BLACKBIRD FOR TRAINING

Integrity Cased Hole Logging & Reservoir Monitoring



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Introduction:

This comprehensive 3-week training program is specifically designed to equip engineers, geoscientists, and well integrity specialists with the technical knowledge and practical skills needed to evaluate well integrity and monitor reservoir performance using advanced cased hole logging techniques. Throughout the program, participants will explore the full range of cased hole logging tools, interpretation methods, and their applications in field operations.

Training Objectives:

By the end of this program, participants will be able to:

- Understand the fundamental principles of cased hole logging and its various applications.
- Conduct accurate well integrity assessments using a range of logging tools.
- Interpret production logging data to identify flow contributions and detect anomalies.
- Monitor fluid movements and saturation changes behind casing.
- Apply logging data to support field development, maintenance planning, and reservoir surveillance.

Course Outline 3 Weeks — 5 Topics per Day:

Day 1: Fundamentals of Cased Hole Logging

- Introduction to cased hole logging
- Comparison between cased hole and open hole logging
- Basics of casing and well completion
- Types of logging tools and conveyance methods
- Safety protocols and operational planning

Day 2: Cement Bond Logging Techniques

- Principles of cement bond logging
- Interpretation of CBL and VDL logs
- Ultrasonic cement evaluation
- Cement quality indicators
- Cement job diagnostics



Day 3: Casing and Tubular Inspection

- Caliper tools and casing deformation
- Corrosion and wall thickness logging
- Magnetic and ultrasonic tools
- Detection of integrity anomalies
- Data quality and tool limitations

Day 4: Leak Detection and Fluid Diagnostics

- Temperature logging
- Noise logging and leak detection
- Pressure diagnostics
- Common leak scenarios
- Case studies in integrity testing

Day 5: Introduction to Production Logging

- Overview of Production Logging Tools PLT
- Spinner flowmeter and flow rate detection
- Temperature and pressure profiling
- Identifying flow zones
- Basic data interpretation

Day 6: Advanced Production Logging Applications

- Multiphase flow interpretation
- Challenges in horizontal and deviated wells
- Flow regime identification
- Zonal isolation evaluation
- Case studies in complex wells

Day 7: Pulsed Neutron Logging - Part I

- Neutron interactions and tool principles
- Sigma and Carbon/Oxygen logging
- Formation evaluation through casing
- Effects of salinity and lithology
- Tool calibration



Day 8: Pulsed Neutron Logging - Part II

- Saturation monitoring
- Identification of oil/water/gas
- Time-lapse saturation analysis
- Behind-casing pay detection
- Reservoir contact tracking

Day 9: Reservoir Surveillance Techniques

- 4D logging concepts
- Water and gas breakthrough monitoring
- Injection profile logging
- Saturation mapping
- Data integration with reservoir models

Day 10: Cross-Well and Distributed Sensing

- Cross-well logging concepts
- Introduction to DTS/DAS
- Fiber-optic sensing
- Real-time wellbore monitoring
- Advanced surveillance technologies

Day 11: Logging Job Planning & Execution

- Defining logging objectives
- Tool selection and configuration
- Depth control and referencing
- Wellsite operational planning
- Pre- and post-job checklists

Day 12: Data Processing and Interpretation

- Overview of data processing software
- Data quality control and calibration
- Curve alignment and filtering
- Cross-plotting and diagnostics
- Interpretation workflows



Day 13: Logging for Workover & Interventions

- Well diagnostics for interventions
- Recompletion planning
- Perforation evaluation
- Water shut-off decision-making
- Plug & abandonment support

Day 14: Case Studies and Field Applications

- Integrity analysis case studies
- Examples of reservoir monitoring
- Production troubleshooting
- Injection well evaluation
- Real-world logging decisions

Day 15: Review, Exercises, and Wrap-up

- Comprehensive program review
- Group exercise: designing a logging program
- Data interpretation exercise
- Participant Q&A and discussion
- Program conclusion and certification

Why Attend This Program: Wins & Losses!

- Gain in-depth technical knowledge and advanced practical skills in well integrity evaluation and reservoir monitoring using the latest cased hole logging techniques.
- Strengthen your ability to make precise operational decisions that improve production efficiency and ensure asset integrity.
- Learn directly from field experts through real-world case studies and hands-on practical exercises.
- Build confidence in planning, executing, and interpreting complex logging programs.
- Enhance analytical and problem-solving skills related to wells, production, and reservoir performance.

Conclusion:

This comprehensive training program offers a fully integrated learning experience, combining theoretical knowledge with hands-on field applications to empower participants to confidently tackle safety, production, and surveillance challenges. Through this course, engineers, geoscientists, and well integrity specialists will become better equipped to apply innovative strategies that ensure well reliability, enhance reservoir performance, and extend asset life. By the end of the program, participants will be qualified to make informed decisions that contribute to improved operational performance and the sustainable success of their projects.

