

# Stuck Pipe: Well hole Problems Detection & Diagnostics



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### Introduction:

This course will be all about prevention rather than cure. It will teach the complete process of detection, diagnostics, and resolution in a methodical way. The candidates will be working in teams to analyze real field cases and present their solution. The course will address advanced topics in hole problems such as depleted sands, supra and subsalt gouge zones, fractured rocks, salt problems, and HPHT drilling windows.

In addition, the the candidates will learn how to perform the math required for diagnosing and resolving these problems. All causes of stuck pipe will be addressed, what causes each, how to identify them, what immediate action can be taken. It shows the role of each member of the rig team in the chain to facilitate proactive early diagnosis. This course is set apart from other traditional courses by its extensive use of integrated approach of data analysis and clever use of drilling trends and cuttings analysis. With your data, the course can be customized and past stuck pipe incidents can be utilized in the course.

## **Objectives:**

By the end of this BTS training course, participants will be able to:

- Address preventive measures to prevent the occurrence of stuck pipe
- Learn how to minimize the frequency of stuck pipe
- Learn how techniques of monitoring, diagnosis, and resolution
- Adhere to best practices in all aspects of the well construction process



## Who should attend?

Drilling Engineers, Senior Drilling Engineers, Drilling Supervisors, Workover Engineers, Petroleum Engineers, Completion Engineers, Tool Pushers, Reservoir and Senior Reservoir Engineers, Geologists, Production Engineers, Wellsite Engineers, Foremen, Industry Personnel

## **Course Outline:**

#### A Primer on Well Planning

- Well planning from pre drill to post mortem
- Wellbore stability
- Drilling fluid
- Solids content of a drilling fluid
- Drilling fluid properties trends
- Real time trends
- Drilling type curve analysis
- Review of sticking mechanisms

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#### **Mechanical Sticking**

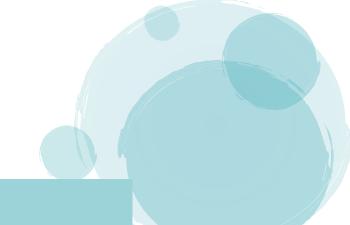
- Hole pack off
- Wellbore geometry related sticking
- Mobile formation
- Bit balling

#### **Fishing Operations**

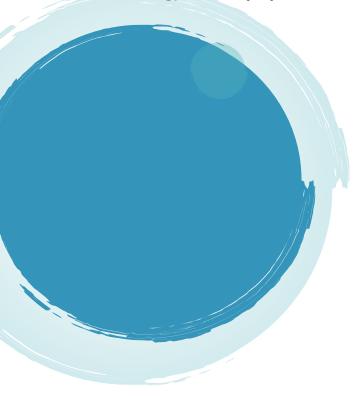
- Steps to be taken prior to fishing
- Free point
- Zero tension at stuck point
- Parting the stuck pipe
- Backing off
- Fishing and milling tools
- Fishing economics

#### **Differential Sticking**

- Causes
- Warning signs
- Sticking force
- Immediate action
- Prevention
- Class problems



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#### **Advanced Topics in Suck Pipe**

- Tracking stuck pipe probability while drilling
- Stuck pipe in deviated wells
- Stickiness' factor
- Liner sticking
- Communication and personnel morals
- Stuck pipe knowledge base