

PROBLEM SOLVING USING GEOCHEMICAL TECHNIQUES

GEO011

COURSE DESCRIPTION

During field development and production, too many problems can be solved through integration of geochemical, geological, and engineering data. Geochemical approaches for solving these problems are the most suitable because they provide an independent line of evidence that can help resolve ambiguous geological or engineering data, they are far less expensive than engineering alternatives and they have applicability where other approaches do not.

COURSE GOAL

To enhance the participants' knowledge, skills, and abilities necessary to understand how geochemistry complements other reservoir management tools.

COURSE OBJECTIVES

By the end of this course, the participant will be able to:

- Use mud gas isotopes to identify and characterize pay zones.
- Use the geochemistry of produced fluids (oil, gas, water) and/or core material to:
- Identify missed pay, assess reservoir compartmentalization.
- Allocate commingled production.
- Identify completion problems (tubing leaks, poor cement jobs, etc.).
- Characterize induced fractures (e.g., fracture height).
- Monitor the progression of floods (water, gas, or steam).
- Predict vertical and lateral variations in fluid viscosity and gravity.
- Identify the geological processes which control fluid properties in a given field.
- Use certain key software packages.

WHO CAN BENEFIT

- Development geologists
- Petroleum engineers
- Managers
- Technical personnel

COURSE DURATION

5 Working Days

arctic

COURSE OUTLINE

1. Introduction to Geochemistry

- Overview of geochemical principles and their application in reservoir management.
- Understanding the advantages of geochemical approaches in solving field development and production problems.

2. Characterizing Source Rock

- Identifying and characterizing different types of source rocks.
- Assessing source rock quality, maturity, and hydrocarbon generation potential.

3. Fluid Compositions as Tracers

- Using fluid compositions (oil, gas, water) and core material to track fluid movement and identify reservoir compartmentalization.
- Understanding compositional differences between fluids from various sources.

4. Integration of Geochemical, Geological, and Engineering Data

- Applying integrated data analysis to identify missed pay zones.
- Characterizing reservoir compartmentalization, allocating commingled production, and identifying completion problems.
- Analyzing induced fractures and monitoring flood progression.

5. Predicting Fluid Viscosity and Gravity Variations

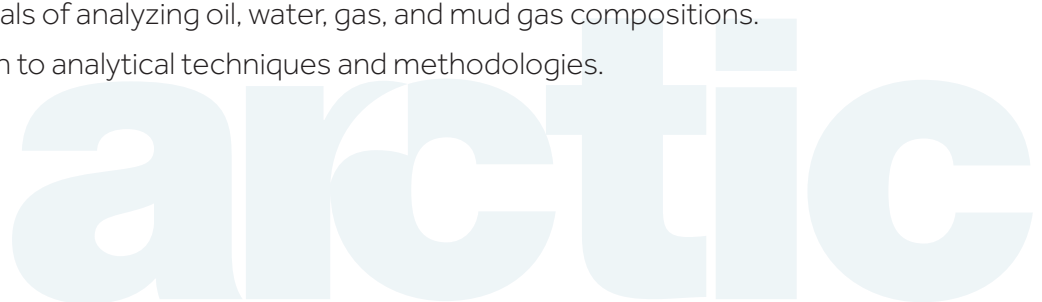
- Techniques for predicting vertical and lateral variations in fluid viscosity and gravity.
- Understanding the geological processes controlling fluid properties in a field.

6. Use of Key Software Packages

- Introduction to software packages for geochemical analysis.
- Hands-on training and practice using the software for data interpretation and problem-solving.

7. Basics of Compositional Analyses

- Fundamentals of analyzing oil, water, gas, and mud gas compositions.
- Introduction to analytical techniques and methodologies.

A large, light blue, lowercase sans-serif watermark of the word "arctic" is positioned at the bottom of the page, partially overlapping the footer area.