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# Petrographic Characterization of Coals of the Semirara Formation in Maniguin Wells, Sibay Basin, Central Philippines: A Preliminary Presentation of Results

Hydrocarbon exploration in the Philippines is now venturing into terrestrial associated deposits. An example is the petroleum exploration by the Philippine National Oil Company in the Maniguin Area, Central Philippines. There are currently three exploratory wells in the area namely: Maniguin-AIX, Maniguin-2 and Maniguin 3. Geochemical analyses conducted on oil and two shale samples taken from Maniguin-2 suggest an affinity to a lacustrine depositional environment. Moreover, organic geochemical analysis conducted by Murray and Hope (1995) on samples taken from this well shows that the coal and claystone of the Lower Claystone Member of the Semirara Formation are the two source rocks of the Maniguin oil. However, despite the stratigraphic correlation of the three wells, it is only the Maniguin-2 that yield significant amount of oil. Vitrinite reflectance of samples taken from Maniguin-2 at depth 4938 ft shows that the basal part of the Claystone Member is early mature for oil generation (Ro=0.61). In recognition of the importance of the variety of organic matter present in a source rock, this study utilized concept of coal petrography to determine the composition and the thermal maturity of the coals from the exploratory wells. Detailed maceral analysis of the coals from Maniguin-3 shows that vitrinite is the major maceral group with minor liptinite and inertinite macerals. The Tissue Preservation - Gelification Index diagram reveals that the Maniguin-3 Well coals were deposited in paleo-wet-forest mires with the exception of the uppermost seam. The average maximum reflectance value (Ro) of the ten samples from these well is 0.46% with values ranging from 0.38% to 0.56%. These values reveal that the Maniguin-3 is thermally immature to produce oil.