Stuck Pipe Course
A Practical Course for Hole Problems Detection, Diagnostics, and Proactive Resolution

Course Perspective
When you get stuck, your first action must be correct and swift. Otherwise your chances to free up your string will diminish exponentially with every passing minute. 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 student 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 student will learn how to perform the math required for diagnosing and resolving these problems. All 25 plus causes of stuck pipe will be addressed, what causes each, how to identify them, what immediate action can be taken. The Course shows the role of each member of the rig team in the chain to facilitate proactive early diagnosis. This course is set a part 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. Our experience indicate that customized courses to address regional hole problems is far more beneficial to the operators.

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No offense to no one!! first action is important in freeing a stuck pipe. This course will offer plenty of good practices to use in first action to a stuck pipe incident.

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Objective
This course is designed to address preventive measures to prevent the occurrence of stuck pipe or at least minimize its frequency. The full spectrum of monitoring, diagnosis, and resolution will be addressed. The student will leave this course fully mindful of the importance of adhering to best practices in all aspects of the well construction process.

Who should attend?
Anyone who is connected with well construction from the planning phase to post mortem including drillers, toolpushers, drilling engineers, geologists, crew members, and service personnel.

Course Materials
The course will be delivered using a mixture of power point presentation and heavy class participation (almost 70% hands on practical and discussions)

Instructor:
Dr. Saad Saleh, Drill-Sense International (Vita Attached)

Course Content:

1. Day 1: A Primer on Well Planning
   a. Well planning from pre drill to post mortem
   b. Wellbore stability
   c. Drilling fluid
   d. Solids content of a drilling fluid
   e. Drilling fluid properties trends
   f. Real time trends
   g. Drilling type curve analysis
   h. Review of sticking mechanisms

2. Day 2: Differential sticking
   a. Causes
   b. Warning signs
   c. Sticking force
   d. Immediate action
   e. Prevention
   f. Class problems
3. **Day 3: Mechanical sticking**
   a. Hole pack off
   b. Wellbore geometry related sticking
   c. Mobile formation
   d. Bit balling
   e. Group exercises

4. **Day 4: Fishing Operation**
   a. Steps to be taken prior to fishing
   b. Free point
   c. Zero tension at stuck point
   d. Parting the stuck pipe
   e. Backing off
   f. Fishing and milling tools
   g. Fishing economics
   h. Group exercises

5. **Day 5: Advanced Topics in Suck Pipe**
   a. Tracking stuck pipe probability while drilling
   b. Stuck pipe in deviated wells
   c. Stickiness’ factor
   d. Liner sticking
   e. Communication and personnel morals
   f. Stuck pipe knowledge base
   g. Final exam
The Instructors: Dr. Saad Saleh

Dr. Saleh holds a Ph.D. and MS degrees in Petroleum Engineering from the Colorado School of Mines. He has over 20 years of professional drilling experience in industry and 6 years in academia. Dr. Saleh is a specialist in real time geopressure, wellbore stability, and drilling analysis. Dr. Saleh is highly experienced in drilling technology frontiers (HPHT deepwater, sub salt drilling to name few) in many parts of the world including Latin America, Gulf Coast, North Sea, Canadian Shelf, and the Far East. Dr. Saleh has been involved in training and mentoring drilling engineers and drilling operation personnel on geopressures prediction, wellbore stability analysis, drilling fluid solids control, and drilling fluids optimization.

Currently, Dr. Saleh is the President of Drill-Sense International, a consulting firm which specializes in advancing real time drilling technologies, training in all aspects of Petroleum Engineering with emphasis on drilling training, as well as providing expert advice to the global drilling industry on drilling diagnostics, optimization, well planning, and real time drilling surveillance.

Dr. Saleh was a Senior Drilling Fluid Specialist with Saudi Aramco (from 2005 to 2007), a Principal Geopressure advisor for Knowledge Systems (6 years from 2000 to 2005) in Houston, Texas, a Drilling Advisor for PDVSA-Intevep (3.5 years from 1997 to 2000), Assistant Professor at the Colorado School of Mines (4 years from 1994 to 1997) and the University of Alaska (2 years from 1988 to 1990), and a Drilling Engineer for BP Exploration in Alaska (4 years from 1990 to 1994) and Northern Petroleum (2 years from 1977 to 1979).