

CORROSION AND MICROBIOLOGY

OVERVIEW

Microorganisms cause severe problems for oil and gas production facilities including reservoir souring, biofouling and microbiologically influenced corrosion (MIC). MIC damages the integrity of facilities and costs billions of dollars per year in lost production, facilities damage and repair. H₂S, generated by microbes is also responsible for corrosion failures due to sulphide stress cracking.



The two-day course provides participants an introduction to the different forms and causes of corrosion, with emphasis on those caused by microorganisms.

OBJECTIVES

The course uses reviews of field case histories and interactive exercises to show you:

- ❖ What the different types of corrosion are.
- ❖ How corrosion impacts on both your operations and you.
- ❖ The treatment options that are available to prevent corrosion.
- ❖ How and where to monitor for corrosion and microorganisms.
- ❖ The different types of treatment for microorganisms and how to select biocides.
- ❖ How to identify key options to negate corrosion.

TRAINERS

Oil Plus's trainers have over 30 years' experience working on waterflooding operations worldwide. We have a similar number of years presenting training courses in North America, Europe, the Middle East, Africa, India, South East Asia and Australia.

WHO SHOULD ATTEND

Process engineers, production and operations chemists, and laboratory personnel, with little or no microbiology or corrosion background.

Anyone wishing to improve their understanding of how microbes cause corrosion in the oil industry.

REQUIRED TOOLS

Laptop computer and calculator.

CONTENT

- ❖ **Introduction to corrosion** – Describes the most common forms of corrosion found in oil and gas environments.
- ❖ **Corrosion mechanisms and influences** – Explains the key drivers that play a part in the causes of corrosion.
- ❖ **Material selection** – Provides an overview of types of materials used, the variety of pipeline coatings and linings, and what types of corrosion are commonly associated with the metallurgical structure of these materials.
- ❖ **Chemicals and their selection** – Provides an in-depth overview of the types, applications and selection of corrosion inhibitors.
- ❖ **Corrosion control and monitoring** – Details effective corrosion monitoring programmes and mitigation strategies.
- ❖ **Introduction to macro and microbiology** – Outlines the processes, problems and solutions associated with macro-organisms and microorganisms in oilfield systems.
- ❖ **Macro-organisms** – Highlights common types typically found in water injection systems.
- ❖ **Micro-organisms (bacteria and archaea)** – Describes key factors that control microbial activity within a system and the conditions under which micro-organisms can become a problem.
- ❖ **Microbial sampling and analysis** – The importance of good sampling and monitoring techniques for microbiological applications.
- ❖ **Microbial monitoring techniques** – Examines the conventional most probable number (MPN) culturing methods and molecular microbiology methods (MMM) of analysis, and how they should be used.
- ❖ **Biocide selection** – Provides an in-depth overview of the types, applications and selection of biocide treatment systems.
- ❖ **System monitoring** – Examines various types of monitoring regimes/techniques required in order to understand what micro-organisms are present in the system, how many there are and whether they are under control so that effective mitigation and remediation strategies can be implemented.

CONTENT DELIVERY

English

COURSE DURATION

2-Days

COURSE COST & DATES

Available upon request – contact mail@oilplusltd.com



CORROSION AND MICROBIOLOGY TRAINING COURSE

DAY 1		DAY 2	
Time	Subject	Time	Subject
08.30	Delegate registration and coffee	08.30	Morning coffee
09:00	SESSION 1 Corrosion and Corrosion Control <ul style="list-style-type: none"> • Introduction • Sources of corrosion • Factors influencing corrosion 	09:00	SESSION 1 Oilfield Microbiology <ul style="list-style-type: none"> • Biocide testing and evaluation • Control in seawater injection systems • Control in non-seawater injection systems • H₂S scavenging • References
10:00	Coffee break	10:00	Coffee break
10:30	SESSION 2 Corrosion and Corrosion Control <ul style="list-style-type: none"> • Corrosion prevention and control • Iron sulphide scales and Schmoos • References 	10:30	SESSION 2 Questionnaires
12:30 13:30	Lunch break	12:30 13:30	Lunch break
13:30	SESSION 3 Oilfield Microbiology <ul style="list-style-type: none"> • Introduction • Plankton • Macro-biological fouling • Micro-biological activity • Microbially influenced corrosion (MIC) 	13:30	SESSION 3 Assignment
15:00	Coffee break	15:00	Coffee break
15:30	SESSION 4 Oilfield Microbiology <ul style="list-style-type: none"> • Reservoir souring and its prediction • Bacterial identification – sampling and analysis • Online monitoring • Control • Chemical disinfection • Resistance to chemical action 	15:30	SESSION 4 Course wrap-up <ul style="list-style-type: none"> • Review and discussion • Feedback forms • Certificates
16:30	Finish	16:30	Finish

The course will start promptly at 08:30 am, finishing around 16:30 pm. Beverages, lunches and snacks will be provided during the week.
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