

Training Title:

CRUDE OIL: SAMPLING, TESTING, EVALUATION & EQUIPMENT

Training Duration:

5 Days

Training Venue and Dates

REF LM040	Crude Oil: Sampling, Testing, Evaluation & Equipment	5	07 – 11 Oct 2025	\$6,500	London, UK
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In any of the 4 or 5-star hotels. The exact venue will be informed soon.

Training Fees

- \$6,500 per participant for Public Training including Course Materials/Handouts, Tea/Coffee, Refreshments & Lunch

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING DESCRIPTION

Crude oil is the single largest traded commodity in the world. Proper sampling, analysis, and reporting of data according to established standards is of paramount importance, especially with the volatility in price, and the market proliferation of synthetic, high TAN, and extra heavy crude oils. Whether crude oil is refined in the near-term or stored for an extended period, it is fundamentally important that recognized procedures and standards be used in sampling and analysis. This is true from the time crude oil is produced, through transportation and interim storage, until it is ultimately refined. Analytical data must be accurate and reliable as they are the basis for decisions on whether a given crude oil can be effectively processed and yield the desired product slate. These data are also used by engineering personnel in planning refinery upgrades.

OBJECTIVE

The objective of crude oil sampling, testing, evaluation, and equipment is to ensure accurate assessment and characterization of crude oil properties. This process is crucial for various purposes, including:

- **Quality Control:** To determine the chemical composition, density, viscosity, sulfur content, and other key parameters of crude oil to assess its quality and suitability for refining or transportation.
- **Process Optimization:** By understanding the properties of crude oil, refineries can optimize their processes for maximum efficiency and product yield.
- **Compliance:** Testing ensures that crude oil meets regulatory and environmental standards regarding emissions, safety, and product specifications.
- **Risk Management:** Accurate evaluation helps in identifying potential risks associated with handling, transporting, and processing crude oil, such as corrosion or safety hazards.

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- **Market Value Determination:** The quality and composition of crude oil significantly influence its market price. Proper testing and evaluation help in determining fair market value.
- **Research and Development:** Data obtained from testing crude oil can be used for research purposes, such as developing new refining techniques or improving existing ones.
- **Equipment Design and Maintenance:** Understanding the corrosive or abrasive properties of crude oil helps in designing and maintaining equipment used in its extraction, transportation, and refining.

WHO SHOULD ATTEND?

- Laboratory technicians and chemists responsible for the analysis of crude oil samples for quantity and quality purposes
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- Refinery personnel responsible for evaluating crude oil to determine their processing characteristics
- Operating (field) personnel responsible for collecting samples will also benefit from a better understanding of how test results are directly dependent on proper sample collection and handling
- Traders and buyers involved in sale, purchase, or exchanges of crude oil.

TRAINING METHODOLOGY

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivate everybody to find the right answers. The delegates will also be encouraged to raise their own questions and to share in the development of the right answers using their own analysis and experiences.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & General Discussions

COURSE OUTLINE

Day 1

- Crude Oil History; Supply and Trading Patterns
- Definitions and Terms
- Quality Variations and Their Causes
- The Complexities of Crude Oil Composition
- Sampling Protocols
- Sampling Containers and Sample Integrity

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Day 2

- Composition and Classification
- Inspection Analyses (Cursory Assay)
- Comprehensive Analyses (Full Assay)
- Other Important Crude Oils and Fraction Properties
- Basics of Crude Oil Processing Evaluation

Day 3

- Bitumen and Extra Heavy Crude Oils
- Crude Oil Quality (Case Studies)
- ASTM Crude Oil Proficiency Testing Program
- Challenges Presented to the Analyst by Heavier, Higher Sulfur Feed stock and Opportunity Crude Oils
- Future Needs in Crude Oil Characterization and Analytical Test Method Requirements

Day 4

- Typical oilfield processing
- Production fluid treatment objectives
- Production fluid separation
- Emulsion
- Theory
- Stabilization
- Destabilization
- De-emulsifier

Day 5

Oil treatment basics

- Dehydration
- Desalting
- Stokes law of settling theory or gravity separation
- De-emulsifier requirements and selection
- Group discussion on the chemicals used

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Note:

Pre & Post Tests will be conducted

Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.

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