

## TURBORUNNER™ CASE STUDY

**Location:** Velesto Energy's Naga 7 jack-up rig, located offshore, Miri, Sarawak, Malaysia

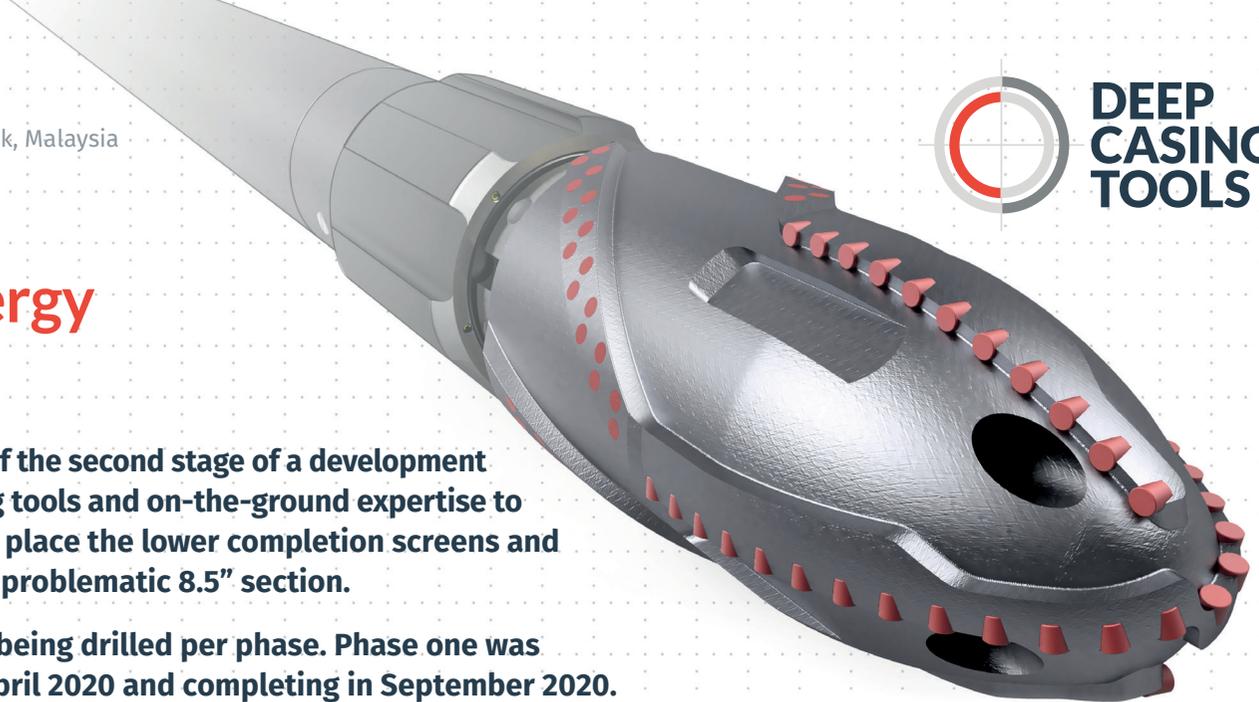
**Well:** E06 – Phase two



# Offshore Sarawak Velesto Energy Naga 7 Jack-up Rig Project

Shell Sarawak required horizontal well completions as part of the second stage of a development totalling six new wells. DCT was selected to provide reaming tools and on-the-ground expertise to help Shell Sarawak run the casing to target depth (TD) and place the lower completion screens and swell packers over the critical pay zones, which included a problematic 8.5" section.

The project was split out into two phases with three wells being drilled per phase. Phase one was completed in February 2019, with phase two following in April 2020 and completing in September 2020.



### THE CHALLENGE

The second phase of the project presented challenging conditions including complex tight spots in all six wells, as well as loss zones, making the run problematic.

In addition to the tight spots, the restrictions on travel for overseas personnel as a result of COVID-19 during the second phase created further challenges.

The problematic nature of the wells and open hole conditions meant experienced on-site supervision and monitoring was essential to ensure TD could be reached.

Without the correct technology and expertise issues could arise such as equipment damage, significant downtime, additional trips and open hole exposure leading to the project overrunning and the operator facing increased costs.

These challenges led to Shell Sarawak turning to DCT to enlist the help of our TurboRunner™ to deploy the lower completion ensuring a higher level of certainty to reach TD, should obstructions be met.

### THE SOLUTION

Shell Sarawak chose to deploy DCT's best in class turbine-powered completions tool, 7" TurboRunner™ (TRS700), in all three wells during the second phase of the 8.5" horizontal hole section.

The tool was chosen due to its track record of landing intermediate casings and liners at TD first time, even in complex wells and with challenging open hole conditions.

DCT was able to help the operator overcome the restrictions on travel for overseas personnel through its well-established relationship with EFTECH Drilling Solutions (EDS), the leading provider of real time drilling operations to the oil and gas industry, which is headquartered in Malaysia.

Together, DCT and EDS were able to provide on-the-ground field support to oversee the running of the tools, whilst complying with social distancing and quarantine requirements set by the local government and the operator.

This was bolstered by remote support and monitoring by DCT's technical operations team based at its headquarters in Aberdeen, Scotland. Furthermore, the customer benefited from rapid tool mobilisation due to the partnership's in-region warehouses facilities.

### THE RESULT

By deploying the TurboRunner™ (TRS700), the energy major had the ability to ream past any formation problems such as ledges, sloughing and any cuttings building up, should these be met.

The success of the project further cemented DCT's & EDS's relationship with Shell Sarawak with the potential for further tool orders and service requirements in the future.

Of importance is Shells input here, with the engineering team stating that the tool was not activated in none of the 5 wells prior to E6-101 as there were no restrictions seen. However, in well E6-101, multiple attempts were made to get past the karst washout zone with TRS activated but to no avail. This is likely the hole condition, not a fault of the TRS tool.