



## COMPLEX WELLBORE CLEANOUT COMPLETED SUCCESSFULLY CHALLENGES DURING CLEANOUT AND STUCK COILED TUBING STRING OVERCOME USING REAL-TIME DATA ON IDEX

### ANALYSIS OF THE DATA

Coiled tubing cleanouts, although very common, are very dynamic and potentially high-risk operations. Maintaining a sufficient return rate to lift the solids out of the well whilst still operating efficiently is key.

When performing the cleanout conventionally, it became evident that it was not possible to sustain the liquid return rates required to lift out solids. Due to challenges with reading return rates from the separator and a logging run planned afterwards, the cleanout operation was set up with a surface multiphase flowmeter and real-time downhole measurement tools were used. Since all the key parameters could be gathered and displayed clearly on the dashboards in IDEX, it was decided to attempt cleaning the well slightly underbalanced. With a 2000m long reservoir section and an unknown contribution from each zone individually, IDEX Xplorer was vital in giving the required overview from all sensors on one display. This made it possible to respond to the well's dynamic behavior to maintain the required returns rate; thereby saving valuable time and ensuring a successful operation.

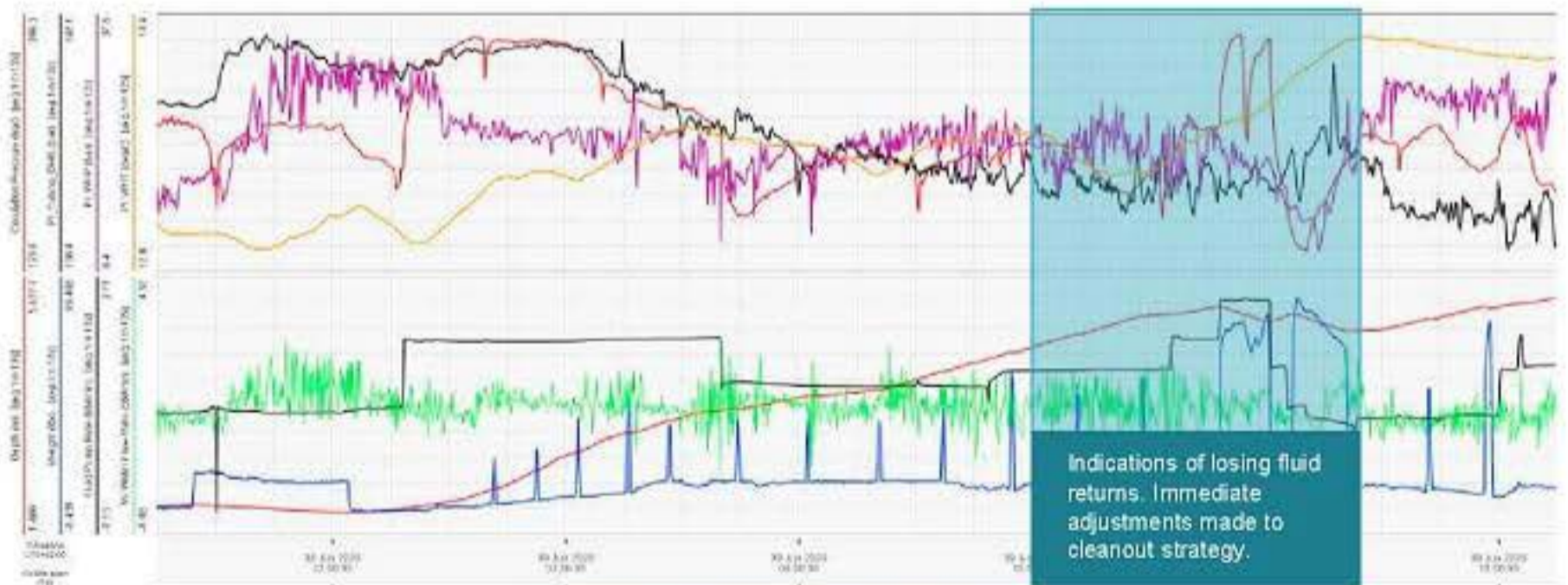


Figure 1: CT Cleanout real time data.

During the final cleanout phase, the team registered higher pulling weights at surface indicating a stuck situation. However, when comparing downhole readings real time on IDEX it was clear that they were not stuck on the tool. Hence, the team based the emergency actions on that knowledge and were able to get free and complete the operation successfully.

**Aker BP Offshore Supervisor –**

**“IDEX proved to be of great value when having to interpret large amounts of operational data, and rationalize these to decide on further action”**

### CHALLENGE

After two major chalk influx events in a Valhall well in 2019, a Coiled Tubing cleanout was required. The original plan was to perform the cleanout overbalanced using nitrified seawater, but it was not possible to sustain sufficient return rates to lift out solids from the well.

### SOLUTION

It was decided to attempt to do the cleanout slightly underbalanced. The challenging cleanout pressure window was managed by overlaying surface and downhole data to make key adjustments during the operation. By analyzing data from multiphase flowmeters on returns, permanent downhole gauges, downhole tool readings and surface coiled tubing parameters, all on one visual display; the most appropriate operational actions were taken.

### RESULTS

The well was cleaned, and subsequent logging could be performed. Learnings from this cleanout were passed on to the next well; saving approximately one week of operations.