

Morgan and others, 1977

Data Set 47

Reference: Morgan, J.T., F.S. Cordiner, and A.R. Livingston, 1977, Tensleep reservoir study, Oregon Basin Field, Wyoming -- reservoir characteristics: Journal of Petroleum Technology, v. 29, p. 886-896.

Authors' affiliation: Marathon Oil Co.

Age: Pennsylvanian

Formation: Tensleep Formation

Location: Oregon Basin Field, Big Horn Basin, Wyoming

Well: one well, unnamed.

Depth range: Exact depth not given; between 3500 and 4000 ft.

Depositional Setting: Interpretations vary from eolian to coastal dune to shallow marine to marine.

Lithology: "The sandstone is moderately to poorly sorted, subangular, and very fine to fine-grained. It commonly contains an unusually small clay fraction -- less than 2 percent. ... Grains are predominantly quartz with some feldspar. ... Pores are relatively large and open. Some have been enlarged by solution. Pressure solution has resulted in grains growing together; some quartz grains have been enlarged slightly by quartz overgrowth cement."

Cements: "Three cements, quartz, dolomite, and anhydrite, are present. Quartz cement does not appear to cause significant reservoir variations in the field. Anhydrite, which commonly has traces of associated gypsum, occurs in some abundance, but dolomite is the dominant cement. Dolomite and anhydrite cements fill pores between sand grains. Within some thick cemented zones, dolomite has replaced the sand grains. Where present, the dolomite and anhydrite cements cause the Tensleep to be nonreservoir. ... The cement distribution appears to be erratic. ..."

Porosity variations: "Porosity variations in cores are related primarily to the amounts of dolomite and anhydrite and dolomite cement. ... The close relationship between porosity variation and the amount of nonreservoir dolomite and anhydrite suggests that variations caused by quartz cement, texture difference, clay content, solution, etc., are of minor significance for evaluation of the reservoir."

Production: oil

Core measurement conditions: not stated.

Data entry: manual entry from Figure 10 in the referenced paper.