



# Isolating Open Frac Sleeves in the Bakken

## PROBLEM

During the frac job on a 34 stage ball and sleeve type completion, it was discovered that a frac sleeve towards the heel of the well had prematurely opened after the 1st stage had been stimulated. With this sleeve open, none of the remaining stages could be fractured.

## SOLUTION

- Mohawk's premium cased hole patch system *MetalPatch* was deployed across 3 frac sleeves that were milled out to 3.800 in. inside 4-1/2 in. 11.60 lb/ft casing
- The *FracPatch* system, was configured to run through the ID restrictions of the frac sleeves and seal off in the larger casing ID
- Frac Sleeves did not have to be milled out to full casing drift
- The patch was installed in one trip with no shoe drill out required, keeping the remaining frac sleeves free of debris
- With Mohawk's premium expandable connections, the expandable patch can be as long or as short as required

## RESULTS

- The expandable patch was successfully deployed and expanded over the milled frac sleeves in one trip
- The remaining stages were successfully fractured by dropping the remaining frac balls through the 3.259 in. ID of the patch down to the unopened frac sleeves

## PROJECT DETAILS

**Location:** North Dakota

**Date:** October 2013

**Well Measured Depth:** 20,883 ft

**Inclination:** 90°

**Casing:** 4-1/2 in. 11.60 lb/ft

**Patch Length:** 730 ft

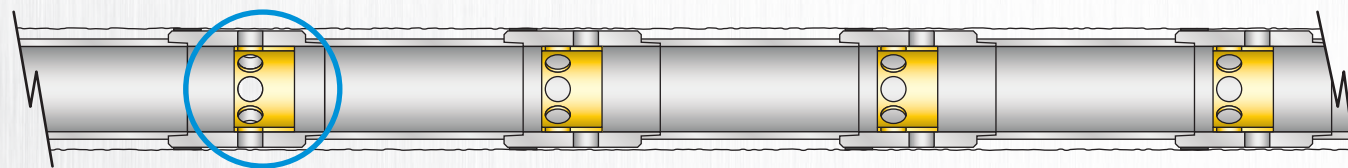
**Installed Patch ID:** 3.259 in.

**Top of Patch:** 11,771 ft

**Bottom of Patch:** 12,500 ft

**Frac Pressure:** 9,500 psi

## BEFORE



## AFTER

