

Interactive comment on “From oil field to geothermal reservoir: First assessment for geothermal utilization of two regionally extensive Devonian carbonate aquifers in Alberta, Canada” by Leandra M. Weydt et al.

J. Borgomano (Referee)

borgomano@cerege.fr

Received and published: 12 February 2018

The paper needs only some more precision and explanations (see comments on the pdf files). The major comment I have is:

a missing topic in this interesting chapter is the "upscaling-downscaling" of the properties (reservoir and geothermal); there are no measurements or estimation of properties at greater scale than the plugs; so all the extrapolation made from plug measurements to larger scale are implicitly based on averaging and assuming some

C1

level of "stationarity" within stratigraphic units or sedimentary units. Another implicit assumption is that rock properties statistics are not dependent of sample size (no "support effect"). Certainly not the case for permeability in carbonate reservoirs! All these assumptions should be discussed prior to the conclusive statement on the geothermal potential and extrapolation of core plug data.

Please also note the supplement to this comment:

<https://www.solid-earth-discuss.net/se-2017-129/se-2017-129-RC4-supplement.pdf>

Interactive comment on Solid Earth Discuss., <https://doi.org/10.5194/se-2017-129>, 2017.

C2