



# FESAus Monthly Technical Meeting

*“What You Need To Know To Drill A HPHT Well”*

Jonathan Slade, Senior Petrophysicist, Woodside Energy

## Abstract:

The logging and sampling practices for High Pressure and High Temperature (HPHT) wells vary widely from standard wells. Non-standard drilling practices, tools and data acquisition processes are required. The high pressure, high temperature environment has the potential to injure people, damage or destroy tools and be a complex challenge for well control. Successful and safe drilling whilst evaluating HPHT wells is a significant challenge to both the drilling and petrophysics disciplines. As the business environment changes across the industry, more HPHT wells will be planned. In recent times few HPHT wells have been drilled globally hence best practice guidelines may only address niche topics and not be current for recently introduced tools.

In the initial process of standard well design, petrophysics or formation evaluation is not included in the well design until the final stages. For HPHT wells however, it is critical to get the petrophysics discipline involved throughout the entirety of the planning, execution and assessment phases. In some cases, technical petrophysical support is required simply to achieve safe drilling of the overburden to target depth.

This presentation establishes a holistic workflow by collating many seemingly disparate cross discipline elements into a coherent, easy to understand guide to successfully execute a HPHT well. The aspects where petrophysical involvement is especially critical include; planning, logistics, contract tendering and management, internal and external stakeholder management, data acquisition program and efficient communication protocols. Each of these key aspects requires customisation to the well in order to achieve and communicate accurate, timely and cost-effective decisions. For every one of these elements petrophysical technical support is a critical enabler for successful well delivery.

A simple way to interpret the holistic framework is to imagine the planning and execution of a HPHT well as analogous to a Venn diagram, with multiple overlapping elements. Delivering each one of these elements individually is not complex, however the challenge of integrating all elements is critical to successfully deliver a HPHT well as any deviation outside of this overlap may lead to an undesirable drilling outcome.

## About the Presenter:

**Jonathan Slade** is a senior petrophysicist for Woodside Energy. Jonathan holds a BSc Geology from Curtin University and has been with Woodside as a petrophysicist for the past 20 years. He has drilled on three continents with exploration, appraisal and development wells, conducting analysis and studies. He has been involved in planning and drilling for several high pressure/high temperature wells.



**DATE:** Tuesday 13<sup>th</sup> August 2019, 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](http://www.fesaus.org) by Friday 9<sup>th</sup> August 3PM



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