Workover/Well Servicing Operations

Workover Course Outline
IADC WellCAP

3 Days

SUPERVISOR

ORIENTATION
Rapid Fire Competition
Case History Stages
Well Control Training Approach
Situational Awareness

COMPLETION AND WORKOVER
Completion Design
Workover
Mechanical Failure
Clean Out and Workover Operations
Features of Workover
Workover Operations
Well Control: Drilling vs. Workover

PRESSURE BASICS
Hydrostatic Pressure
Understanding Depths
Bottomhole Hydrostatic Pressure
Formation Pressure
Relationship Between BHP and FP
Sucker Rod Pump Retrieval
Rod Pump Retrieval: A Quick Turnaround
Rod String Retrieval
Casing, Packer or Tubing Leaks
Formation Damage/Low Permeability
Countering Liquid Hold Up or Gas Slip
Excess Water/Gas Production
Controlling Sand and Other Fill/Debris

BARRIERS
Barrier Classification
Barriers: Production Tree
Production Tree
Subsurface Safety Valves (SSSVs)
Operating the Simulator: Choke Console
Operating the Simulator: Drillers Console
Well Control Safety Meeting
Pressure Bleed-Down Exercise
Drawing Conclusions

THE BULLHEAD METHOD
Calculate Fluid Gradient
Calculating Hydrostatic Pressure
Calculating Kill Weight Fluid
Calculating Formation Pressure
Fluids
Water-Based Fluids
Calculating Volume for Bullheading
Calculating Strokes for Bullheading
Backpressure
Calculating Volume on Backside
Calculating Tank Volume
Plotting the Kill
Bullheading Breakover
Graph Paper
Pressure Limits & the Killsheet
Well Control Safety Meeting
Bullhead Exercise
Drawing Conclusions

BULLHEAD KILLSHEET
Preparing for the Killsheet
Well Control Safety Meeting
Bullhead w/ Killsheet Exercise
Drawing Conclusions

DOWNHOLE COMPLICATIONS
Packers
Permanent Packers
Retrievable Packers
Well Control Safety Meeting
Identifying Complications Exercise
Drawing Conclusions
Unconventional Well Control Techniques

REVERSE CIRCULATION
The Well as a U-Tube
Circulating Pressures
Circulation and Bottomhole Pressure
ECD
Downhole Communication
Reverse Circulation Method
Well Control Safety Meeting
Reverse Circulation Exercise
Drawing Conclusions

INFLUXES
Causes of Influxes
Understanding Warning Signs
Warning Signs
Consequences of Not Responding
Blowout
Reacting to an Influx
BOPs: Annular and Rams
Accumulators
Full Opening Safety Valve (FOSV)
Well Control Safety Meeting
Reverse Circulation 2 Exercise
Drawing Conclusions

FORWARD CIRCULATION
Choke Adjustments and Lag Time
Well Control Safety Meeting
Forward Circulation Exercise
Drawing Conclusions

LUBRICATE & BLEED WELL CONTROL METHOD
Lubricate & Bleed Method
Well Control Safety Meeting
Lube & Bleed Exercise
Drawing Conclusions

END-OF-THE-DAY CONSIDERATIONS
Force and Area
Buoyancy Factor

PRACTICAL APPLICATION: MULTIPLE WELLS WITH INFLUXES
Review
Well Control Safety Meeting
Multiple Influx Exercise
Drawing Conclusions

COMPLICATIONS
Stuck Pipe: Packoff
Stuck Pipe: Mechanical
Industry Practices
- Barriers
- Accumulators
- Function Tests
- Pressure Tests
- BOP Tests

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Workover/Well Servicing Operations

Well Servicing Operations Course Outline
Wild Well

COILED TUBING

CT Operations
Washing Sand and/or Fill
Tubing ScaleRemoval
Remedial Cement
Drilling Plugs
Thru-Tubing Fishing
Setting/Retrieving BridgePlugs
Reservoir Stimulation
Siphon String Installation
Formation and Drilling Data Acquisition
Perforating With Coiled Tubing
Other Coiled TubingOperations
Various Coiled TubingUnits
Path of Coiled TubingDownhole
Coiled TubingReels
Reel Drum
Gooseneck
Gooseneck or Tubing GuideArch
Tension
Tubing Injector Head
Inside Tensioners
Stripper Assembly (orABOP)
Strippers
Ram BOPs
Stacks
Causes of CT failure
Pitting, Tension, Buckling, Abrasions
Injector Induced Damages
Ballooning, Necking, Ovality
Reel Log
Emergency Response

SNUBBING

Equipment Selection Considerations
Snubbing vs Stripping

WILD WELL CONTROL

IADC WELLCAP

3 Days

SUPERVISOR

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