The Canadian Crude Quality Technical Association membership consists of companies from multiple segments of the Canadian oil industry. The Association is established with the following educational and scientific objectives:

- To facilitate communications among industry stakeholders
- To provide a forum for the presentation and consideration of proposals for industry projects related to any aspect of crude oil quality.
- To improve industry knowledge and awareness of crude oil quality through the cooperative exchange of technical information among industry sectors.
CCQTA Background

• CCQTA does not typically fund projects, but acts as a facilitator for projects
  – Provides meeting venues, phone and web-conferencing support, and third party accounting to project groups
• CCQTA currently has 60 member companies
Active Projects

- Condensate Quality
- Iron Fouling
- NGL Contamination
- Oilsands Bitumen Processability
- Phosphorus in Crude Oil
- Fluorocarbons in Crude
Project Proposals

- On-line Contaminant Monitoring
- TAN Project – Phase IV
- Measurement of H2S in Crude
ACTIVE PROJECTS
Condensate Quality Project

This project is focused on understanding potential contamination sources in condensate streams

– Presently working to identify the nature of elevated particulates in the CRW feeder streams and the source of these particulates
Condensate Quality Project
Participants

- ARC - in kind
- Keyera
- Provident
- Devon
- Encana
- Shell Canada
- Imperial Oil
- Shell US Pipelines
- ConocoPhillips
Iron Fouling Project

This project is conducting an investigation of the role of iron in Canadian crude oils and condensates as an emulsion stabilizer, a process foulant and a process contaminant.

– Presently testing cat feed and produced crude emulsions for iron based/related contaminants.
Iron Fouling Project Participants

- BP
- ConocoPhillips
- Flint Hills Resources
- CITGO
- NCUT
- Imperial Oil Limited
- Maxxam – in kind
- Nalco
- NCRA
- Chevron Canada
- Encana
- Grace Davison
- Suncor
- ARC – in kind
The project has examined the source(s) of fC₄ contamination and is now looking into the nature of reboiler foulant common to several NGL fractionation plants. Presently:

- Testing of NGL feed
- Preparing Final Report

Project is near completion
NGL Contamination Participants

- ARC - in kind
- BP
- Keyera
- Maxxam - in kind
- Pall Filters - in kind
- Shell
- Alberta Envirofuels
- Dow Chemical
- Imperial Oil
- Nova Corporation
- Provident
- ConocoPhillips
Oilsands Bitumen Processability

This project examines the potential refinery operability issues associated with processing dilbits/synbits

- Presently finalizing properties and contaminant testing.
- Completing preliminary coking and fouling studies
Oilsands Bitumen Processability
Project Participants

- BP
- ConocoPhillips
- NCRA
- CITGO
- Shell
- MEG Energy
- Maxxam
- BakerPetrolite
- Encana
- NCUT
- Suncor
- Marathon
- Devon
- Total
- Champion
- ARC
Phosphorus in Crude Oil

Project focused on eliminating refinery fouling associated with the presence of volatile phosphorus in crude.

- Presently monitoring the effects of alternate (new) chemistries combined with the imposition of a spec in Canadian crude
- Investigating the “possible migration” of the phosphorus issue to other streams (e.g. Condensate, Heavy Oil)
Phosphorus in Crude Oil
Participants

- BP
- Chevron Canada
- Clearwater Inc.
- Enerchem
- Imperial Oil Limited
- New Alta
- Total
- TESORO
- CCS Energy
- Gibsons
- ConocoPhillips
- Halliburton
- Maxxam Analytics
- Suncor
- BJ Services
- CITGO
Fluorocarbons in Crude Oil

The project is examining the potential refinery impact of fluorocarbon foaming agent usage in well stimulation/fracturing

- Currently operating with limited start-up funding to allow for an initial assessment of the impact of fluorine based chemistries
- Participation is open to all interested CCQTA members
On-line Contaminant Monitoring

- This project proposes to employ existing instrumentation to undertake on-line monitoring of crude oil contamination
  - Currently, Nuclear Magnetic Resonance (NMR), Laser-Induced Breakdown Spectroscopy (LIBS), and Electron Spin Resonance (ESR) are being considered as possible technologies
  - Samples are to be provided to equipment manufacturers to assess method capabilities
TAN Project – Phase IV

- Two project directions are being considered
  1. More detailed corrosion work with bitumen gas oils
  2. Impact on blending on projected corrosion rates.
- Project scope is to be finalized in December.
  Items under considerations include
  1. higher shear rates than Phase III, targeting simulated pipe flow rates of 15 – 20 fps
TAN Project – Phase IV

2. Reduced sample residence time to minimize decarboxylation

3. Speciation of both sulphur and naphthenic acids

4. Investigation of degradation/decarboxylation products and their role on corrosion

5. Additive impact testing

6. Corrosion assessment of crude blending
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