



# H<sub>2</sub>S Measurement in Crude Project Update

CCQTA/COQA Meeting  
February 10 & 11, 2010  
New Orleans





# H<sub>2</sub>S Measurement in Crude Project

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- **Background**

- There are numerous requirements for H<sub>2</sub>S measurement
  - ◆ Pipeline, waterway, rail, etc.
- Recent incidents have had serious industry ramifications
  - ◆ Significant financial cost to industry
  - ◆ Risk of termination of trade agreements
- Significant disconnects and confusion regarding appropriate and consistent H<sub>2</sub>S measurement





# H<sub>2</sub>S Measurement in Crude Project

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- Available Testing Methodologies

- ASTM D5705

- Easy to perform, low equipment costs
- Only measures vapor phase H<sub>2</sub>S

- UOP 163

- Easy to perform, low equipment costs
- Only measures liquid phase H<sub>2</sub>S

Both test methods are operator dependent. Results can vary significantly between operators





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- Available Testing Methodologies, cont.
  - ASTM D5623
    - Highly accurate determination
    - High equipment costs
    - Requires experienced and well-trained technician to operate
    - Not practical for most terminal operators



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- Available Testing Methodology, cont.
  - IP 570
    - Operator independent, little technical training required
    - Measures both liquid and vapor phase H<sub>2</sub>S
    - Not validated for crude oil
      - Stanhope-Seta in UK working on modifications



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- Project Objectives
  - Testing framework for analysis and sampling
    - ◆ Provide most accurate H<sub>2</sub>S values
    - ◆ Reduce analytical error, technician variability
  - Educate transportation operators
    - ◆ H<sub>2</sub>S potential of crudes in system
    - ◆ Health and safety issues
  - All operators using the same test method and comparing the same data



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- Current Progress
  - Crude oil matrix testing is underway at Stanhope-Seta
    - ◆ IP 570 methodology under review
  - CCQTA project has been established
    - ◆ Allows for project management (financial, communications, technical)



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- Further Activities
  - Determine appropriate sampling protocol
  - Gather samples from various North American locations
    - Samples sent to AITF for analysis
    - Analysis to include: Density (ASTM D5002), RVP (ASTM D323), Viscosity (ASTM D445) and H<sub>2</sub>S (as per ASTM D5705, UOP 163, ASTM D5623, IP 570)
  - Solicit funding for test work
  - Final report from AITF





# H<sub>2</sub>S Measurement in Crude Project

- Project Costs (based on 25 samples)

TEST	Market Price	# of Tests	Subtotal
Density (ASTM D5002)	\$48	25	\$1200
RVP (ASTM D323)	\$98	25	\$2450
Viscosity (ASTM D445)	\$100	25	\$2500
H2S (ASTM D5705)	\$161	75	\$12,075
H2S (UOP 163)	\$250	75	\$18,750
H2S (ASTM D5623)	\$282	75	\$21,150
H2S (IP 570)	\$150	75	\$11,250
<b>TOTAL PROJECT COST</b>			<b>\$69,375</b>
<b>AITF Work In Kind Contribution</b>			<b>\$34,375</b>
<b>Project Participants Contribution*</b>			<b>\$35,000</b>

\* Participant Cost = \$5000 Max





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- Deliverables
  - For Paying Contributors:
    - ◆ All correspondence
    - ◆ All data
    - ◆ Input on project decisions
    - ◆ A detailed final report
  - For the General Public
    - ◆ A compiled report, screened and reviewed by the paying contributors



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- How Do I Join?
  1. Fill out the project form, and return to CQI (Bill) or AITF (Dave) or CCQTA (Andre) at meeting or after meeting by fax or email
  2. Fill out contribution form on website and submit by email



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- Thank you for your interest in the H<sub>2</sub>S Measurement in Crude Project
- Any Questions???