



Philip H. Nelson, 2009, Pore-throat sizes in sandstones, tight sandstones, and shales: AAPG Bulletin, (93) 3 (March), pp.329-340, Figure 2. AAPG ©2009 Reprinted with permission of Philip H. Nelson, and by permission of the AAPG whose permission is required for further use.

sizes covered by Geoscience Scales of Investigation

Comments:

The work of Nelson (2009, Figure 2) shown here is especially significant when one considers that our exploration and production target formations are increasingly tighter sandstones, mudrocks, and shales (that is, they have less porosity and permeability).

In shales and mudrocks, the pores and pore throats begin to approach the size of the molecules of hydrocarbons that we have targeted for production. As well as being of concern for production, we must also consider molecule sizes when we perform measurements on cores. Our choice of the fluid used in some core measurements may have a substantial effect on the results that are obtained.

The outlined box, in green, near the center of the graphic shows the range of pore throat sizes in the Barnett shale (after Lewis, 2016; from Sondergeld et al, 2010)

The outlined box, in blue, at the right side of the graphic shows the overlap between the sizes portrayed here and those shown in the graphic titled *Geoscience Scales of Investigation*.

References

Nelson, Philip H., 2009, Pore-throat sizes in sandstones, tight sandstones, and shales, AAPG Bulletin, (93) 3 (March), pp.329-340, Figure 2; American Association of Petroleum Geologists, Tulsa, Oklahoma.

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Lewis, Rick, 2016, notes from AAPG Basic Well Log Analysis course, March.

Sondergeld, C. H., R.J. Ambrose, C.S. Rai, J. Moncrieff, 2010, Micro-Structural Studies of Gas Shales, Society of Petroleum Engineers, paper 131771.

This document is intended to be updated periodically as necessary to include new and corrected information.

Questions and comments about this document are welcomed and encouraged. Please contact Dan Krygowski at The Discovery Group; DanKrygowski@Discovery-Group.com.