

Spotlight on technology

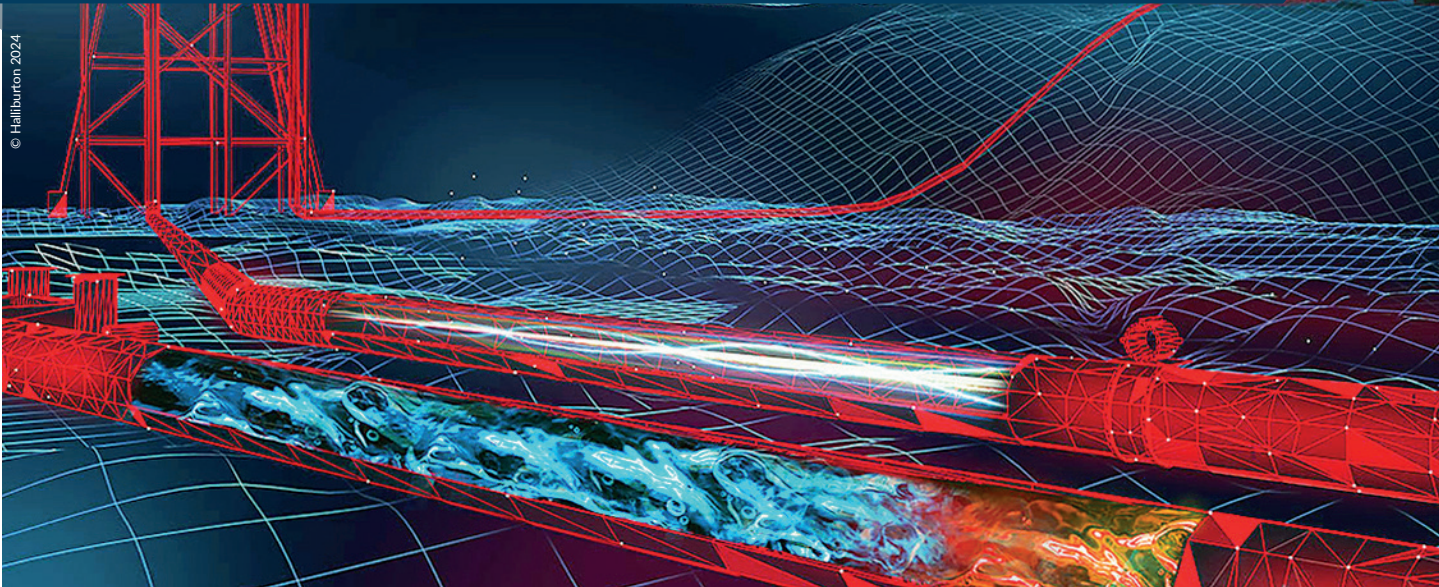
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SURETHERM™ THERMAL CLEANING SERVICE GENERATES HEAT WHERE IT IS NEEDED IN THE PIPELINE

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When paraffin wax builds up in oil and condensate pipelines, operators have several options to remove the blockage. One of the options to clear the blockage is using solvent-based paraffin treatments which are typically most effective when applied at elevated temperatures. In low temperature environments like subsea, however, the ability of solvents to remove significant quantities of paraffin is reduced.

As a result, operators typically experience large-volume solvent treatments, long treatment times and ultimately high costs associated with solvent handling, disposal, transportation and injection methods. To help address this challenge, Halliburton has developed the SureTherm™ thermal cleaning service which offers targeted heat placement treatment.

SureTherm™ is a time-delayed exothermic process that enables precise control over the reaction time so that heat is generated when and where it will be most effective. Recently, this technology has undergone extensive development to achieve better temperature top-out control to ensure the maximum operating temperature of the pipeline is not exceeded. In addition, a new formulation allows for a low-temperature activation treatment to be successfully deployed at subsea temperatures as low as 4°C.

The service treatment's post-reaction products are sodium chloride, water, heat and nitrogen gas. When compared to traditional paraffin solvents and dispersants, the reactant and the resulting products associated with the treatment pose a lower risk to personnel and the environment.

As heat is released, the temperature of the production medium and pipe-wall are elevated and the paraffin gradually starts to melt and dissolve. In most cases, the service can be delivered while the pipeline is in operation with minimal disruption to normal production.

The thermal treatment service can be applied in conjunction with a paraffin solvent such as Halliburton's SureDsolv™ organic removal chemicals. This combination ensures the most appropriate solvent is being applied at elevated temperatures, resulting in the delivery of a customised and effective solution for removing undesired paraffin in a fully controlled manner.

Knowledge of the deposit's distribution profile along the pipeline as well as how severely the diameter is reduced, is critical to the treatment design. Survey methods, such as InnerVue™ non-intrusive diagnostics, are the first step towards a successful remediation plan. Non-intrusive diagnostics excel in low-risk, fast and accurate measurements of debris profiles. The survey information is critical to determine the amount of chemicals, method of accurate placement and potential mechanical interventions that could be needed. Comparative surveys provide invaluable insight into the efficacy of the treatment during cleaning operations and post-treatment success validation.

To improve the integrity and performance of your midstream assets, a carefully deployed combination of diagnostic and chemical solutions is the key to executing a successful remediation campaign.

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