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Deformation and Fluid Flow in the Huab Basin and Etendeka Plateau, NW Namibia

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Abstract

The Lower Cretaceous Twyfelfontein sandstone formation in the Huab Basin in NW Namibia shows the effects of volcanic activity on a potential reservoir rock. The formation was covered by the Paraná-Etendeka Large Igneous Province shortly before or during the onset of South-Atlantic rifting. Deformation bands found in the sandstone trend mostly parallel to the continental passive margin and must have formed during the extrusion of the overlying volcanic rocks, indicating that their formation is related to South-Atlantic rifting. 2D-image porosity analysis of deformation bands reveals significant porosity reduction from host rock to band of up to 70 %. Cementation of the sandstone, linked to advective hydrothermal flow during volcanic