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# The Selection and Optimum Well Testing Practices to Achieve Zero Flaring & Venting in Malaysian Water for a Petronas Field Development

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## **Abstract**

Increased HSE concerns and global economic efficiency from well testing activities especially on its environmental impact have left several oil and gas industries' facing critical challenges to develop and monetize oil reserves. Some of these challenges include handling well effluents from well test unloading operations after well completion with high contaminants such as H<sub>2</sub>S and CO<sub>2</sub> which will exacerbate environmental impact to safety, pollution, and oil spill risks. In addition, mitigation to environmental impact will be constrained to limited deck space and topside loads for offshore wellhead facilities and eventually restricts the footprint of well test unloading equipment.

The scope of the paper is to examine the evolution of well deliverability testing from conventional well test facilities' flaring practices to contemporary smokeless and zero flaring operations applied in a giants and stones oil field in Malaysian water, which is surrounded by a world class environmentally protected marine and coastal ecosystem. The zero-flaring approach allows a demonstration of the safety & emission reduction, cost saving, technical viability, and economic benefits over traditional flaring techniques for 20 to 30 well testing during the life of field.

Previous wells clean up method require flaring of oil and gas before the production facilities and flowlines were operational. commissioned. The application of environment friendly well testing system using the completed flow lines and production facilities enable zero-flaring option to be technically and economically viable. Zero-flaring well testing system provides several attractive benefits, with potential reduction in flaring equivalent of  $\pm 1000$  barrels of oil, pollution avoidance, 40 - 50% schedule reduction and over 40% reduction in total project costs for the field development.

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