Canadian Crude Oil Quality Technical Association

Past, Present and Future

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Overview

• Introduction to the CCQTA
  – History
  – Member companies
  – Funded projects

• New things, industry challenges

• Future direction
CCQTA Introduction

- **Canadian Crude Quality Technical Association**
- Founded in 1996, the CCQTA is a registered not-for-profit Association in Alberta, Canada formed to:
  - Facilitate the resolution of common **crude oil quality issues** through **collaborative research**
  - Develop and run “**industry research projects**”
  - Improve industry knowledge and awareness of crude oil quality

Website: www.ccqta.com
CCQTA Introduction

• 83 member companies (October 2014)
  – Membership increasing
    • Canadian, US and international

• Representing 6 industry sectors
  – Oil producers
  – Oil refiners
  – Transportation (pipelines)
  – Chemical additive suppliers
  – Canadian government agencies
  – Consultants, service providers
## Member Companies

### Producers
- Brion Energy
- Cenovus Energy
- CNRL
- Conacher Oil and Gas Limited
- ConocoPhillips Canada
- Crescent Point Energy Corp.
- Devon Energy Corporation
- Gibson Energy Ltd
- Japan Canada Oilsands
- Keyera Energy
- Lericina Energy Ltd.
- Marathon Oil Canada Corp
- MEG Energy
- Nexen Inc.
- Statoil ASA
- Syncrude
- Teck Energy
- Total E&P Canada Ltd.

### Refiners
- BP
- Calumet Specialties Corp
- Chevron Canada Limited
- Ciglo Petroleum
- Consumer Co-operative Refiners Ltd
- Dow Chemical Canada ULC
- ExxonMobil
- Flint Hills Resources
- Husky Energy
- Imperial Oil Limited
- Irving Oil, MCC
- Marathon Petroleum Company LLC
- National Cooperative Refinery Association
- Nova Corporation
- Petrobras
- Phillips 66
- Shell Canada
- Suncor Energy
- Tesoro Corporation
- United Refining Company
- Valero Energy Corporation

### Pipeliners
- Enbridge Pipelines Inc.
- Inter Pipeline Ltd
- Kinder Morgan Canada
- Pembina Pipeline Corporation
- Plains Midstream Canada
- Shell Pipeline Company LP
- Trans Canada Pipelines Limited
- Tundra Energy Marketing ltd

18 Producers  21 Refiners  8 Pipeline companies
Member Companies

**Additive Suppliers**
- Athlon Solutions
- Baker Hughes
- Clariant
- Enerchem International Inc.
- GE Water & Process Technologies
- Halliburton Energy Services
- Nalco Champion

**Government Agencies**
- Alberta Department of Energy
- Alberta Innovates - Technology Futures
- CanmetENERGY
- Transport Canada

**Others**
- AGAT Laboratories
- Cameron Process Systems
- Cerno Control Systems
- Colpat Pipeline Consulting Inc.
- Crude Quality Inc.
- Exova
- GWB Process Consulting
- Homefield Process Consulting Services
- Intertek Services
- KBW Process Consulting
- Lee & Doma Energy Group
- LENEF Consulting (1994) Limited
- Maxxam Analytics Inc.
- Newalta Corporation
- Omnicon Consultants Inc.
- PAC, L.P.
- Pall Filters
- Parkes Scientific
- Petrolab Company
- Rhodey & Associates Inc.
- SGS Canada Inc.
- Sun West Environmental
- Upgrading Solutions
- Wilson Analytical
- X-Ray Optical Systems

7 chemical additive suppliers
4 Canadian government agencies

25 consultants, service providers
Projects

- Any CCQTA members can propose a project
- Members choose what projects they wish to participate in
- Members are then invoiced for participation costs
  - A catch up fee (previous year’s costs) may apply
  - Work In Kind (WIK) agreements available
- Some projects may be directly funded by the CCQTA
  - Executive determination
    - Crude Quality Tutorial
Member Funded Projects

1. TAN Phase IV  
   TAN = Total Acid Number  
   Testing methods. Correlation of TAN to oil corrosivity.

2. Oilsands Bitumen Processability – Phase III  
   Refinery focused, related to bitumen quality.

3. Heavy Oil Compatibility – Phase II  
   Blending and mixing studies.

4. Phosphorus in Crude

5. Condensate Quality – Phase II

6. H₂S PVT – Phase II

7. Emulsion Characterization

8. Organic Chlorides

9. Bitumen Dewatering and Volume Discrepancy

10. TVP/RVP

11. H₂S PVT Project

12. Pipeline Corrosion

Currently have 53 companies participating in 12 funded projects
Recent Updates

- More Participation from Government Agencies
  - Alberta Department of Energy participating in 6 CCQTA projects
  - Transport Canada participating in 2 projects
  - Canmet ENERGY is a subcontractor to 6 projects

- H₂S in crude, Vapour Pressure of crude
  - H₂S PVT & TVP/RVP projects are of great interest

- Response to Directive 31 (Transport Canada)
  - Rail/truck shipments of crude oil

Canadian and US Regulatory agencies:
- Actively seeking input/information for crude oil related to H₂S and Transportation of Dangerous Goods (TDG) regulations
Upstream vs Downstream

• Crude Oil Production Quality
  → Heavier feed (bitumen blends)
  → Lighter feed (Shale plays)
  → Changing contaminants
  → Production Process developments
  → Fractionating additives
  → Complex crude blends
  → Diluent variability

• Refinery Processing Demands
  → Higher throughputs
  → Longer run lengths
  → More complex/sensitive units
  → Tighter Refined product specifications
  → Seeking more predictability
  → More environmental pressure

Transportation

CCQTA facilitates technical analysis and understanding
Forward Looking

• Organization sustainability
  – Moving toward a Governance Board Model

• Reviewing Membership structure
  – Fees to allow access to all CCQTA projects
  – Will impact to membership structure
    • Need to accommodate large and small participants

• Acknowledgement that our organization is getting some level of attention in the media
Governance

• Providing the framework (where is the association going?)

• Good governance involves:
  – Vision, Values and Vigilance
  – Participation... involving key stakeholders in planning
  – Destination, Direction and Decisions... roadmap
  – Transparency
  – Resources
  – Monitoring Performance
  – Accountability

• Management
  – Implementing the framework (steer the ship)
Governance

• Types of Boards:
  – Working Board
    • Elected/and or volunteered
    • Staff drawn from the board members
    • Boards do most of the work themselves
  – Management Board
    • Board members have limited staff resources
    • “Hands on” managers and expected to do most of the work themselves
  – Governing Board
    • Have “hired staff” to do the work
    • Limited number of meetings
    • Responsibility is to set direction and planning
  • CCQTA is moving toward a “governance” board model
Wrap Up

• CCQTA membership is strong and growing
• Association need to plan for future sustainability
• Organization and structure is under review
  – Making plans to adjust framework
• Interest in the implications for Canadian industry growth is increasing
  – Role in industry for guidance on
    • Development and application proper quality testing methods
• Challenges handling media interest
  – Not “under the radar” anymore
CCQTA – Learn More

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