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New Oil in an Old Basin - Onshore Exploration in Central Kazakhstan

The 30,000 km² South Turgay Basin, Central Kazakhstan, was considered a mature productive province. Part of Hurricane Hydrocarbons' growth program has been to add reserves by exploration in its licenses in the basin. The Mesozoic basin was only mature and explored in what was interpreted as the post-rift section. Little testing of the syn-rift, with its mature source, had been conducted. A basin analysis project was undertaken, defined new play / prospect types, prior to drilling in the syn-rift section.

The Basin Exploration Study comprised analyses of 2D regional seismic data covering the main exploration license area; well-log interpretation of 4km deep Russian wells; outcrop analogue information from fieldwork conducted in the exposed Jurassic of the Karatau Mountains; the development of tectonic and sedimentary models explaining the complex structural and stratigraphic configurations identified on seismic; burial history profiles determined from published data and basin modeling; play fairway analysis based on regional mapping of key stratigraphic intervals identified as sources, reservoirs and seals; migration pathway definition throughout basin history, determined by palinspastic reconstruction of basin evolution; fault timing giving the key times of structural trap formation and possible trap breaching; stratigraphic trap generation studies developed by interpretation of stratigraphy and depositional environments; and the eventual risk analysis and ranking of over twenty defined leads and prospects.

An extensive drilling program was planned, resulting in the discovery of high API, sweet crude in the first two exploration wells. Exploratory drilling continues to target other prospects in the Jurassic interval of the Basin.