



# Canadian Heavy Crude Compatibility/Stability Study Project Proposal

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# Heavy Crude Compatibility/Stability Study Project Proposal

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- **Project Overview**
- **Project Objectives**
- **Proposed Tasks**
  - Phase 1
  - Phase 2
  - Phase 3
- **Outcome**



# Heavy Crude Compatibility/Stability Study Project Overview

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- Anytime two or more crudes are blended together some incompatibility and/or instability may occur.
- Light crude production ↓ Heavy Crude ↑
- Incompatibility/instability can impact
  - Storage tanks, pipelines, desalter operation, process equipment fouling, process unit corrosion
- Impact of blending newer crudes (dilbits/synbits) with older conventional crudes should be better understood



# Heavy Crude Compatibility/Stability Study Project Objectives

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Develop an understanding of:

- Upper limit of synbit/dilbit blending with conventional crudes at the refinery
- Identify list of stable/unstable crudes with Canadian heavies
- Determine blending sequences when processing multiple crudes
  - Incompatibility issues occur downstream of charge pumps! (i.e. desalters)
- Quantify impact of instability/incompatibility on transportation/desalting/refinery processing





# Heavy Crude Compatibility/Stability Study Proposed Task

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- **PHASE - I:**

- Selection of conventional crude oils and Canadian heavy crude for benchmarking
  - *e.g., bench mark conventional crude oils and typical Canadian heavy crude*



- **PHASE - II:**

- Selection/determination of compatibility/stability methods
  - *Wiehe's compatibility model, Shell's stability reserve, Separability Number (ASTM D 7601), other*





# Heavy Crude Compatibility/Stability Study Proposed Task

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- **PHASE - III:**
  - Execution of compatibility/stability tests
    - 🔥 Sludge and Sediment formation (*e.g., hot filtration*)
    - 🔥 Fouling propensity (*e.g., Alcor fouling test*)
    - 🔥 Asphaltene Stability/compatibility tests (*e.g., P-value, or SN/IN, etc*)
    - 🔥 Asphaltene particle content (*e.g., microscopy*)
    - 🔥 Wax formation/separation (*e.g., cold filter plugging*)
    - 🔥 Compatibility spot tests (*e.g., Shell method*)



# Heavy Crude Compatibility/Stability Study Outcome

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Reporting and knowledge sharing with oil producers and refineries for acceptance of Canadian heavy crude / heavy synthetic blends



- If you are interested please contact:

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