



«BASIC WELL LOG INTERPRETATION», 5 days

COURSE OBJECTIVE:

Improvement of professional competencies of petroleum engineers in sphere of openhole log interpretation, traditional logging physics and core data analysis of terrigenous reservoir with ability to apply acquired skills at work.

ACQUIRED ABILITIES:

- Analyze the completeness of well logging to solve problems in well after drilling;
- Develop rock physics model of terrigenous reservoir with approval of boundary parameters;
- Identify qualitative features of terrigenous and carbonate reservoirs;
- Calculate quantitative criteria for reservoirs identification;
- Assess reservoir properties on basis of log data i.e. shaliness, porosity, fluid content;
- Forecast reservoir permeability;
- Assess efficient oil pay of studying objects;
- Provide complete analysis of deposits based on core and log data.

COURSE CONTENT:

Module Name	Content
Introduction to core analysis	Main rock physics (petrophysics) formation parameters. Reservoir rock types. Penetration zone profile and wellbore problems. Core sampling. Lab analysis. Standard, lithological, special. Archie-Dakhnov equation. Capillar pressure. Saturation-height model.
Shaliness	Wireline logs. Clay mineral. Types and pore spread. Shale rock logging. Gamma log. Integral and spectral. Shaliness assessment (SP log, SGL, Neutron density cross-plot).
Porosity	Gamma-gamma log. Physics of density log and selective gamma-gamma logging, porosity interpretation. Neutron logging. Physics of CNL and neutron gamma log, porosity interpretation. Acoustic log. Speed and interpretation of AL. Porosity and shaliness. Semantics and variation for different well log survey. Cross-plots and figures for lithology. Porosity assessment by well log survey.
Electric resistance assessment	Interpretation of water saturation at clean formation. Nonfocused

	electrode ER methods (PF, GZ, microlog, lateral log). Focused electrode ER methods (LL, micro-laterolog). Induction log. Determination of optimal ER method. High-frequency logging. Interpretation. Water saturation models at shale reservoir. Reservoir criteria.
Geophysical study technics	Formation multiscanner. Nuclear Magnetic Resonance Logging (NMR).