

# **Crude Oil Quality Issues from the Refining Side**

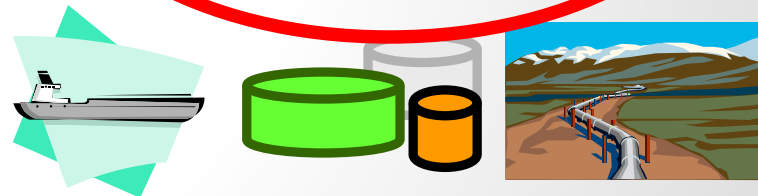
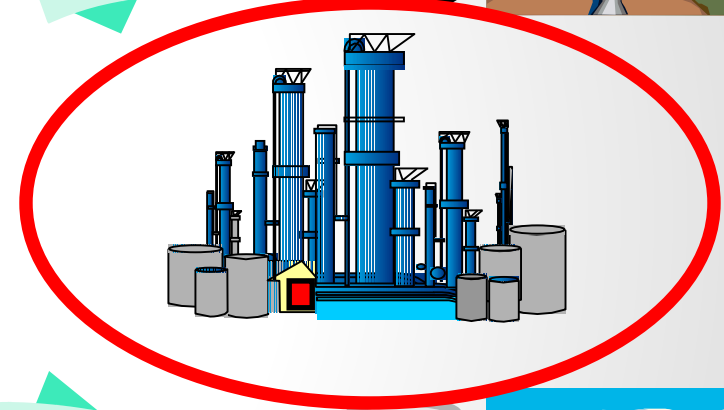
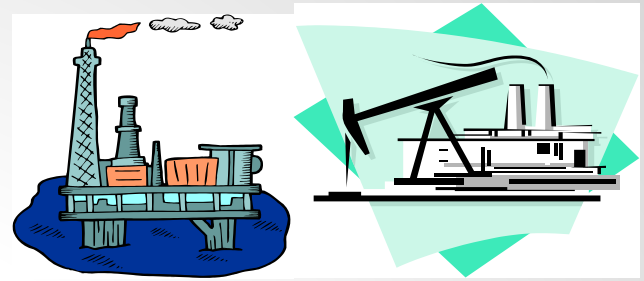
Crude Oil Quality Association  
March 3, 2016  
San Antonio, Texas



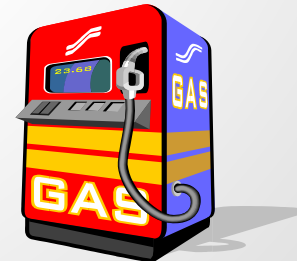
# AFPM Represents:

- U.S. petroleum refiners
- U.S. petrochemical producers
- Therefore, it is a:
  - Domestic organization
  - Downstream organization
  - Manufacturing organization

# AFPM Represents:



## Downstream sector





# AFPM Represents:

- 52 US petroleum refiners
- 38 US refiners are AFPM members
- AFPM members operate 98.2% of US capacity
  - Smallest member – 7,500 bpd capacity
  - Largest member – 2,110,000 bpd capacity



# Description of quality issues

- Refiners have been experiencing problems with the quality of crude oils delivered from Cushing
- What do refiners mean by “quality”?

# Description of quality issues

- Define “quality”
  - Meets specifications
    - Commercial specifications such as WTI
  - Meets expectations
    - Consistency in non-specified properties
      - Distillation
      - Metals
      - Acid number
      - Resid content



# Description of quality issues

- Blended crudes are more prevalent
  - Which conform to sulfur and gravity specs
  - Which may have significant variability in other critical properties

# Effects on refineries

- Effects of crude variability
  - Crude oil value - the value of the delivered crude oil depends on non-specified properties
    - Yields
    - Refinery configuration/resid yield
    - Refinery configuration/constraints



# Effects on refineries

- Effects of crude variability
  - Operating costs – operating costs depend on crude oil properties
    - Metals
    - Acid
  - Safety/Mechanical Integrity
    - Acid can accelerate corrosion rates



# Present Situation

- Pipeline samples indicate that crude is being blended to maximize the inclusion of very light crude
- Report of refinery asphalt being blended with condensate to “create” domestic sweet crude



# Goals

- AFPM members support development of a crude oil specification that will include additional properties
- The new/revised specification for “domestic sweet” should be adopted by the CME as the basis for futures contracts

# Crude Oil Specification

- Add specifications for other properties
- Use or modify the COQA 2010 recommendation
  - Add distillation specifications
  - Add metals specifications
  - Add TAN specification
  - Add carbon residue specification
- COQA 2010 v.2.0

# Crude Oil Specification

- COQA 2010 v.2.0
  - Consider limits for propane and butane
  - Consider a specification to minimize blending of bitumen
  - Consider a specification for asphaltenes
  - Consider a specification that would exclude cracked stocks



# Pathway

- AFPM members support a data program
  - Validate or modify COQA 2010
  - Promote transparency for crude deliveries
- AFPM members support CME adoption of the revised specification as the basis for the futures contract



# Challenges

- Funding
- Enforcement of crude specifications
- Obtaining buy-in of midstream companies
- Enforcement of midstream companies' specifications and regulations



# AFPM Role

- Collaborate with COQA
- AFPM Manufacturing Committee has “deputized” a Supply Workgroup





**AFPM**

American  
Fuel & Petrochemical  
Manufacturers