



LAB168

Water and Crude Oil Quality Control Management

Course Introduction:

What does it mean to be a scientist or technician in a laboratory? Why do laboratory staff ask questions such as what is that substance and why does it react that way?

Since the beginning of time, man has been seen as an inquirer. We are always trying to discover new things, classify everything and to understand the behavior of things. The ability to enquire is one of the most important assets a person in a laboratory can have. You need to be able to act in the role of an inquirer when working in a laboratory environment.

The idea of this course is to give an introduction to working in a laboratory. It is hoped that people become aware of their role and function in a laboratory environment. Whatever the function of the laboratory, its most important asset is the staff and how those staff perform. This course presents people with the basics to become an integral part of the laboratory and assist the facility to generate data that are of high quality and scientifically reliable.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- ✓ To provide laboratory staff with knowledge and skills of methods on laboratory through overview of laboratory procedure, quality control, technology, analysis and best practices.
- ✓ To exercise total quality management in producing reliable, consistent and independent results and on-time to their customers
- ✓ To emphasize on equipment calibration and maintenance as part of the quality assurance and quality control procedures.
- ✓ To prepare and handle Sample for different Analytical Instrumentations
- ✓ To understand, use, maintain and troubleshoot of key laboratory equipments
- ✓ To Understand the various techniques of Analytical Measurements
- ✓ To develop effective communication and interpersonal skills among lab personnel
- ✓ To Exercise Gas and sulfur Composition
- ✓ To Study the Scale and Sludge schema
- ✓ To develop the interpretation of troubleshooting analysis

Who Should Attend?

This course is intended for all laboratory staff; Chemists, Analysts, QA/QC and Lab Technicians, R&D, Scientists and other lab technical staff.

Course Outline:

Day 1:

PRE TEST

Introduction of Laboratory Training

Laboratory Quality Management (ISO 17025)

- Laboratory Structure to ensure Integrity and Competence
- LQM – Laboratory Quality Management Systems as a Framework for Business Process
- Laboratory Facilities , Services and Supplies
- Ensuring Competence: Equipment, Personal, Tenders, contracts and requests
- Ensuring competence – test and calibration methods

Overview of Laboratory Procedure

- General Product Specifications and Analytic Items
- Handling of samples and items from customers for calibration and test
- Documentation and documentation control process
- Laboratory Safety

Quality Control of Gasoline and Naphta

- Specification for Gasoline and Naphta
- Octane Number
- Copper Strip
- Oxygenate Cpds.
- Gum Content

Day 2:

Quality Control of Diesel, Kerosene, Aviation Fuel

- Specification for Diesel ,Kerosene and Aviation Fuel
- CFPP, Cloud and Pour Point
- Cetane Number, Cetane Index & Lubricity
- Total Aromatic cpds (Mono-Di-Tri-Poly) on Aviation
 - o Samples

Quality Control of Fuel Oil & Base Oil, Asphalt & Sulfur

- Distillation
 - o HT Simulated Distillation Test for Heavy Oil Samples
- API
- Viscosity and Viscosity Index
- Color test
- Total Sediment by IP method
 - o Sediments on Fuel and Oil Samples

Day 3:

Crude Oil Assessment

- Hydrocarbons Laboratory
- Sampling of Petroleum and Petroleum Products
- Crude oil and Hydrocarbon Products analysis (ASTM-IP)
- Carbon Residue, Asphaltene Content
- Density(Specific Gravity)
- Distillation
- Sulfur Content
- Viscosity and Pour Point
- Water and Sediment
- Wax Content
- The Evaluation of Results and Methods
- Quality Control and Quality Assurance

Quality Control of Water and Environmental Test

- Amine content
- Ion Chromatograph
- TOC
- Oil in water

Day 4:

Quality Control of Gas (Propane, Butane etc.)

- Gas Composition
- Calorific Value
- Mole Fraction
- Gas report interpretation
- Gas Chromatogram
- Sulfur Content
- Sulfur Composition

Practical Session/Lab Visit

Day 5:

Miscellaneous Issue in Quality Control

- Scale and Sludge schema using AAS or ICP

Laboratory Hand Blend

- Preparation
- Result Evaluation

NTR Technology and Application

- General Principle and schema

Special analysis and troubleshooting

- Evaluation of Results and Methods
- Study Cases

POST TEST

Course Requirement:

"Hand's on **practical sessions**, **equipment** and **software** will be applied during the course if required and as per the client's request".

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

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

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee/Tea
08:20 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Coffee/Tea/Snacks)
13:30 - 15:00	Last Session

