Delivering Excellence, Creating Value

Greenfield Oil and Trading Services Pvt Ltd.

Sand Management Training

Course Objective: The main objective of the Course is to cover all the aspects of sand management from subsurface to surface and to develop an understanding how to manage sand from downhole to surface in cost effective and risk-free manner thereby optimizing production

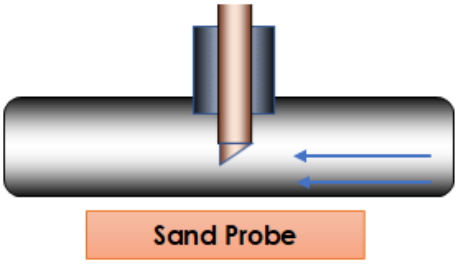
Course Pre-requisites: This will be the Intermediate Level Training for Completion, Process and Production Engineers. The participants should have some basic knowledge of production & completion engineering (Sand Management)

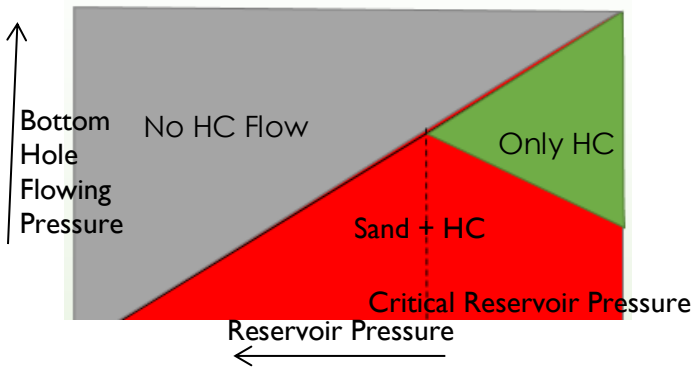
Course Duration: 20+ Hours (~4 days)

Course Language: English

Resources Provided:

- Demo Software for training
- Case studies & Assignments
- Doubt Clearing Sessions





Course Instructors

Vinnavadi C Babu Sivakumar
Principal Consultant

Abhishek Gupta
Senior Petroleum Engineer

Course Outline

Rock Mechanics (4 hr 45 min)

- Strength of rocks (Strength of Rocks, Rock mechanical parameters, UCS and stresses, OH Logs, Data gathering and lab analysis, Exercises)
- Sand Production (Sand Production Mechanism, Mohr Coulomb and Stability, CDP and derivation, CDP Applications, Exercises)
- Volumetric Production (Transient production and arc behavior , Derivation, Exercises)
- (PSD - Coarse, fine, etc. , Measurements- Sand Concentration, Fines, Exercises)

Sand Control (6 Hrs)

- Sand Control Strategy (Active and Passive, Sand Control Selection)
- Types of Sand Control (SAS- WWS, Premium, etc., Gravel Pack - Cased Hole & OH , Frac Pack, HRWP, Optimum Frac Pack designing, Sand consolidation & agglomeration, Remedial Sand control - TT, Exercises)
- Niche Technology (Screens and alternate sand controls)
- Economic Analysis (Basics of IPR, Skin concepts in sand control, Exercises)
- Selection Chart (Sand Control Selection Chart)

Erosion & Transport (4 hrs 15 min)

- 4 Phase Flow (Multiphase flow concept - PVT, 4-Phase flow concept, Flow Regimes, 4 phase flow regimes, Exercises)
- Transport (Minimum Transport Condition, Flow regimes and critical velocity, Forces on Sand flow, Correlations in deposition -pipeline, pipe, horizontal flow, Exercises)
- Erosion (Erosion Concept, Geometries - Choke, bends, pipe, Measurement of Erosion rate, Correlations - DNV, Tulsa models, Exercises)
- Sensitivities using SandMaster (Sensitivities using SandMaster Critical velocity, Erosion, Envelope and Risk)

Surface Sand Management (5 Hrs)

- Sand Measurement & Sampling (Units of Measurement, Sand Sampling methods, Exercises)
- Sand Monitoring Sensors (Intrusive, Non-Intrusive, Exercises)
- Separation (Hydro-cyclones, Filter and Vessels, Calculation of Restricted Potential
- Restricted Potential (Basics of IPR, Skin concepts in sand control, Exercises)
- SandMaster (Demo, Sensitivities and Models,
- **Exercise (Final Quiz for Certification)**