



LAB002

Water Analysis in Petroleum Industry

Course Introduction:

This course presents an overview of the need for analysis of water, how analytical methods are developed and quality control is applied and how the results of analysis are used. It will describe the physical, chemical and other relevant properties of water components and will also cover sampling, clean up, extraction and derivatization procedures. Older techniques that are still in use will be compared to recently developed techniques and participants will direct to future trends. A similar strategy will be followed for discussion of detection methods.

Water is an excellent solvent, it dissolves many substances. To get correct results and values, analysts have to follow sample strategies. Sampling has become a quality-determining step. If samples can't be analyzed directly they have to be stored and preserve. Physical, chemical or biological activities in a water sample can distort the chemical composition in water. Statistical treatment of data ensures the reliability of the results. Statistical methods will also be reviewed.

Water is living element housing a lot of organisms, wanted or unwanted, harmful or harmless. Some of these organisms produce toxic substances. The course will discuss bacteriological and algal analysis. It will give participants detailed information on most of the cited techniques, sample preparation, separation and detection methods.

Course Objectives:

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

- ✓ Apply up to date knowledge and skills on water analysis and quality control techniques
- ✓ Select proper water samples from different sources including seawater, MSF, boiler feed water, boiler blow down water, boiler water, produced steam, condensate water and drain effluent water
- ✓ Practice the latest water analysis methods and use the correct analytical equipment to achieve the required results
- ✓ Implement the various laboratory methods and technology in water analysis
- ✓ Calculate error, limitation and accuracy of the various analytical methods and calibrate the analytical equipment

Who Should Attend?

This course is intended for all Regulators and water industry professionals, those who are carrying out water analysis and young professionals who want to update their knowledge of water analysis.

Course Certificate:

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

Course Outline:

Day 1:

Water Analysis, Techniques

- Water Analysis
- Quality Control Techniques

Water Samples

- Sea Water
- MSF
- Boiler Feed Water
- Boiler Blow Down Water
- Boiler Water
- Produced Steam
- Condensate Water and Drain Effluent Water

Day 2:

Water Sample Handling, Analysis, Preservation

- Sample Handling
- Classification of Samples by Type of Analysis
- Sample Preservation

Water Sample Treatment, Prevention, SOP

- Preservation Treatment for Various Filtered Samples
- Pollution Prevention
- SOP's

Water Sample Procedures, Control, Assurance

- Laboratory Sample Control Procedures
- Quality Control/ Quality Assurance
- Blank Samples

Day 3:

Samples- Replicate, Spike, Blind

- Replicate Samples
- Spike Samples
- Blind Samples

Interferences, Analytical, Safety

- Interferences
- Analytical Services Request Form
- Safety

Equipment, Supplies, Properties, Temperature

- Equipment and Supplies
- Physical Properties (Water)
- Temperature PH- Color Turbidity

Day 4:

SITE VISIT / Practical Session

- Laboratory Methods
- Technology in Water Analysis

Qualitative/ Quantitative Analysis

Day 5:

Calculate Errors

Various Analytical Methods

Calibrate the Analytical Equipment

Closing & Awarding of Certificates

Course Fees:

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

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 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 Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session