

LiquiGel® Pig Offers Safe Dewatering Method for Multi-Diameter Subsea

A Gulf of Mexico operator required a safe method to dewater a subsea pipeline upon a recent integrity test. Previous attempts to dewater the pipeline of the hydrotest medium with a foam pig proved unsuccessful. Importantly, the said pipeline was documented to contain heavy paraffin accumulation. Furthermore, the pipeline asset required an application that could mitigate the multi-diameter profile while assuring the client of a complete dewatering task. BlueFin's casted SoliGel pig was designed to travel throughout the different pipeline diameters while mitigating flow assurance challenges and using production gas as the propelling medium.

PLAN OF EXECUTION

1. Project Pre-planning

- Engineering modeling to determine the most efficient and effective method
- Proper attention to risk exposure and mitigation for client through HAZID process
- Assessment and evaluation of previous work performed on the PL

2. Project Preparation and Mobilization

- Modeling and case histories concluded that a pig train consisting of AquaGel and SoliGel would efficiently sweep and de-inventory the test medium while transporting any loose solid debris out of the pipeline
- Mechanical sea fastening on marine vessel

1. Project Execution

- Effective use of back pressure valve system with choke manifold enabled controlled pigging operations
- Safe hydrocarbon receiving methods required a fluid handling and water treatment spread at the pipeline termination point

TECHNICAL ACHIEVEMENTS & BENEFITS

- Executed 24-Hour SIMOPS schedule
- Jobs completed with zero incidents and no environmental impact.
- Successfully removed paraffin deposition throughout the entire pipeline with AquaGel and SoliGel
- Displaced a total of 24 bbls of paraffin and 1,120 bbls of dirty water
- Received foam pig that was unaccounted for during previous dewatering attempts
- Restored pipeline to full internal volume capacity
- Overboard water treatment reduced disposal fluid volume
- Launched LiquiGel® pig train through a short radius 90
- Extruded Gel pig through 2" port

LOCATION

Gulf of Mexico

SPECIFICATIONS

Operator Type: Upstream
Facility: Subsea Pipeline
Hydrocarbon Type: Liquids
Diameter: 6" x 8" x 6" (Multi)
Length: 9 miles
Geography: Offshore

SCOPE OF WORK

Hydrostatic Test Water
Dewatering

CHALLENGE

- Dewatering using production gas
- Mult-diameter subsea pipeline
- Paraffin build-up around the inner pipe wall suspected
- Previous attempts to dewater the pipeline with a foam pig proved unsuccessful
- Short notice of mobilization