Cetane Performance and Chemistry Comparing Conventional Fuels and Fuels Derived from Heavy Crude Sources

Bruce Bunting, Sam Lewis, John Storey

Tom Gallant and Jim Franz

Craig Fairbridge

OAK RIDGE NATIONAL LABORATORY
U. S. DEPARTMENT OF ENERGY

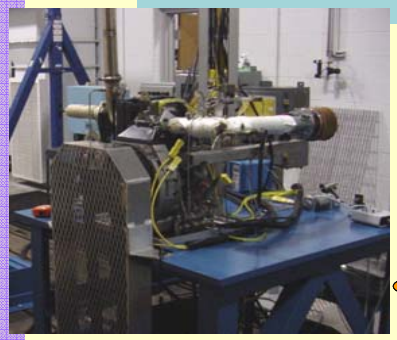
Pacific Northwest
National Laboratory

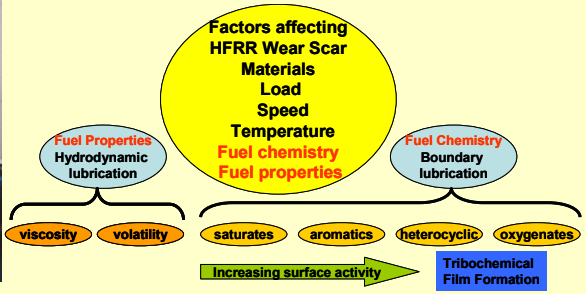
POSTER P-25

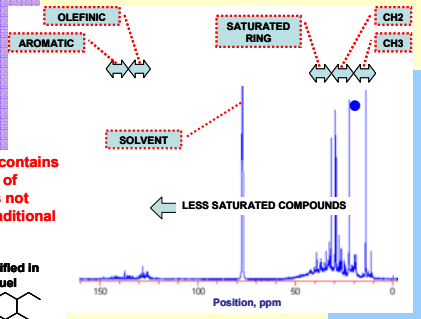
CETANE PERFORMANCE AND CHEMISTRY COMPARING CONVENTIONAL FUELS AND FUELS DERIVED FROM HEAVY CRUDE SOURCES

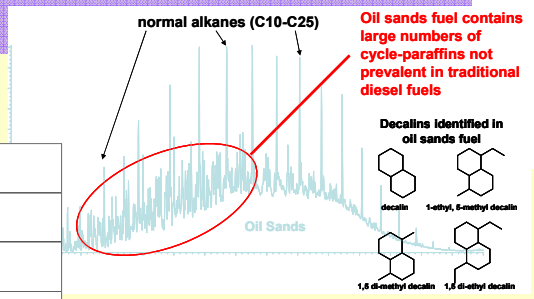
- **Oil sands derived fuels can have different chemistry than conventional crude fuels**
- New engines, emissions controls, and combustion strategies may provide an opportunity for fuel optimization or change
- Our project, an open collaboration between ORNL, NCUT, and PNNL, plans to:
  - Improve characterization and understanding of new blendstocks and fuels
  - Determine lubricity and HCCI effects of new fuel chemistries
  - Help ensure compatibility of future fuels and future engines

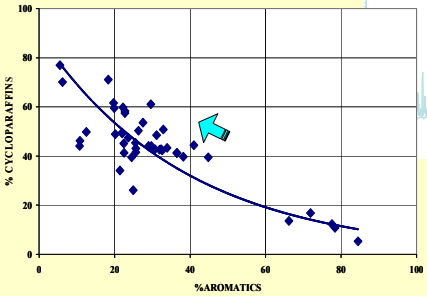
- **Canada currently supplies 15% of US crude oil and refined petroleum products**
- Canada oil sands hold 175 billion barrels of recoverable bitumen derived crude (reserves second only to Saudi Arabia)
  - Current production is greater than 1 million barrels per day











STOP BY POSTER P-25

- Stump the experts about NMR, GCMS, HCCI, and lubricity
- Learn about fuel chemistry
- Share fuel experiences
- Provide input and suggestions