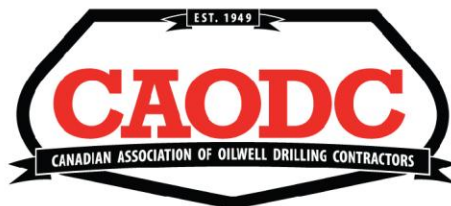




CANADIAN ASSOCIATION OF OILWELL DRILLING CONTRACTORS

The unified voice of the Canadian drilling and service rig industry



OVERVIEW

- ▶ Who is CAODC?
- ▶ Industry Standards
 - CAODC Recommended Practices
 - Rig Technician
 - Service Rig Competency
- ▶ Enform
 - Industry Recommended Practices



CAODC

- ▶ History
- ▶ Mandate



CAODC

Mission

CAODC is the unified voice of the Canadian drilling and service rig industry. This industry association promotes safer and more efficient operations through advocacy, communications and needed products and services.

Vision

To be a leading advocate for the Canadian petroleum industry, promoting the value of a strong drilling and service rig sector.

Guiding Principles

CAODC is committed to:

- Promoting a culture of safety excellence in the industry.
- Acting in the best interests of its member companies, their employees and the industry as a whole.
- Continuing a strong tradition of leadership and cooperation.

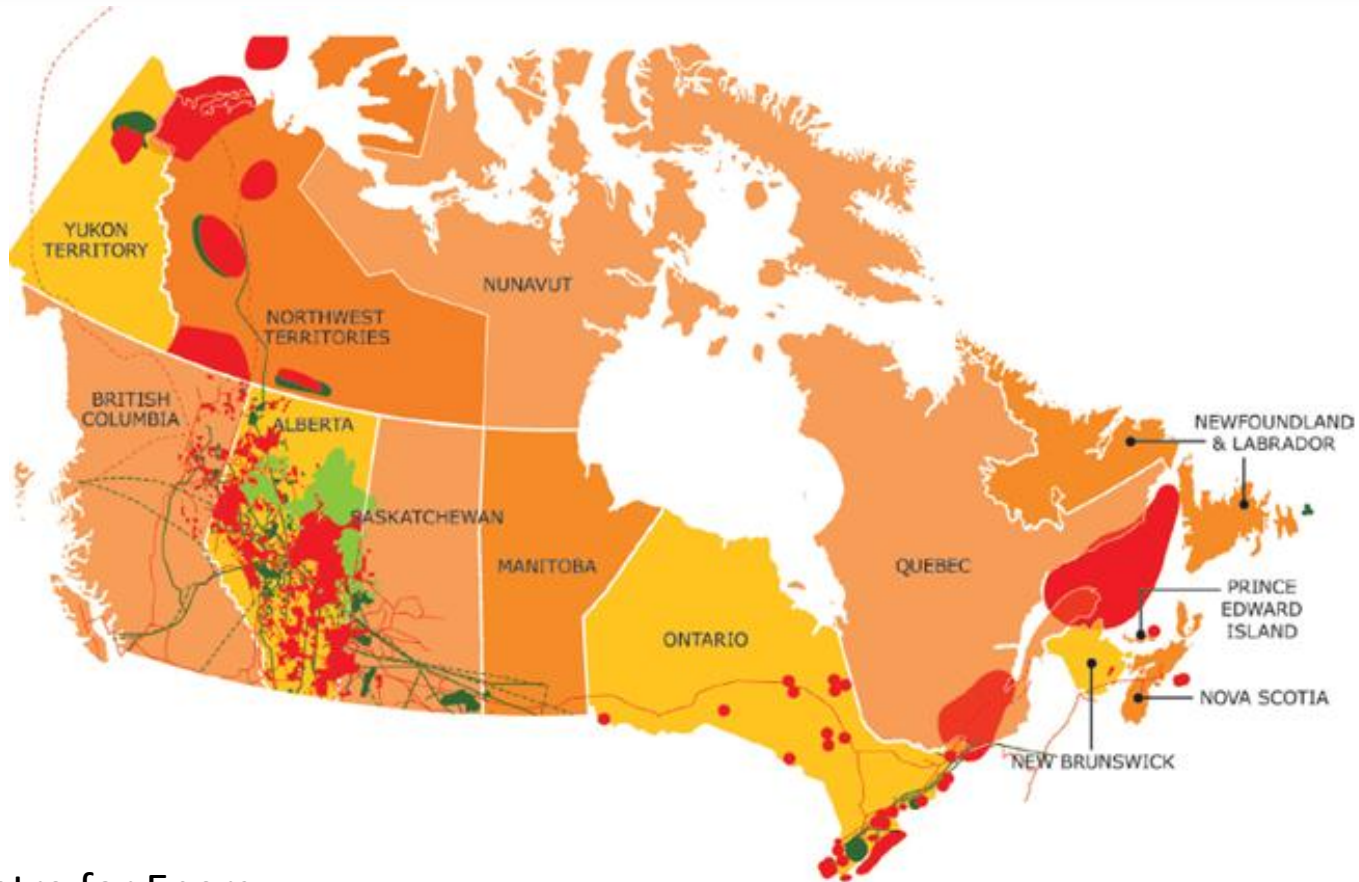


CAODC

- ▶ Charts – rig count, well count, etc.
 - Seasonality, cyclicalality
- ▶ WCSB
- ▶ Forecast
- ▶ Committees (HSE, S&T, E&T)



WESTERN CANADIAN SEDIMENTARY BASIN



Source: Centre for Energy



CAODC RECOMMENDED PRACTICES

- ▶ Specific to drilling and service rig equipment
- ▶ Standard for inspections and maintenance of major equipment components
 - Masts, Substructures, Overhead Equipment, BOPs, Tongs
- ▶ Cooperative industry project – harmonize standards and prevent government from imposing prescriptive regulations
- ▶ In place since mid-80s



CAODC RECOMMENDED PRACTICES

Drilling Rig Recommended Practices

RP 1.0 - Drilling Rigs Mast Inspection and Certification

RP 1.0A - Addendum for Drilling Rigs Substructure Inspection and Certification

RP 2.0 - Drilling Rigs Overhead Equipment Inspection and Certification

RP 5.0 - Manual Rotary Tongs for Drilling & Service Rig Applications Inspection and Certification

RP 6.0 - Drilling Blowout Preventer Inspection and Certification

RP 8.0 - Land Based Drilling Rigs Doghouse Electrical Classification

RP 9.0 - Minimum Standards for Derrick Egress

Service Rig Recommended Practices

RP 3.0 - Service Rigs Inspection and Certification of Masts

RP 3.0A - Service Rigs Inspection & Certification of Substructures, Drawworks & Carriers

RP 4.0 - Service Rigs Overhead Equipment Inspection & Certification

RP 5.0 - Manual Rotary Tongs for Drilling & Service Rig Applications Inspection and Certification

RP 7.0 - Service Rigs Well Servicing Blowout Preventer Inspection and Certification

RP 9.0 - Minimum Standards for Derrick Egress



ENFORM

- ▶ Upstream industry's safety association
- ▶ By industry, For industry
- ▶ Industry partnering to create safety guidelines and training courses – regulatory bodies included on committees



ENFORM (CONT'D)

- ▶ **DACC – Drilling and Completions Committee**
 - Responsible for developing technical recommended practices, where the objectives include cost efficiencies, technical optimization, productivity, safety and environmental performance
 - Joint committee with all upstream associations and some regulators
- ▶ **IRPs – *Industry* Recommended Practices**
 - Technical focus
 - Updated every 5 years
 - Free for download and use across industry



INDUSTRY RECOMMENDED PRACTICES (IRP)

- IRP 1 - Critical Sour Drilling
- IRP 2 - Completing and Servicing Critical Sour Wells
- IRP 3 - In Situ Heavy Oil Operations
- IRP 4 - Well Testing and Fluid Handling
- IRP 5 - Minimum Wellhead Requirements
- IRP 6 - Critical Sour Underbalanced Drilling
- IRP 7 - Standards for Wellsite Supervision of Drilling, Completion and Workovers
- IRP 8 - Pumping of Flammable Fluids
- IRP 13 - Slickline Operations
- IRP 14 - Non-Water Based Drilling Fluids
- IRP 15 - Snubbing Operations
- IRP 20 - Wellsite Design Spacing Recommendations
- IRP 21 - Coiled Tubing Operations
- IRP 22 - Underbalanced and Managed Pressure Drilling Operations Using Jointed Pipe
- IRP 24 - Fracture Stimulation: Interwellbore Communication
- IRP 25 - Primary and Remedial Cementing Guidelines



EARNING A JOURNEYMAN ON A CANADIAN RIG

THE RIG TECH TRADE HAS
THREE PERIODS

FOR EACH PERIOD AN APPRENTICE:
LOGS 1500 HOURS OF ON-THE-JOB
TRAINING &
COMPLETES A 4-WEEK TECHNICAL
TRAINING COURSE

- ▶ Canada is the only country to offer a full journeymen certificate (on-the-job training and technical training) to crewmembers on land-based rigs. (Rig Technician)



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EARNING A JOURNEYMAN ON A CANADIAN RIG

- ▶ Apprenticeships are a partnership between industry and provincial governments.
- ▶ The **provinces**:
 - oversee apprenticeship training as an extension of their education mandate.
 - arrange for technical training at post-secondary schools.
 - administer applications and certifications.



EARNING A JOURNEYMAN ON A CANADIAN RIG

- ▶ Apprenticeships are a partnership between industry and provincial governments.
- ▶ The **industry**:
 - determines course content and training standards.
 - each trade is governed by a committee of industry representatives.
 - These committees are made up of:
 - industry management
 - journeymen directly employed in the trade.



EARNING A JOURNEYMAN ON A CANADIAN RIG

- ▶ CAODC was the primary industry contact for the provinces and led the development of a trade that would be consistent in all jurisdictions.
- ▶ However, this structure assists industries in developing training standards even without organizing bodies (trade associations or unions).

THE RIG TECHNICIAN TRADE IS UNIQUE IN THAT THE
PROGRAM CONTENT & REQUIREMENTS ARE
THE SAME ACROSS CANADA*



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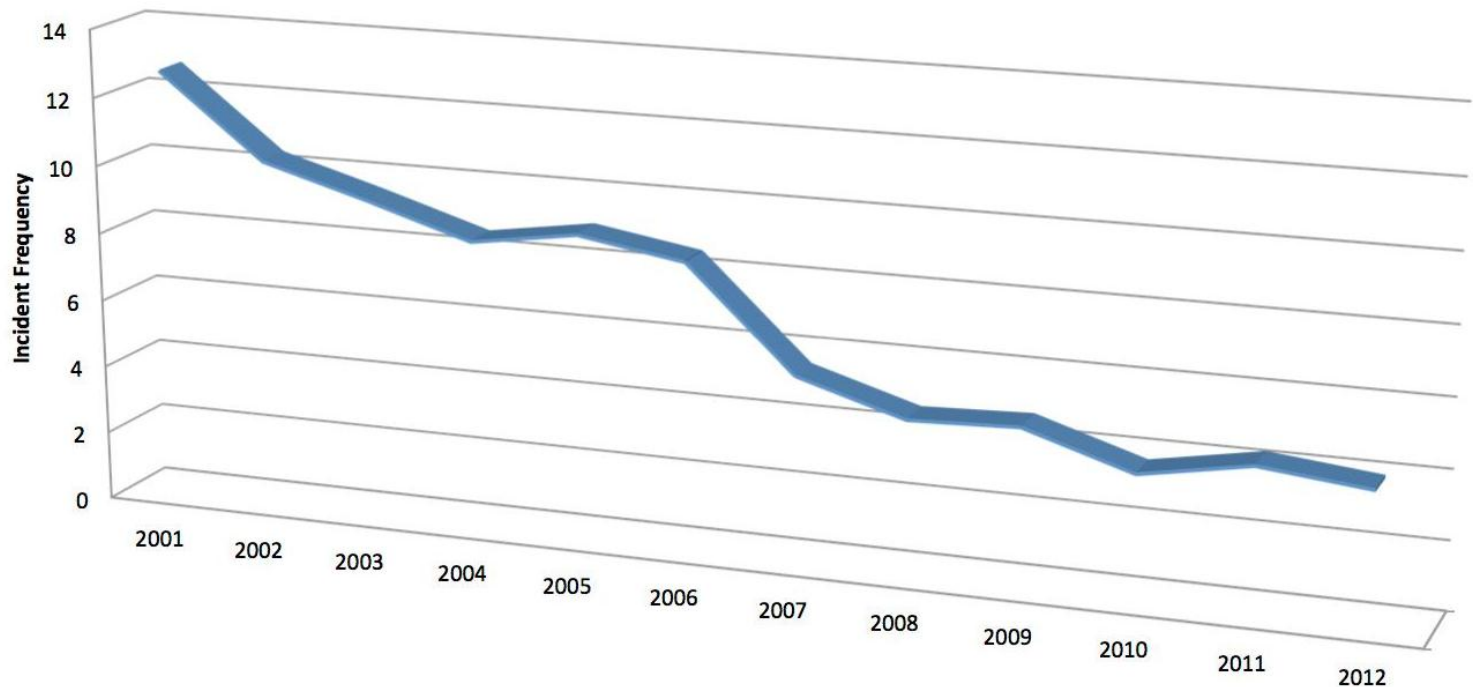
A TRAINING INFRASTRUCTURE FOR OUR WORKFORCE

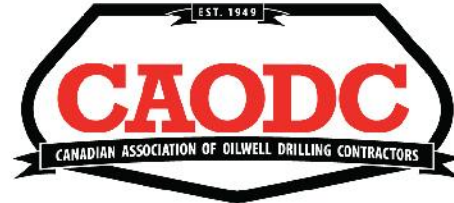
- ▶ These training requirements are CAODC-driven resources for industry to leverage going forward.
- ▶ These resources will assist industry in training a new generation of drillers.
- ▶ Today Canada has over:
 - 4000 Rig Technician journeymen.
 - 3000 Rig Technician apprentices.



A TRAINING INFRASTRUCTURE FOR OUR WORKFORCE

- ▶ The frequency of incidents on drilling rigs has been cut down to 1/3 what the rate was in 2001.





**CANADIAN ASSOCIATION
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CONTRACTORS**

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