

What Lies Beneath? Insights From a New Regional Seismic Survey Across Somaliland's Onshore Basins

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ABSTRACT

Oil has been known of in Somaliland for over 100 years where seeps around Daga Shabell were documented by early 20th century expeditions to the area. Subsequently, several reconnaissance field visits were made to the area by oil companies but drilling did not take place until the late 1950's towards the end of a period where Somaliland was protected diplomatically by Britain. In total, 19 exploration and stratigraphic test wells were drilled in the late 1950's on surface geology and seeps, 1 of which flowed oil from Jurassic limestones. Following the formation of the Somali Republic in 1960 and the subsequent military coup d'état in 1969 a 28 year hiatus in oil exploration was only cut short in the late 1980's when Chevron and Conoco, buoyed by Hunt Oil's success in Mesozoic rifts on the conjugate in Yemen conducted seismic acquisition and drilled 3 wells. The onset of the Somali Civil War and the collapse of the central government in 1991 brought an abrupt halt to exploration efforts; it is now 27 years since the last well was drilled. Genel has been exploring onshore Somaliland since August 2012 when it was awarded a 75% operated interest in the SL-10-B and SL-13 licences. In November 2012 Genel acquired a 50% interest in the adjacent Odewayne license giving it a total acreage footprint of 40,000km². In November 2016 the Government of Somaliland signed a contract with BGP to acquire a speculative 2D seismic survey over the Genel operated licences. Seismic acquisition occurred during the first half of 2017 providing a glimpse into the Mesozoic rift basins that have been postulated to be present since the early 1980's. Prior to the new survey only 2 reconnaissance seismic lines totalling 150 km in length had been acquired in the eastern half of SL-10-B/13 as part of Conoco's 1987-89 regional 'Greater Nogal' survey. Seismic data has never previously been acquired across Odewayne despite the presence of active hydrocarbon seeps. Ahead of seismic acquisition Genel has been developing its understanding of the regional tectono-stratigraphic framework through a combination of airborne gravity and magnetics, reconnaissance geological fieldwork, structural mapping and surface seep analysis. This paper presents insights from the new regional seismic survey and attempts to tie them into the regional geological framework for the Horn of Africa.