INTERNATIONAL
Logging, Inc.

Mud Logging related training course

Location 1: Denver Colorado,
When: October 23rd, 24th 2007

Location 2: Houston Texas
When: October 25th, 26th 2007

Duration: 2 DAYS
Time: 9am-4pm
Breakfast and Lunch provided
Cost $ 1200 per person

The course studies the various types of gas detection widely used in the drilling industry, the various factors and conditions effecting surface measurements and how these measurements can be used for effective formation and reservoir evaluation. Case studies are used to illustrate how to gain maximum information from well logs, correlation with wireline logs, the use of chromatographic ratio analysis and gas measurements in applications such as the determination of reservoir fluids and contacts, formation pressure, horizontal well steering and the identification of miscible flood banks.

Contents:-

Hydrocarbon ratio analysis
Fluorescence and QFT™ analysis

5. APPLICATIONS / CASE STUDIES

Part 1 Introduction

- Overview of the course outline and objectives

Part 2 Hydrocarbons - Composition and Evaluation

- Petroleum Composition and Evaluation

  Saturated – Alkanes – paraffins and naphthenes
  Unsaturated - Aromatics
  API gravity classification

- Evaluation

  Sources of surface gas - free or dissolved
  Pressure and temperature considerations
  Critical points, phase diagrams
  Bubble point and dew point curves
  Reservoir phase vs surface phase

Part 3 Interpretation Considerations

- Gas Sources

  Mercer's classification – liberated, recycled, produced and contaminated gas
  Origin and influences on each source

- Detector Type

  Operating differences and limitations of total gas detectors
  Chromatograph detectors, FID vs TCD
  Trap efficiency

- Factors Influencing Quantity and Composition of Gas

Formation considerations	porosity, gas saturation, effective porosity and permeability, fluid mobility, formation pressure
Drilling considerations	hole depth rate of penetration, bit diameter, bit type, teeth size and size/crushing of cuttings, coring, flow rate, differential pressure, mud type and rheology
'Fluid effects'	invasion and filtration, flushing – causes, influences and results, influxes, swabbing
Surface considerations	trap efficiency, location, design losses to atmosphere detector types, advantages/disadvantages

Part 4 Hydrocarbon Analysis

- Definitions and Log Interpretation

  Evaluation of background gas and shows
  Gas normalization
  Real-time and depth based log interpretation
  Produced gas – causes and evaluation of trends, connection gas and trip gas

- Hydrocarbon Ratio Analysis

  Determination of hydrocarbon type, productivity potential,
  Gas/Oil/Water contacts
  Pixler Ratios and plot
  Wetness, Balance and Character curves
  Oil Indicator
  C1/C2 ratio

  Correlation / non correlation with wireline
  Correlation with lithology, porosity, permeability indicators

- QFT™ Analysis

  Conventional fluorescence technique, it's limitations
  QFT™, fluorescence intensity, correlation, advantages and limitations

Part 5 Applications / Case Studies

- Reservoir fluid type
- Determination of gas, oil and water contacts
- Correlation and non-correlation with wireline logs
- Horizontal wells and Geosteering
- Miscible flood bank identification
- Fracture Indicator

Contact us at DTonner@Inter-Log.com
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