The area hosts a variety of rock units within its small confinement ranging from highly metamorphosed Precambrian basement to the overlying sedimentary units.

The Precambrian basement attained its metamorphic equilibrium under amphibolite facies conditions. Experiencing all the myriads of endo- and exogenetic geologic processes it later on acted as a base the the overlying sedimentary units.

The sedimentary column which looks like an edge of a basin is dominantly arenaceous. It reflects a fluvial regime which under semi-humid to semi-arid climatic influence seems to have started with a braided setup only to be followed up later on by a lower energy anastomosing / meandering stage. The southward, nearer to plate boundary provenance site was of doubtful stability. It showed atleast two cycles of upheavel and erosion of detritus from a distinct continental-block provenance. Disregarding local fluctuations in the environmental settings, a gradual lessening of the energy level seems to indicate an increase in the maturity level of the basinal setup towards the later stages. However, a wandering nature of the media could have led to the genesis of carbonaceous shale under reducing conditions. The entombed palaeofloral (both mega and miospores) remnants are of Permo-Carboniferous times and, indicate the Singrimari Sedimentary Column to be a part of the Lower Gondwanas. While the basal part belong to the Karharbari Formation, the upper part shows affinity to the Upper Barakar Formation with a temporal hiatus in between.

The basic intrusives which intrude into all the older lithounits are basaltic, tholeiitic and quartz normative. A product of crystal fractionation, their intrusion took place in a continental tectonic setup.

Post-depositional scenario is dominated by brittle deformation with slippages being seen towards west. These could be considered as mirror images of a large scale tectonic play in this region.

Further deposition in this area is seen in the form of alluvium.