MARS™ Mature Asset Rejuvenation by Surveillance System

An advanced, integrated system that provides real-time reservoir intelligence to maximize production efficiency

The unified sensors of the MARS unit provide a comprehensive system to reservoir monitoring that enhances production strategies and optimizes production.

Applications

- Offshore and onshore wells
- Geothermal
- High-pressure, high-temperature (HPHT) environments
- Wells without existing or permanent surveillance installations

Features and Benefits

- Integrated sensors provide real-time well conditions for proactive intervention during critical operations and monitoring campaigns.
- Continuous, high-resolution data provides precise fluid flow dynamics, temperature profiles, and acoustic signatures, eliminating dedicated separator equipment, frequent human intervention, and onsite calibrations.
- Fiberline intervention delivers advanced monitoring in challenging wells via extended reach, fiber-deployed installations for advanced flexibility that provides low upfront costs while eliminating the CAPEX requirements.
- Aging asset data management minimizes costly workover applications.
- Smaller asset and personnel on board (POB) footprint allows for more remote location opportunities that cover multiple well operations.

Tool Description

MARS is an advanced thru-tubing intervention and reservoir-intelligence system. Its unified sensors feature distributed-acoustic (DAS), distributed-temperature (DTS) and optical pressure-and-temperature (P/T) data-feeds including non-nuclear, multiphase flow metering–all in real time. This real-time data provides continuous downhole automated production management and field optimization insights to help enhance production and intervention strategies in even the most remote locations. This advanced system offers a comprehensive solution to track and increase daily production/injection profiling of the well, casing leak detection, injectivity performance evaluation, and reservoir management.

Fiber optics enable continuous downhole monitoring of pressure and temperature data, allowing operators to accurately assess the conditions within the well. This data can be used to identify potential issues such as water and steam breakthroughs and casing leaks, providing valuable insights for remedial actions and maintenance.

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Tool Description (continued)

Incorporating a non-nuclear multiphase flow meter (MARS MPFM) offers an alternative to traditional nuclear-based methods of measuring flow rates, eliminating the need for radioactive materials and reducing health and environmental risks. As an optional component to MARS, the flow meter provides accurate measurements of fluid flow to enable operators to assess injectivity performance and optimize production rates.

By combining these technologies, MARS offers a holistic approach to field reservoir management. Operators are better equipped to optimize reservoir development strategies, minimize downtime, and maximize production efficiency.