

Cox and others, 1994

Data Set 15

Reference: Cox, D.L., S.J. Lindquist, C.L. Bargas, K.G. Havholm, and R.M. Srivastava, Integrated modeling for optimum management of a giant gas condensate reservoir, Jurassic eolian Nugget Sandstone, Anschutz Ranch East Field, Utah Overthrust (USA): Chap. 22 in Stochastic Modeling and Geostatistics (J.M. Yarus and R.L. Chambers, eds.), American Association of Petroleum Geologists Bulletin, Computer Applications in Geology, No. 3, 1994.

Authors' affiliation: Amoco Production Co., Univ. of Wisconsin, FSS International

Age: Jurassic

Formation: Nugget Sandstone

Location: Anschutz Ranch East Field, Southwestern Wyoming, United States

Well: Well 29-12

Depth range: 12,283-12,308 feet.

Lithology: Eolian sandstone -- the 25-foot interval tabulated here is described as grain flow by the authors.

Alteration: not given.

Production: Retrograde gas condensate and volatile oils.

Core measurement conditions: whole core samples, standard conditions.

Data entry: Entered from computer printout provided by S. J. Lindquist. See Figure 6 of reference.

Note: Core depth differs from log depth of Figure 6 by 32 feet.

Permeability orientations: khmax is maximum horizontal permeability; kh90 is horizontal permeability at 90 degrees from khmax, kvertical is permeability along axis of core.

Comment: This interval was selected to illustrate an exceptional trend in a consolidated sandstone: permeability increases with depth in an interval of nearly constant porosity and uniform environment. The gamma-ray log (see figure 6 of reference) tracks the permeability data and indicates a fining-upward sequence. It appears that a well-sorted sandstone with grain size that gradually decreases upwards has retained the permeability-porosity signature of an unconsolidated sand pack, unmodified by diagenetic processes even though porosity has been reduced to 16 percent.