



VAM® SPRINT-SF

for extreme torque applications

SUCCESS STORY VALLOUREC

Overview

Unconventional wells have evolved in design as operators push the boundaries for increased efficiencies. In turn, the quest for these increased efficiencies has driven the need for new tubular technology to be developed. VAM® SPRINT-SF is a new connection that was developed to help operators with this challenge. An operator in the Permian was able to take advantage of the new design in a series of field runs in Midland County. The exceptionally high operational torque allowed them to overcome friction and safely rotate during cementing with reduced risks of ID restrictions. It also allowed them to plan for an extended lateral and the torque that would be required to get the casing to bottom. With less than four turns to make up, VAM® SPRINT-SF allowed for efficient running time with zero rejects.

Challenge - Operational torque for rotation

Industry standard semi-premium connections are being used in unconventional wells in a manner that they weren't designed or tested for at the time of their development. Casing strings are often "worked" into the hole with high tension/compression and torque combined loads. In addition, high numbers of completion stages are adding ever-increasing fatigue loads. An operator in West Texas approached Vallourec with problems manifesting themselves as ID restrictions adding remedial operational time

and cost to their wells. They also had a desire to use higher torque for a new cementing practice but were unsure of combined load limits. VAM USA partnered with the operator for an in depth study. Well loads were used with FEA models and WELLCAT™ for a digital copy of the wells. In those models, it was found that when working the pipe, high levels of torque were applied at the same time as high tension and compression. All loads in isolation were within connection ratings. However, the combined loading (VME) resulted in load points outside of the connection operating envelope and the model predicted the restrictions at the depths seen in the field.

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“VAM® SPRINT-SF has proven to be the key that unlocked the door to better cement jobs and effective casing installation on longer laterals.”

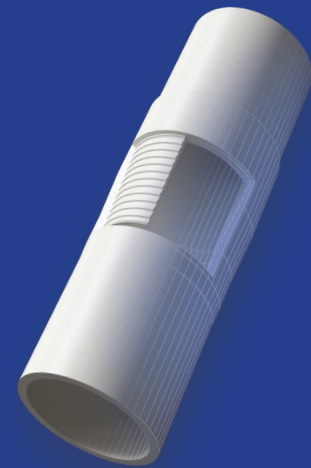
US Onshore Operator

Solution - A high torque, semi-premium connection tested for the application

This modeling scenario was utilized in the development of the new VAM® SPRINT-SF. The same FEA/WELLCAT™ approach allowed for effective modeling of operating limits which were then used for physically testing in VAM USA's Connection Technology Center. The operator followed the development and offered operational information. Once the design was validated through physical testing, they opted for a four well trial with 5½" 20# SPRINT-SF (capable of delivering 40,000ft.lbs). With a TMD of over 24,500 ft and casing joints pushing the limits of Range 3 length at over 46 ft, 10% fewer connections had to be made up as compared with industry standard casing length. Fast make up was proven with 3.5 turns to optimum torque after stabbing. Zero rejects were seen on the first run that averaged close to 30 jts/hr.

To help facilitate the trial, a Vallourec smart package was used. This allowed for the CVD to take place offsite of the rig. Delivery for the full string of pipe took place in 3.5 hours with less people at the rig site. A digital tally was handed to the company man to ease operations. To cut thread protector removal time while keeping the connections safe from the elements during running, quick release protectors were used. VAM® Field Service ran torque turn so it was optimized for this connection at job start. Once the string was in place, the connections high torque was utilized to get the string turning during the cement job.

A peak of just over 16,000ft.lbs was seen to get the string moving during installation and 22,000-24,000ft.lbs was sustained during the cementing job. After completion, the rig ran a gauge ring and confirmed that there were no ID restrictions.



Benefits/ Results - Successful field trials for high operational torque needs

- Maximum torque with sealability up to 40,000ft.lbs
- One of the fastest connections on the market for make up with 3.5 turns to make up from stab.
- Low to no rejects to prevent costly backouts on the rig.
- Longer than average joints to limit the number of connections that need to be made up.
- Vallourecs.smart Services to ease rig operations.
- Fast delivery to prevent delivery truck back up.
- Material delivered ready to run so no cleaning, drifting, etc needed.
- Digital tally & Traceability – for precise footage measurements

OTHER SUCCESS STORIES

To find out more about VAM® SPRINT-SF and its benefits, visit solutions.vallourec.com

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