The Geology of Beer

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Abstract

Being safer than water, beer has been an important staple of health since the middle ages. For the producers, it has been recession proof as sales are inversely correlated to the oil price.

Two of the main historical factors of beer, water and natural refrigeration, are geological in that they rely on bedrock and faulting. Four anions are particularly responsible for a beer's characteristic taste: Ca, Mg, Na, and K.

Two regional case studies are presented that link beer to large-scale geological processes: (1) Laurentia (USA) and (2) the former passive continental margin of Laurussia (northern Europe). A generalized beer system from source to trap is introduced in analogy to petroleum. Finally, the role of beer in hydraulic fracturing and other geological applications is discussed.

It is concluded that there are presently no Friday evening alternatives to beer.

Biography

Jürgen Kraus was born into the former Benedictine brewery "St. Michaelsberg" in Bamberg, Franconia (Northern Bavaria). Bamberg offered 65 breweries at around 1900 of which 10 still exist. It is widely considered to be the world's beer capital, offering the unique "Rauchbier".

Jürgen is a structural geologist and international exploration geologist with his own consulting company, Franconia Geoscience Ltd. He is also a director of the Canadian Global Exploration Forum (CGEF) and co-chair of CSPG's International Division. Jürgen held his first petroleum-related position in 1987. He received an M.Sc in Structural Geology and Geophysics from Göttingen University in 1991 and a Ph.D. in Structural Geology from the University of New Brunswick in 1998.

After assignments with the Geological Survey of Canada in Ottawa, Aachen Technical University, and the Saskatchewan Geological Survey, he joined Shell Canada in 2001 and created drillable prospects in the Foothills at Waterton and Pincher Creek. After establishing his consultancy in 2003, Jürgen has created prospects and developed new play concepts in deformed basins in China,

Mongolia, North Africa, and Europe. He also worked on Inca gold deposits in the Ecuadorian Andes.