



# AL027: Laboratory Analyzes for Oil & Gas Production

## Training Description:

The purpose of this intensive training is to provide a comprehensive knowledge of and develop practical skills in conducting reliable and safe laboratory analyzes for the oil and gas industry.

## Training Objectives:

By the end of the training, participants will be able to:

- ✓ Grasp the physical and chemical concepts involved in various analyzes
- ✓ Comprehend issues requiring special attention in various analyzes
- ✓ Assess the results of an analysis and decide whether to carry out the analysis over again
- ✓ Review main Occupational Health and Safety rules within the framework of lab activities

## Training Designed for:

This course is intended for all Laboratory Personnel, Operational Staff and other professionals interested in lab analyzes dedicated to oil and gas operations.

## Training Requirements:

“Hands-on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

## Training Program:

### DAY ONE:

- ❖ **Role and Responsibilities of Laboratory Staff**
  - Member of Production Staff – Equipment Yields Controls/Monitoring
  - Final Product Quality Controls/Monitoring – Recommendations to Improve Treatments
- ❖ **Analyzes Specific to Crude Oil**
  - Specific Gravity or Density
  - Vapor Pressure (Reid VP)
  - Water Content: Basic Sediment & Water (BSW), Dean Stark Distillation
  - Salt Content: Chlorides Content, Conductimetry
  - Acid Components Content
  - H<sub>2</sub>S Content (Methylene Blue)
  - H<sub>2</sub>S & Mercaptans By Potentiometry
  - Total Acid Number (TAN) Of Liquid Hydrocarbons
  - Fluid Rheology: Pour Point, Kinematic Viscosity, Wax Content

### DAY TWO:

- ❖ **Analyzes Specific to Gas**
  - Gas Characterization Analyzes
  - Dew Point (HC & Water)

- Gas Composition by Gas Phase Chromatography (GPC)
- Gas Specific Gravity Estimate from Composition
- Acid Components Content
- H<sub>2</sub>S Content (Dräger), H<sub>2</sub>S & Mercaptans Content (Potentiometry, Iodometry)
- CO<sub>2</sub> Content (Dräger & Acidimetry)

#### DAY THREE:

##### ❖ Analyzes for The Follow-Up of Effluent Treatment Operations

- Demulsifiers Evaluation & Selection (Bottle Tests, Field Tests)
- Quality Controls/Monitoring of Poor and Rich Triethylene Glycol (TEG)
- Water Content, Ph
- Hydrocarbon Content
- Follow-Up of Equipment Performances: Water Content, Residual Emulsion

#### DAY FOUR:

##### ❖ Laboratory Visit

- Equipment Visualization
- Discussions on Practices, Difficulties

##### ❖ Analyzes Done to Optimize Anti-Corrosion Treatments

- Deposits and Scale Analyzes
- Chemical Corrosion and Bacterial Corrosion Appraisal
- Recommendations for Chemical Additives and Treatments

#### DAY FIVE:

##### ❖ HSE In Laboratory Activities

- Laboratory Facilities Design and Implementation
- Chemicals Management (Storage, Usage)
- Occupational Health and Safety Behavior

##### ❖ Course Conclusion

##### ❖ POST-ASSESSMENT and EVALUATION

### Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

### Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

## Training Fees:

**TBA as per the course location** - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

## Training Timings:

### Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

### For training registrations or in-house enquiries, please contact:

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