Conducting Advanced API 11D1 V3 Validation Testing

DELIVERING IN-DEPTH TOOL DESIGN EVALUATIONS TO EFFICIENTLY COMPLETE API 11D1 V3 TEST AND MITIGATE OPERATIONAL RISKS

NORTH AMERICA - LOUISIANA

CHALLENGE

- Provide a time and cost effective solution to test equipment while following API 11D V3 spec testing requirements.
- Mitigate testing risks and assist with the transition from internal testing, to validation testing, and ultimately field operations.

SOLUTION

- Evaluate design parameters of the tools tested to identify any failure points
- Offer design solutions based on evaluation findings
- Preparing optimized test procedures

RESULT

- Deliver a comprehensive test optimized to one day to minimize time in the stand and ultimately reduce testing costs.

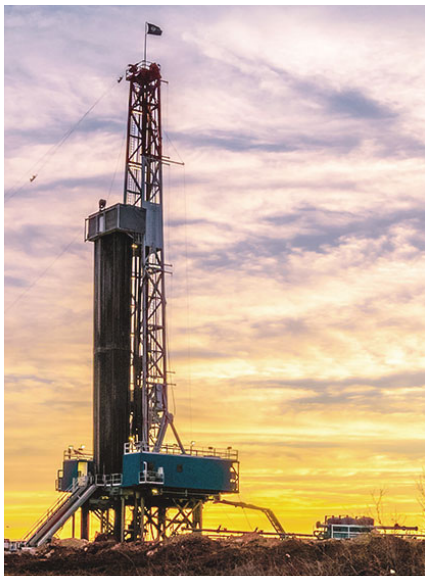
Proper frac plug, bridge pluge, or packer design can affect the tool's operation efficiency as well as testing times. Poorly plugs or packers may require multiple day or week-long tests while following API 11D1 requirements. Testing plugs/packers constantly for long periods of time may contribute to high testing costs. When designing top-of-the-line plugs/packers, the goal is to mitigate risks and ensure the tool is properly handled from the testing phase into the field test (then released to operation).

CHALLENGE

Assess and offer operational design insight for plugs/packers to enable efficient testing while following API 11D1 V3 testing requirements.

A proper design is crucial for plugs/packers, not only for operation purposes but also for testing purposes. A properly designed plug/packer will test well and function properly in the field.

The challenge is then to develop a streamlined testing process to reduce testing cost while also ensuring the tool is durable and fit for application.



SOLUTION

PES provided a fully designed bridge plug that completed an API 11D1 test in one day per tool.

PES offered specific design solutions based on early findings to mitigate testing risks and in preparing the test procedures, which minimized test times. The test procedures included testing the minimum amount of hold points. For this application, it was required to test two sides, 7" and 9-5/8". The maximum casing ID was tested for a lightweight and heavy-weight casing for both sizes. The test resulted in a time frame of about 24 hours as opposed to 2-3 days.

RESULT

PES delivered a comprehensive test procedure optimized to be completed in one day. Following this test procedure resulted in minimizing the tool's time in the test well and ultimately reducing cost testing costs.

PES' streamlined process and expertise reduced the amount of times tools are to be tested to ensure the equipment is durable and be cost-effective long-term.

PES
PRACTICAL ENGINEERING SOLUTIONS LLC