

New Technologies Enhance Operational Efficiency in Difficult Gravel-Pack Operations

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State-of-the-art technologies were instrumental in the success of this completion. The equipment innovations included special packer technology, a multi-position weight down tool with a HZGP pressure maintenance assembly, and a new type of sand control screen. The proprietary pressure maintenance assembly provided a continuous flow path through the packer assembly in order to maintain a constant hydrostatic pressure on the wellbore while running the completion, controlling borehole integrity. Spiral centralizers were used to reduce drag during installation and lift the long horizontal screen section off the low side of the hole, enabling uniform placement of the gravel pack over the entire interval. The successful placement of a highly permeable sand filter around a mechanical mesh filter over a long horizontal section was key to the success of this difficult completion. After the gravel packing was completed, the lower-end screen section was isolated by a proprietary screen plug assembly, which prevents sand production from the potentially exposed lower section of the openhole.

The real time operations (RTO) data acquisition and management system allowed the personnel at the wellsite as well as all remote personnel to monitor critical well parameters during the job and make immediate decisions on procedural changes. The system uses advances in software operating systems, networking, telecommunications and Internet/Intranet access that provides users with real-time data regardless of their locations.

This job illustrates the enhanced capabilities that can be gained from adapting innovative techniques to traditional procedures. The best practices from this experience will be used in future jobs. The following have been planned:

- The RTO system will be expanded from the operator's Intranet to the Internet so that personnel can review wellsite information wherever they may be. This will allow SMEs in all locations to monitor wellsite data.
 - Comprehensive job histories will be recorded as they occur so that they can be reviewed in many locations.
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