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ABSTRACT

Venezuela is one of the foremost producers of heavy and extra heavy crude oil in the world today. Averaging between 2 - 3.5MM bbls/d of total production (depending on government reports vs. industry actuals). The Extra Heavy Oil Association is responsible for around 600,000 bbls/d mainly produced with large volume pumps from depths of around 3000 ft. TVD. The heavy oil producing wells are drilled in variety of schemes, ranging from simple horizontals to complicated multi-lateral wishbone deviations. Various forms of automation are utilized in order to properly manage reservoir characteristics through production optimization. This presentation will discuss some of these automation / optimization methods supported by results from the field.

BIOGRAPHY

Nathan Steffenhagen currently works as Project Supervisor for Tierra Alta in Oman. Prior to joining Tierra Alta, he held the position of Latin America Intelligent Completion Operations Manager as well as Venezuela Production Optimization/Automation Manager for a major Oil & Gas service company.

Based in Venezuela, Nathan's experience over the last 7 years was mainly focused on PCP and Automation applications in the Orinoco Heavy Oil Belt of Venezuela. Initially working as technical support to the multi-national companies, he cumulated his career in Venezuela managing Intelligent Completions and Operations as a whole while continuing to provide support to projects and service. His assistance was instrumental in the design and development of several successful projects in the Orinoco Heavy Oil belt.

Nathan has prior experience working in both the service and production sectors. Prior to Venezuela, he held the position of Field Technologist for a producer in northern British Columbia and Alberta with a responsibility of 1200+ wells on various forms of artificial lift. He graduated from the Northern Alberta Institute of Technology as a Petroleum Engineering Technologist in 1994, and has worked in the industry since.