

Mull Unit Sorrento Field (MUSF) #19 Nitrogen Injection Proposal

SE/4 NW/4 Cheyenne County, Colorado

October 29, 2018

Mull Drilling Company, Inc., as Unit Operator, proposes to convert the MUSF #19 from a Morrow Formation producer to a Morrow Formation Nitrogen Injection well. This will enhance production, protect correlative rights and maximize efficient recovery of oil.

The MUSF #19 was chosen for its position in the reservoir near the limit of the unitized formation and relatively low current production rate of 7 BOPD, .5 BWPD, and negligible gas.

The injecting Nitrogen will be sourced at the in-place Air Liquide Membrane Nitrogen Unit located at the MUSF #14 wellsite. The gas will be piped to the MUSF #19 with existing and supplemented flow lines and compression. See Facility Diagram.

It is envisioned to start injection at rate of 200 mcf/d, and not exceed 500 mcf/d. This is somewhat of a pilot program expansion. The offset production wells will be constantly monitored for pressure changes and gas compositional changes (increases in N₂). Injection rates will be adjusted to maximize pressure maintenance, increase oil and prevent premature N₂ break through. Mull will conduct State approved MITs.

Mull is requesting a maximum surface injection pressure of 445 psig based on the approved Form 33 of the MUSF #14 and field experience. The #19 historically has shown lower permeability than the #14 and the #14 has stayed well below the 445 psig max surface injection pressure (see attached graph), averaging 82 psig since 10/16/13 inception. Reservoir pressure varies across the field but is well below 100 psig.

Respectfully Submitted,



Steve Anderson

Senior Vice President

Mull Drilling Company, Inc.