

# Deepwater Riser Blockage Remediation

An operator of a mini-TLP experienced flow assurance problems in a subsea oil production flowline system. Operator knowledge and production history identified the issue as a paraffin blockage. Unsure of the blockage location and remediation method, several failed attempts at pressure cycling from the subsea and platform sides resulted in a mechanical remediation need.

## PLAN OF EXECUTION

### 1. Project Pre-planning

- a. In conjunction with the GATE Energy flow assurance team, the production system was modeled and a range of remediation options were determined.
- b. Project-specific tool design was required based on several internal diameter changes between the topside and subsea system. Upon a successful build and test method, the project team received Operator approval for scope readiness.
- c. Fluid handling and chemical equipment SME provided valuable risk management and hazard identification.

### 2. Project Preparation and Setup

- a. Identified an approved method for blockage location using state-of-art diagnostics system.
- b. Arranged coiled tubing (CT) system, fluids/solids handling systems, heated diesel system, and solvent surfactant chemistry for scope alignment. SME with flowline infrastructure enabled identification of proper tie-in connections and associated equipment for flowline alignment.

### 3. Project Execution

- a. Determined blockage location as being approximately 4,500' in the SCR. SIMOPS alongside CT contractor and platform personnel.
- b. CT and eelReel tool were deployed into the SCR via temporary riser.
- c. SME with chemical engineering diagnostics provided proper application of fluid cleaning systems.

## TECHNICAL ACHIEVEMENTS & BENEFITS

- Executed 24-Hour SIMOPS schedule. Entire SCR remediation clean out performed within 36 hours after deployment. Project completed with zero incidents, no environmental impact, within budget, and under schedule.
- Accurate blockage location acquired. 3-5 bbls. of paraffin removed.
- Fast-track modeling of operator system determined an approved remediation strategy. Successfully designed, built, and tested a project-specific tool that could navigate the ID changes of the operator's system. Tool traveled more than 4,500' and navigated multiple bends dia. changes.



## LOCATION

Gulf of Mexico

## SPECIFICATIONS

OD: 6.625 inch  
ID: 5.5 inch  
Length: 17,350 feet

## CHALLENGES

Interface with conventional Coiled Tubing and solids handling systems to mechanically remediate a deepwater flowline.

## CHALLENGES

- Determine the blockage location.
- Access the SCR via temporary riser and hull pipework.
- Remove all organic and inorganic deposition with patented mechanical jetting and scrapping action.
- Multiple internal diameter changes.

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