

SYSTEMS AND METHODS FOR PROVIDING ZONAL ISOLATION IN WELLS

Abstract

Systems and methods for providing zonal isolation in a hydrocarbon well include or utilize a tubular assembly having an upstream manifold, a gravel packing conduit, a transport conduit, a leak-off conduit, and a downstream flow path. The tubular assembly is adapted to receive a gravel-laden slurry and to direct at least a portion of the same to the gravel packing conduit. The gravel-laden slurry exiting the gravel packing conduit packs the annulus between the tubular assembly and the wellbore by dehydrating at least in part through the leak-off conduit. The leak-off conduit is further gravel-packed by the gravel-laden slurry received by the tubular assembly. The leak-off conduit is dehydrated through a flow control valve. Together, the gravel packed annulus and the gravel packed leak-off conduit provide a gravel-based zonal isolation system.

Figure 7A