

OFF THE BEATEN TRACK: OIL SHOWS IN THE UPPER SHAUNAVON MEMBER, WEST OF THE MAIN OIL FIELD TREND, SOUTHWESTERN SASKATCHEWAN

Arden Marsh* and Peter Hill

Saskatchewan Geological Survey, Saskatchewan Ministry of the Economy

Abstract

The Shaunavon Formation has been a known oil producer in southwestern Saskatchewan since the early 1950's. Initial production came from the Delta field (Township 15, Range 19W3) in mid-1952, and was followed shortly thereafter by a second producer in the Eastend field (Township 6, Range 20W3) later in the same year. The Shaunavon Formation is divided into two members: the upper member contains a mixture of clastic and carbonate sediments, and; the lower member is a fairly homogeneous carbonate deposit. To date, even with recent interest in the lower member, the majority of the production from the Shaunavon interval in southwestern Saskatchewan has been limited to mixed clastic/carbonate reservoirs of the upper member of the formation. As of December 2013, there have been 2,622 wells drilled into, and have at some time produced oil from, the highly heterogeneous Upper Shaunavon Member in the southwest of the province. Cumulative production from the upper member is in the order of 63.2 million m³ (397.6 million Bbl) since 1952, which accounts for 97% of the production from the entire formation, and in the last two years has seen an increase in production of 2.6 million m³ (16.5 million Bbl).

The purpose of this presentation is to bring awareness to the potential of production from the Upper Shaunavon Member away from the main oil field trend. Many of the areas under consideration to the west of this well-known producing area were originally drilled and in many cases cored in the 1960's, however, due to limited drilling and completion techniques at that time the majority of these wells rarely saw any production. This is despite the fact that many of these wells can contain up to several metres of heavily oil stained reservoir, very similar to that seen in known Upper Shaunavon Member pools such as those from Rapdan to Dollard (Township 3 to 7, Ranges 19W3 to 21W3). This presentation will showcase a couple of core from wells drilled west of the Shaunavon Oil Field Trend, as well as core from a known and highly productive Upper Shaunavon Member pool. The core, together with maps and cross-sections showing the thickness and distribution of this reservoir, west of the main Shaunavon Formation Oil Field Trend, will hopefully spark some interest from industry to look at further expanding this oil play by utilizing data that may have been overlooked.