

## **Upper Cretaceous –Early Eocene Carbonate Setting In Pontide Region to Integrate Offshore Drowned Andrusov High Carbonates, Unye-Fatsa, Eastern Pontide, Turkey**

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Detailed seismic studies (2D-3D) indicate the presence of a mega structure (previously named as Andrusov High) in the deepwater Central Black Sea at about 6 sec. below the seabed. The structure is interpreted to be characterized by Jurassic carbonates and a thick Cretaceous siliciclastic succession, which is overlain by Late Cretaceous-Early Eocene isolated platform carbonates. The isolated platform carbonates can be correlated with their onshore counterparts, which usually sit on Late Cretaceous arc volcanic highs. The objective of this study is to propose a carbonate depositional model for the area. In order to understand the facies geometries and reservoir properties of drowned offshore deep marine carbonates, a detailed study has been carried out on Campanian-Early Eocene carbonates, which are exposed in Unye-Fatsa area. Especially Campanian-Maastrichtian aged carbonates are situated on the volcanic structural highs and characterized by banks of bioclastic packstone and grainstone, with dominant sigmoidal geometry, hummocky cross stratification, erosional surfaces and lag deposits. Imprints of volcanics and active tectonism are evident. Contemporaneous volcanic activity is characterized by presence of interbedded tuffs. Due to ongoing active tectonics, tilting and truncation are very common. Slope deposits are characterized by slump structures and reworked debris flows, which are sourced from high energy shallow marine carbonates. Rising of the relative sea level through time led to the backstepping of high energy carbonates to the south. For this reason, no complete carbonate succession (Campanian-Early Eocene) can be observed in the same location in the field. Paleocene-Early Eocene carbonates are situated on local highs and characterized by bioclastic grainstone/packstone and patches of corals and algae boundstones facies. Slope deposits are depicted by mega carbonate blocks filling the submarine slope-cut canyons.

Such interpreted facies geometries have been mapped and their petrophysical characteristics have been used to make an analogy with the carbonates on the Andrusov High. It is interpreted that Andrusov High could be an isolated carbonate platform with different facies geometries for Campanian-Early Eocene carbonates.