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The Talara Basin Province of Northwestern Peru: Cretaceous-Tertiary Total Petroleum System

The Talara Basin is an Eocene forearc basin; it was part of a larger older basin and is located along the northern coast of Peru. Producing formations are primarily Upper Cretaceous through Oligocene sandstones. The greatest potential for future development is in Eocene-age sandstones and some turbidites of the Talara and Salinas Groups; these are also the major present-day reservoirs. Trap types in this block-faulted basin are mainly structural and combination structural and stratigraphic.

Production totals 1.68 billion barrels of oil (BBO) and 340 billion cubic feet of gas (BCFG). Estimated mean recoverable oil, gas, and natural gas liquids (NGL) resources from undiscovered fields in the basin are 1.71 BBO, 4.79 trillion cubic feet of gas (TCFG), and 255 million barrels (MMB) of NGL; values incorporate U.S.G.S. field growth and total petroleum system analyses. Estimated mean recoverable oil and gas resources from undiscovered fields in the onshore (15%) and offshore (85%) portions are, respectively, 257 MMBO and 719 BCFG, and 1.45 BBO and 4.08 TCFG.

Source rock geochemical data is very limited and most production is reported commingled; for these reasons Tertiary and Cretaceous production are grouped into one petroleum system. Possible Tertiary source rocks are the Eocene San Cristobal Formation, the Chacra Group, and the lower Talara and Chira-Heath Formations. Lower Eocene Palegreda neritic marine shales and the Paleocene Balcones Shale may also be important source rocks. Probable Cretaceous age hydrocarbon source rocks are the Muerto Limestone and Redondo Formation. Geochemical data on two Pennsylvanian oils indicate that Tertiary shales are their probable source rocks.