



**Energy - Oil and Gas Research; Researchers from University of Texas at Austin Describe Findings in Oil and Gas Research (Degradation of Fracture Porosity In Sandstone By Carbonate Cement, Piceance Basin, Colorado, Usa)**

489 words

29 November 2019

Energy Weekly News

ENRGWK

976

English

© Copyright 2019 Energy Weekly News via VerticalNews.com

2019 DEC 6 (VerticalNews) -- By a News Reporter-Staff News Editor at Energy Weekly News -- Investigators publish new report on Energy - Oil and Gas Research. According to news reporting originating from Austin, Texas, by VerticalNews correspondents, research stated, "Cretaceous Mesaverde Group sandstones contain opening-mode fractures lined or filled by quartz and, locally, calcite cement. Fracture occlusion by quartz is controlled primarily by fracture size, age and thermal history."

Financial supporters for this research include ExxonMobil-Bureau of Economic Geology (The University of Texas at Austin) Collaborative Study on Unconventional Reservoirs 2008-2010, Chemical Sciences, Geosciences and Biosciences Division, Office of Basic Energy Sciences, Office of Science, United States Department of Energy, Fracture Research and Application Consortium.

Our news editors obtained a quote from the research from the University of Texas at Austin, "Fracture occlusion by calcite is highly heterogeneous, with open and calcite-sealed fractures found at adjacent depths. In the Piceance and in other basins, processes that control the distribution of these calcite cements have been uncertain. Using pore and fracture cement petrography, fluid inclusions, and isotopic and elemental analysis, we show that host-rock calcite distribution and remobilization govern porosity degradation and occlusion of fractures >1 mm wide by calcite. Fluid-inclusion analyses indicate calcite cement precipitation at 135-165 degrees C. Sr-87/Sr-86 ratios of calcite and the presence of porous albite suggest that detrital feldspar albitization released Ca<sup>2+</sup>, driving carbonate cement precipitation. In host rock, both albite and calcite content decreases with depth along with greater fracture porosity preservation. Although the cement sequence Fe-dolomite -> ankerite -> calcite is widespread, Fe-dolomite and ankerite occur as host-rock cements only, with detrital dolomite as preferred precipitation substrate."

According to the news editors, the research concluded: "We find that the rock-mass calcite cement content correlates with fracture degradation and occlusion, and can be used to accurately predict where wide fractures are sealed or open."

For more information on this research see: Degradation of Fracture Porosity In Sandstone By Carbonate Cement, Piceance Basin, Colorado, Usa. Petroleum Geoscience, 2019;25(4):354-370. Petroleum Geoscience can be contacted at: Geological Soc Publ House, Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath BA1 3JN, Avon, England.

The news editors report that additional information may be obtained by contacting P. Eichhubl, University of Texas - Austin, Jackson School of Geosciences, Bur Econ Geol, Austin, TX 78758, United States. Additional authors for this research include T.B. Weisenberger, S.E. Laubach and A. Fall.

Keywords for this news article include: Austin, Texas, United States, North and Central America, Oil and Gas Research, Energy, Alkalies, Anions, Carbonates, Carbonic Acid, University of Texas at Austin.

Our reports deliver fact-based news of research and discoveries from around the world. Copyright 2019, NewsRx LLC

Document ENRGWK0020191129efbt000lg