SureTherm℠ Service
Targeted Heat Placement in Remote Locations to Remove Pipeline Deposits

The SureTherm℠ service uses a time-delayed exothermic chemical technology to generate a significant quality of heat after a calculated delay time (Figure 1).

This proprietary technology enables delaying of the exothermic reaction so that it can be pumped into a pipeline to a specified location where the generated heat (Figure 2) can be used to treat deposits such as paraffin wax or hydrate or used to warm components.

The SureTherm service provides important benefits:

- Significantly improves paraffin removal efficiency compared to traditional treatments
- Eliminates risks associated with the use of mechanical scrapers in a reduced ID or restricted pipeline
- Can be applied online (with production) or offline (pipeline shut down)

Paraffin Deposits in Subsea Pipelines

Paraffin wax is one of the most common pipeline deposits leading to decreased production in oil pipelines (Figure 3). Two widely used remediation approaches include mechanical scrapers and / or solvents.

SureTherm Service Enhances Solvent Treatments

Depending upon the specific requirements, the SureTherm service can be applied alone or synergistically with an effective paraffin solvent such as Halliburton’s Paragon℠ solvent. This combination of SureTherm and solvent ensures that the solvent is being applied at elevated temperatures resulting in efficient removal of paraffin from restricted pipelines.

Online or Offline Cleaning

In most cases, the SureTherm service can be applied while a pipeline is in operation with minimal disruptions to normal production. The components can be mixed and injected directly into the production flow.
As heat is released, the temperature of the pipeline fluids are elevated and the paraffin gradually melts or dissolves into the production flow. If the pipeline is shut down, the SureTherm™ service treatment can be designed to deliver a targeted release of heat at the location of the most severe paraffin deposition. Appropriate addition of a solvent such as Paragon™ agent can be considered to enhance the paraffin removal process.

Operational Aspects

Any SureTherm service operation begins with a careful consideration of the engineering aspects of the treatment. In addition, testing of the proposed SureTherm formulation must be completed with the water that will be used for the treatment. This confirms that the desired delay time can be achieved.

The SureTherm service is based on a catalyzed reaction between two components to produce a large amount of heat. The catalyst used in the SureTherm service is a proprietary, solid-phase material that provides a delay in the onset of the chemical reaction. Based on temperature, allowable treatment pressure, and the chemistry of the water system, separate solutions containing appropriate concentrations of the two basic components are prepared and stored in separate tanks. When the treatment is to be pumped, an appropriate amount of catalyst is added to one of the components and the two separate fluids are simultaneously injected into the pipeline (Figures 4).

Enhanced Environmental Performance

The reaction products are sodium chloride (common salt), water, nitrogen gas and heat. Compared to traditional paraffin solvents or dispersants, both the initial reactants and reactant products associated with the SureTherm service pose considerably less threat to personnel and the environment.

The products of the reaction are salt, water, nitrogen gas and heat. These are all environmentally acceptable.

For more information about Halliburton’s SureTherm Service, contact your local Halliburton representative or email pps@halliburton.com.