



Zama Discovery in Offshore Mexico

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ABSTRACT

The Talos Energy Zama #1, the first private-sector exploration well operated in Mexico in 78 years, was drilled in May-July of 2017 in Block 7, 50 km (30 mi) offshore Tabasco in 166 m (545 ft) water. The Zama structure was identified prior to the leasing round using two 3D narrow-azimuth seismic datasets. The structure consists of an upthrown fault block with three-way closure on the flank of a salt structure in the eastern Salina del Istmo basin. A gross sandstone reservoir interval of 344 m (1129 ft) meters was penetrated, containing 29.6° API oil. The estimated reserves make Zama one of the most significant offshore discoveries globally in several years.

An array of tools and techniques was used to define, drill, and evaluate the Zama prospect. These include: (1) structural and stratigraphic analysis to frame the prospect in proper context, (2) pre-drill AVO analysis calibrated to seismic data using existing well control, (3) petrophysical analysis using XRD mineralogy and image logs, (4) forward modeling for pre-drill stratigraphic control and reservoir thickness, (5) a full suite of LWD and wire line logs (including elemental spectroscopy, formation pressure testing, and fluid sampling), (6) combined biostratigraphic and petrologic (XRD and XRF) analyses performed on cuttings while drilling, DST/PVT analysis, and whole core analysis.

The reservoir section is dominated by amalgamated, fine- to very fine-grained, highly feldspathic, unconsolidated poorly sorted sandstones with low clay content. Structural mapping and biostratigraphy suggest sediment may have been fed into an evolving Late Miocene offshore basin from a narrow shelf and proximal alluvial fan complex in a very active geologic setting before being deposited in a deep water setting as a submarine channel fan complex. The base of the reservoir section coincides with a significant middle Miocene unconformity related to salt tectonics. Pressure-gradient data confirmed only one hydrostatic system in the reservoir, a fluid sample was

acquired. Subsequent appraisal drilling included two continuous whole cores covering over 90% of the reservoir section and DST work to help define the reservoir qualities and extent.