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*In Situ* Stress State – Tiguentourine Field, Southeastern Algeria

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The *in situ* stress tensor in the Tiguentourine Field of southeastern Algeria was constrained using image and density logs, rock-strength data and closure pressures from hydrofracture decline analysis. The estimates derive from Cambro-Ordovician sandstone reservoirs of the Ajjers, In Tahouite and Tamadjert formations, all possessing high rock strengths (average uniaxial compressive strength: 21,000 psi). Measurements were made between 2000m and 2500 m measured depth (approximately 1500-2000 m subsea). Image-log data from four recently drilled wells record both tensile (dominant) and compressive (subordinate) well-bore failure modes. These data document relatively consistent estimates of the orientation of  $S_{Hmax}$  over an area of 55 km<sup>2</sup> with an average orientation of 156° (+/- 10°). Analysis indicates a strike-slip state of stress with stress ratios of  $S_{Hmax}/S_v$  of 1.04 and  $S_{hmin}/S_v$  of 0.59. We attribute this stress state to the far-field effects of the Cenozoic Alpine closure of the Tethys. The orientation of the Tiguentourine *in situ* stress tensor departs from the more northwesterly orientation of  $S_{Hmax}$  in the Timimoun basin (Begoul, 1995) and the west-northwest orientation in the Rhourde El Baguel field (Hassi Messaoud Ridge). This departure at Tiguentourine may be due to stress refraction adjacent to the regional NNE trending Fadnoun fault. However, a strike-slip stress state persists among all three areas.