although they will move between "large inch" and "small inch" projects. Approximately 95% of the "large inch" pipeline construction industry is unionized.

Pipelines are built in a short time frame using large crews. In the north, work needs to be completed before the spring thaw. Even in the case of major pipelines, the work is measured in months, not years.

The operations side of the pipeline industry is not labour intensive. The workforce is skilled and tends to be stable. Little turnover was reported. Occupations in pipeline operations include: oil and gas field operators, gas plant operators, pipeline control centre operators, pipeline field operators, millwrights, heavy duty mechanics, diesel and automotive mechanics, electricians and instrument mechanics. There is some transferability between oil and gas field operations and pipeline operations.

Training in pipeline construction occurs within the usual apprenticeship training programs for the two designated trades. The Alberta Labourers Training Fund has a pipeline course available and has offered it on several occasions. This training is designed to be offered on site if required. The Teamsters' Union also provides training to its pipeline workers. Companies with crane and hoist equipment have partnered with labour unions and the Alberta Apprenticeship program to offer on-site training for crane and hoist workers, as well.

In pipeline operations, five of the main occupations are designated trades. The remaining occupations often require customized training for specific pipeline systems. While there are core skills in each of the occupations that are common across the industry, much of the specialized training addresses the proprietary components of the specific pipeline.

There are also maintenance crews associated with each pipeline. Maintenance and remediation require very few workers. The larger pipelines often use a contract company for this work and smaller pipeline companies most often use existing staff.

One of the questions that prompted the request for this report is the soundness and safety of existing pipelines in the province. A representative of the EUB was contacted to obtain further information on pipeline integrity.

Each year, the EUB identifies a number of kilometres of pipelines that could pose some risk. Inspections of the identified lengths are then conducted and the results are reported. In the case of the October 2000 statement, the report referred to two-thirds of those inspected kilometres that violated safety regulations.

The EUB representative was able to clarify the October 2000 EUB statement that two-thirds of all pipelines were in violation of safety regulations. He indicated that a large number of individuals had misinterpreted the report.

Very few of the violations were considered serious. Many of them were situations easily remedied by, for example, replacing standard warning signs posted along the pipeline.

### Implications of the Interviews

Alberta currently has a large number of pipeline construction workers, many of whom are unemployed. For example, the Operating Engineers, Local 955, reported up to 500 experienced pipeline construction workers out of work. These workers prefer to work on “large inch” projects, but will work “small inch” projects if they have been unemployed for some time. Depending on the period of unemployment they will also work on non-unionized projects.

The workforce in pipeline operations is stable and demonstrates a low rate of turnover. Thus the demand for training for new entrants to this sector of the industry is low.

Many of the occupations in pipeline operations are designated trades. Additional skills in the sector include basic instrumentation and maintenance of pumps, compressors and valves. Also, the larger pipelines have technology that is unique to that pipeline, requiring specialized training for operators.

One respondent indicated that northern residents could enhance their employment prospects by improving literacy and computer skills, and by participating in general academic upgrading. Another respondent reported hiring local residents who were experienced equipment operators when they were available.

### Pipeline Training Currently Available

The pipeline construction sector is well served through the provinces' apprenticeship systems for the participating designated tradespeople. The remaining workforce is predominantly unionized and the affected union organizations have a history of providing training to their pipeline worker members. Both the Operating Engineers (crane and hoist operators) and the Labourers Union have the capability of offering pipeline construction training close to the work.

The Christian Labour Association of Canada (CLAC) reported training at their Edmonton facility for labourers, backhoe operators and sidebar operators. The training was largely safety related.

Pipeline maintenance workers also have access to training. Millwrights, Heavy Equipment Technicians, Millwrights and Automotive Technicians are trained through the apprenticeship system.

Private sector firms offer training for pipeline operators in their work with gathering systems, including operation and maintenance of pumps, compressors, tanks and valves. One such firm has web modules available for purchase. The larger pipeline operations often require the development and delivery of customized training specifically designed for their installations. There is some limited market for this kind of tailor-made training.

## Observations

The individuals from the pipeline industry, both construction and operations, were consistent in their views of labour force requirements. The pipeline construction workforce follows pipeline work nationally, as projects occur. The mobility of this highly unionized sector is reflected in national union/employer agreements.

Currently, the unemployment rate of pipeline construction workers is high. Industry spokesmen indicated that the entire sector is anxiously awaiting an announcement about the MacKenzie Valley project, which would provide up to two years of work for many experienced workers.

The operations side of the industry has a relatively stable workforce. Skill development is managed through the apprenticeship system and in-house training. However, there is some requirement for the design and delivery of customized training for the larger pipeline companies.

Both construction and operations sectors utilize the apprenticeship system. The pipeline industry is, along with other industries, concerned about the aging of their skilled workforce. One large construction company indicated that the average age of their tradesmen was 42. While this is lower than some other industries, the lack of major projects means that no new apprentices can be hired.

## A Note About Oilfield Service

The Petroleum Services Association of Canada (PSAC) has completed the occupational analyses of the important occupations in the industry. In addition, the organization has identified competency standards that should result from training for each occupation. The standards were developed and ratified by the industry nationally. These standards are listed on the PSAC website found at: <http://www.pfac.ca/competency/directory.html>



The training branch of PSAC has expressed an interest in working with public colleges to develop training programs for the oil service industry. It is expected that colleges will use the competency standards as a basis on which the course development occurs.

**Length of Pipelines in Alberta  
Under EUB Jurisdiction**

<b>Yearly Lengths (km)</b>							
<b>Type of Pipeline</b>	Crude Oil	Natural Gas	Sour Gas	Water	Multiphase	Others	Total
<b>Up to 1988</b>	10,940	83,916	4,707	10,874	25,926	13,249	149,612
<b>1989</b>	316	4,136	770	436	1,577	697	7,932
<b>1990</b>	180	5,172	423	575	1,141	938	8,429
<b>1991</b>	578	3,763	261	548	1,155	374	6,679
<b>1992</b>	538	3,549	185	475	1,159	381	6,287
<b>1993</b>	454	6,265	390	634	1,864	703	10,310
<b>1994</b>	141	3,831	185	464	1,210	232	6,063
<b>1995</b>	604	10,967	762	946	2,277	771	16,327
<b>1996</b>	418	7,683	1,188	655	1,979	900	12,823
<b>1997</b>	819	9,323	1,154	787	2,183	1,897	16,163
<b>1998</b>	1,146	12,933	2,392	982	2,757	1,401	21,611
<b>1999</b>	712	8,871	1,394	501	1,207	1,610	14,295
							276,531
These numbers were calculated by adding all statuses (operating, permitted, abandoned, discontinued, and suspended) for all types.							

**Sources**

[www.pipeline.ca/](http://www.pipeline.ca/)

[www.cepa.com](http://www.cepa.com)

[www.capp.ca/](http://www.capp.ca/)

[www.clockspring.com/](http://www.clockspring.com/)

[www.eub.gov.ab.ca/](http://www.eub.gov.ab.ca/)

[www.psac.ca/competency/directory.html](http://www.psac.ca/competency/directory.html)

Edmonton Journal, U-turn on the Tundra, March 4, 2001

Edmonton Journal, *N.W.T. Ready to Push for All-Canadian Pipeline*,  
April 1, 2001

## Contacts

Name	Organization	Telephone
Paul Bokowski .....	Operating Engineers, Local 955.....	(780) 483 - 0955
Garnet Corbin .....	PeBen Industries .....	(780) 440 - 4425
Jay Corder .....	Pipeline Association of Canada.....	(905) 847 - 9383
Bill Emerzaul .....	AltaGas .....	(780) 980 - 7320
Allan Fjell .....	Ledcor Industries.....	(780) 462 - 4211
Greg Harris.....	Labourers International .....	(604) 951 - 8877
	Union of North America	
Jean McGregor.....	Human.....	(780) 463 - 3909
	Development Consultants	
Lyle Nash .....	Marine Pipeline .....	(800) 260 - 7788
General Number .....	Christian Labour.....	(780) 454 - 6181
	Association of Canada	
General Number .....	Petroleum Industry .....	(780) 955 - 7770
	Training Services	
Ken Sharp .....	Energy and Utilities Board .....	(403) 297 - 8133
Roger Soucy .....	Petroleum Services .....	(403) 264 - 4195
	Association of Canada	
Dan Tarneke .....	Field Surveillance, .....	(403) 297 - 8186
	Energy and Utilities Board	