Training Title

WATER TREATMENT PLANT OPERATIONS

Training Duration

5 days

Training Venue and Dates

Water Treatment Plant Operations	*5*	*21st to 25th October, 2024*	*$5,500*	*Dubai, UAE.*

Trainings will be conducted in any of the 4 or 5 star hotels.

Training Fees

- ***5,500 US$ per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch.***

Training Certificate

Prolific Consultants FZE Certificate of Course Completion will be issued to all attendees.

COURSE OVERVIEW

COURSE DESCRIPTION

- ***A petroleum industry requires the water analysis from any sources and different using technique. Starting from analysis of the associated water produced with the crude oil and/or natural gas till the water analysis for different types of processing.***
- ***This program 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, cleanup, extraction and derivative procedures. Older techniques that are still in use will be compared to recently developed techniques and participants will be directed to future trends. A similar strategy will be followed for discussion of detection methods. In addition, the applications of analysis of water types (potable water, tap water, wastewater, seawater and associated produced water) will be reviewed.***
- ***Because 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 preserved. 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 in this course.***
- ***The course will deal with the water characteristics (physical, chemical and biological) and their analysis methods. Physical characteristics of water, such as temperature, color, turbidity, etc., will be discussed, in addition to hardness, acidity, alkalinity, antioxidant demand and how dissolved oxygen is detected.***

- *Water is a 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:

This Training will go through the basic principles of water chemistry and water treatment & wastewater treatment techniques and establish a common way of approach to water use issues. It will examine the various techniques and technologies which can be used to achieve what can sometimes be enormous savings through the implementation of appropriate solutions. The course covers the industry in general but will be customized to the needs of the participants / clients during the programme. A key part of the course is the total system approach to Quality , Health , Safety , Environmental Management , and Pollution control.

This programme provides an overview of a number of Appropriate Techniques associated with Water Treatment equipment, systems, people and management. It describes both the background to each technique and its practical application to achieve the best results.

To understand the role of the following concepts:

Water Chemistry, Water Treatment, and Waste Water Treatment techniques in increasing productivity , Quality, Health, Safety, Environment , Pollution Control etc.

To apply the appropriate Techniques / Processes

- *Each of these techniques contributes to maintenance efficiency*
- *These techniques can be stand alone or can interact with and support each other*
- *To achieve the best results in practicing these technique's*
- *To develop an action plan to utilise these techniques in their own areas of responsibility, fitting them into the overall treatment strategy, and measuring benefits*

SUITABLE FOR:

This program is intended for laboratory specialists, regulators and water industry professionals who plan and use the results of water monitoring programs and those who are carrying out water analysis.

It is particularly aimed at young professionals and those who want to update their knowledge of water analysis.

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 find the right answers.

You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.
Very useful Course Materials will be given.

COURSE OUTLINE :-

Day 1:

- *Introduction to analytical chemistry principles*
- *Element – Compound – Mixture – Solution*
- *Atoms, atomic weight and molecular weight*
- *Ions –valence – equivalent weight*
- *Acid – base – salt – concentration expressions*
- *pH scale – SI unit of measurement*
- *Water sample and analysis*
- *Chemical, physical and biological properties*
- *Qualitative and Quantitative analysis (Full analysis of water)*
- *Water constituents (Anions – Cations)*

Day 2:

- *Water external and internal treatment (Aeration – clarification and*
- *filtration)*
- *Different type of filters used in water treatment*
- *Graphical presentation of analysis results (water patterns)*
- *Oil in water analysis*
- *Suspended solids analysis*
- *Water quality for different usage*
- *Particle size analysis and distribution*
- *Oil field water analysis*
- *Microbiological Treatment Of Water*
- *Microorganism found in Oil Field Water Systems*
- *Bacteria which cause problems (SRB)*
- *Reservoir Souring*

Day 3:

- *Water Sampling For Bacteria*
- *Iron Oxidizing Bacteria*
- *Slime-forming bacteria*
- *Culturing, Identifying and Counting Bacteria*
- *Extinction Dilution Technique*
- *Chemical Control of Microorganisms*
- *Treatment Methods*

- *Water Disinfection*
- *Disinfection Media*

Day 4:

- *Chlorination and de-chlorination*
- *Advantages and disadvantages of using chlorine for disinfection*
- *Ozone disinfection*
- *Ozone Generation*
- *Ultraviolet Disinfection*
- *UV-treated water safe to drink*
- *Types of UV systems*
- *Component of a UV system*
- *Maintain a UV system*
- *ASTM and NACE Standard Tests*

Day 5:

- *Water Injection Systems*
- *Water Sensitive Formation*
- *Guidelines To System Design*
- *Types Of Treating Systems*
- *System Designs*
- *Water Injection System*
- *Water Disposal Systems*
- *Subsurface Disposal*
- *Produced Water Disposal*
- *Surface Disposal*
- *Treating Chemicals Toxicity*

Case Studies, Last Day Review, Discussions & Pre & Post Assessments will be carried out.

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