

CHARACTERISTICS OF THE GONDWANA COAL BEARING STRATA OF NORTHERN BANGLADESH

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Gondwana rocks with huge coal deposits are present in the intra-cratonic sub-surface fault bounded basins of northern Bangladesh. Five basins have been discovered at depths ranging from 118m to 2363m below the surface. The coals in this basin are high volatile, low sulfur, bituminous types. The coal bearing strata are bounded at the top by Tertiary rocks in four basins and Jurassic rocks in one basin and at the bottom by Precambrian basement rocks in two basins while the basal part is not known in other basins. An impervious clay layer is present at the top of the Gondwana strata.

The coal bearing strata are broadly grouped into conglomerate, sandstone, carbonaceous shale and coal facies. Interlayerings/ interbeddings of these facies are common. The conglomerate beds are poorly sorted, mostly discontinuous with variable thickness. The pebble sized clastics are embedded in a sandy matrix. It lacks stratification. The sandstone is fine to coarse grained and lithified. The bed thickness varies from few cm to few metres. X-beddings, ripple laminations, burrowings, water escapes and other soft sediment deformations are common in the sandstone. The carbonaceous shale/ mudstone is thinly laminated to bedded and is not uniform. The coal beds are very thick to thinly laminated. The thin beds are not continuous. Clarain is dominant in the coal beds. Faults and fractures are sealed with secondary deposits. Cyclic sedimentation with upward fining sequences are present. The variable thickness and discontinuity of the strata may be due to the different geological settings and depositional conditions. The strata are affected by post-depositional activities.