

# ***Geological Applications of Wireline Logs II***

*edited by A. Hurst, C. M. Griffiths & P.F. Worthington, Geological Society of London, Special publication #65. 406p*

## **Review by Christopher G. Kendall**

This 406 pg. long book is composed of some 29 papers. All of which are relatively short, but to the point. The book is well illustrated. Most of the diagrams are extremely professionally produced. They include everything from photos to formation microscanner images both in black and white and color. There are the usual phase diagrams and cross sections and log characteristics. The book is well produced and most of the papers are quite clear. The references are to the point and most are quite recent.

As the editors point out, this volume is written to provide documentation of the growing diversity of geological problems that can be addressed while using well log data. They are impressed with the growing application of wire line logs to not only stratigraphy and sedimentology, but to geochemistry, mineralogy and an ability to characterize petroleum reservoirs. Obviously, this book focuses on the physical properties of rocks and the anticipation of the measurements that can be made from the measurements of these properties.

The editors are impressed with the multidisciplinary approach to the interpretation of log characteristics and feel that this has been the driving force behind many of the recent advances made with well log technology.

The book is broken into 4 sections: 1) sedimentology and stratigraphic correlation, 2) fractures and stress, 3) physical properties of rocks and finally, mineralogy and geochemistry.

It begins with a paper by Slatt and others on the Correlation between Outcrop gamma ray logging to well log correlation. This is followed by a paper by Hatton and others on the correlation techniques that can be used for logs made in volcanoclastic areas. Topics range from sedimentological, image analysis of clastic rocks, the use of Formation Micro Scanner images for characterizing depositional sequences and correlating them. The evaluation of thin layer reservoirs, the prediction of sedimentary facies from wire line logs, analysis of fracture data, etc. The book stresses how logs are used to determine breakout and stress analysis. The interpretation of fracture apertures from electrical borehole scans, the use of dipmeters to detect open fractures and nonsealing faults. The application of dipmeters for structural interpretation and the use of in-house resistivity logging for fracture study. From the point of view of physical properties, the book describes how high frequency pseudo-Rayleigh waves can be used as an indicator of shear velocity. They can also be used to evaluate the seismic properties of sedimentary rocks and thermal compactivity.

These fluids? and dynamics of rocks in the North Sea and the Haltenbanken Basins and new approaches to the interpretation of nuclear well logs. From the mineralogical and geochemical points of view, there are papers on logs, determine of organocarbon logs, the application of wireline logs for reservoir diagenesis and also for forward modeling, ? diagenesis.

On large, this is a good book, particularly for geophysicists, particularly those who are interested in relating the depositional facies and diagenesis and well log correlation to the use of wire line logs. This book is aimed more at the mathematical geophysicists than the