

PDC Energy Cuts Iron-Related NPT During Zipper Fracs

12 MonoFlex technology units replace 216 pieces of conventional frac iron—and their connections—to improve efficiency in multiwell pad fracturing

To reduce rig-up time and eliminate excess frac crew on location, PDC Energy deployed single-piece frac fluid delivery technology between the zipper manifold and the frac tree.

Reduce frac iron on 12-well pads

PDC Energy develops unconventional fields with an average of 12 wells per pad in up to 6 zipper groups, aiming for maximum efficiency in hydraulic fracturing pumping operations. Because each pad requires an average of 216 pieces of frac iron between the zipper manifold and the frac tree, rig-up is slow, even with 4 to 5 extra crew members brought in just for the rig-up. The large volume of iron also increased the risk of leaks because of the large number of connections.

Shift iron from one zipper group to the next

To reduce iron requirements and prejob rig-up time, PDC asked the pressure pumping supplier to rig up the frac iron for one zipper group at a time, reducing the iron—and rig-up time—required. However, it necessitated shutting down the fracturing operation for 16 to 24 hours when it was time to shift the iron to a new set of wells.

Deploy a flexible, dual-connection solution

Continuous collaboration enables Cameron to help PDC achieve its goals of efficiency and reliability improvement with new technology. In this case, Cameron recommended deploying MonoFlex* dual-connection fracturing fluid delivery technology to replace the 216 pieces of conventional frac iron between the zipper manifold and the frac tree with just 12—one for each well. With only two connections per unit, the flexible MonoFlex technology significantly accelerates rig-up time and reduces leak risks.

Cut iron-related NPT and connection leaks

PDC pumped approximately 13,250 fracturing stages through MonoFlex technology in 2019 and 2020, reducing its iron-related NPT—mostly related to remediating connection leaks—by 2% to 5%.

Coincidentally, PDC discovered that MonoFlex technology simplified winter operations: Only one line had to be heated between the zipper manifold and the tree, rather than four to five lines in a conventional rig-up.



MonoFlex technology helped PDC Energy cut iron-related NPT during zipper frac operations by eliminating more than 200 pieces of frac iron and their connections—each one a potential leak path.