



FESAus Monthly Technical Meeting

“Integration of Core Data using a Modelling System”

Peter Behrenbruch- Bear and Brook Consulting Pty Ltd

Abstract:

Integration of core analysis results is important to achieve consistent results which may then be further used by the subsurface team: geologists, petrophysicists and reservoir engineers. The presentation shows how to optimally zonate any cored interval whilst integrating core photos/description, geology, GR/core logs and populating zones with appropriate parameters, including SCA(L) relationships. The system is designed to integrate all information from core measurements and to produce composite charts across all range of scales, assisting in validating results in a consistent manner.

Large scale plots would incorporate integration of RCA data, open-hole gamma log, geology and hydraulic zonation, revealing any inconsistencies that need to be addressed. Data gaps are also highlighted, from either uncored intervals or where core recovery is incomplete. Such plots typically indicate that HFZU layering may vary considerably in thickness from one meter to perhaps more than 20 meters, depending on heterogeneity. For more detail, a standard 5 meter composite, photographed interval would be ideal, made up of: core photos, core description, RCA data and hydraulic zonation. This composite display is able to show the 3 types of “outliers”: 1. due to localised diagenetic variation; 2. interface outliers, often seen at the boundary of two HFZUs and 3. “off trend” measurements which don’t conform well to a data trend. Finally, more detailed plots are designed to show the integration of SCAL results. These plots will also typically show pore throat or grain size distributions, all designed to validate overall results in a visual way.

About the Presenter:

Peter is currently an independent consultant with over 40 years of industry experience. Commencing his career in Canada in the early '70s, Peter worked for Shell in Europe in the late '70s before migrating to Australia, working for Woodside in the early '80s and involved in implementing the initial phase of the North West Shelf (LNG) Development. He subsequently worked for BHP Billiton for 16 years, involved in many Timor Sea developments and other Australian offshore projects (project manager for the Skua and Griffin developments, feasibility stage), as well as worldwide operations, including Deepwater Gulf of Mexico, North Sea and Vietnam. His next major engagement was in academia, where he founded the School of Petroleum Engineering and Management at the University of Adelaide in 2001 (\$25 million grant by Santos), and as inaugural Head of School saw the first students graduate in 2005. He subsequently re-joined the industry in 2007 and was responsible as project director for establishing first production from the Puffin field, Timor Sea (AED Oil and SINOPEC). Over the last few years, Behrenbruch has established Bear and Brook Consulting, engaged in consulting, teaching of university and industry courses, and research and development activities in the area of special core analysis. Behrenbruch has been involved with the SPE for many decades and most notably was on the SPE Board of Directors when he was also Director Asia-Pacific in the late '90s.



DATE: Tuesday 14th February 2017, 12:00 – 1:30 PM **VENUE:** Hotel IBIS- 334 Murray Street, Perth

COST: Members \$30.00; Non Members \$40.00; Students/Retirees \$10.00

Online registration at www.fesaus.org

Note: limited seats for unregistered attendees may be available: \$50.00 cash door charge

