

Paraffin and Asphaltenes - problem causes & solutions



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This may also be of interest

Production & Flow
Assurance Engineering

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Well Productivity
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Optimization

Oil and Gas Well
Workovers and Repairs

Workovers and Repairs

Description

This course is designed to present the physical characterization of crude oils and natural gases, the properties associated with the content of paraffins and asphaltenes, the causes of paraffins and asphaltenes precipitation and its effects in the production operations for different types of oil and gas reservoirs, with emphasis in the impact of paraffins and asphaltenes in Secondary and Enhanced Oil Recovery projects including subsurface and surface equipment.

The training covers the typical problems encountered in oils from 8 ° API to above 50°API caused by paraffin and asphaltenes, field strategies implemented to produce these oils and practical solutions, the testing methods to identify physical characteristics of the waxy and asphaltene oils and treatment methods, mechanical, thermal and chemicals.

Other effects of paraffin and asphaltenes as emulsions, corrosion and scales issues are presented illustrated with field cases, then the methods to select cost-effective treatments to prevent and remove formation damage caused by paraffin and asphaltenes in new and mature wells. Questions will be taken throughout the course and discussion of the participants own problems will be encouraged. Laboratory and historic field case data and illustrations is a fundamental part of this course.

Objectives

- To learn about Paraffin and Asphaltenes and their role in the physical characteristics of the oil, the effect of oil composition and characteristics on the problems in drilling, completing and production stages.
- Understand the possible solutions to these problems and cost-effective approaches.
- Discussion of the history of the Paraffin and Asphaltene treatments from removal to inhibition and the economic impact of Paraffin and Asphaltenes in the industry.
- To learn characterization methods of Paraffin and Asphaltenes, understand reasons for paraffin deposition, and practical use the methods available in operations for control/mitigation of paraffin problems.
- To understand the tests used to determine cloud point (wax appearance temperature) and pour point and implications in the oil production.
- To study the physical characteristics of asphaltenes and how formation and tubing conditions can affect their stability and deposition tendencies.
- Discuss influence of the API gravity, production methods and production conditions relate to asphaltene and paraffin problems.

Audience

- Production Engineers
- Chemical Engineers,
- Reservoir Engineers
- Geoscientists
- Managers and Supervisors

Technical field personnel from oil companies or service companies that need to gain or increase their understanding of paraffin and asphaltene problems associated with field operations. it can be tailored to specific company needs.



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Content

Day 1

Introduction and overview of Paraffins and Asphaltenes

- General Concepts
- Chemistry and Properties of Paraffin
- Chemistry and Properties of Asphaltenes
- Causes of Paraffin Problems
- Causes of Asphaltene Problems
- Formation Damage Caused by Paraffin and Asphaltenes
- Formation Damage from Other Causes
- Field Case example and discussions.

Day 2

Asphaltene and Paraffin Problems

- EOR related asphaltene formation damage problems
- Paraffin Problems in Producing Wells.
- Asphaltene Problems in Producing Wells.
- Paraffin Problems in Surface Equipment.
- Asphaltene Problems in Surface Equipment.
- Types of Paraffin Treatments.
- Types of Asphaltene Treatments.
- Cost Effective Paraffin Treating.
- Paraffin and Asphaltene Product Testing.

Day 3

Paraffins and Asphaltenes workshop

- Review of the course material,
- Paraffin and asphaltene impact in the reservoir, injection and producer wells, and production facilities.
- Methods to control paraffin deposits and recommendation for field applications.
- Methods to control Asphaltene deposition and recommendation for field applications.
- Discuss student's specific field problems and methods applied to prevent paraffin asphaltene deposition
- Discuss student's specific field problems and methods applied to prevent paraffin deposition that have failed.
- Field problems and methods applied to prevent asphaltene deposition that have failed.
- Presentation of field production/reservoir problems by the participants, work plans to be implemented to optimize the field operations.
- Teamwork integrated approach implemented by operational companies in other countries in relation to problems of paraffin/asphaltene.

End of the training

