SEDIMENTOLOGY OF THE DATTA FORMATION IN THE NAMMAL GORGE, WESTERN SALT RANGE, DISTRICT MIANWALI, PAKISTAN.

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ABSTRACT

Stratigraphic sequence of the Datta Formation, of Jurrassic age, exposed in Nammal Gorge (latitude 32° 40'.00" N, longitude 71° 48 00 E), has been studied for sedimentololgical, petrological and paleo-environmental investigations.

The formation mainly consists of variegated (red, maroon, gray, and white) sandstones, along with shale, siltstone, and mudstone with carbonate interbeds at places.

On the basis of lithofacies variation & sedimentary structures few lithofacies have been recognized.these lithofacies are;

4. NDF 4- Calcareous sandstone with limestone interbeds.
3. NDF 3 - Sandstone, siltstone with shale interbeds.
2. NDF 2 - Cross bedded sandstone with siltstone interbeds.
1. NDF 1 – Bedded sandstone with quartz arenite.

The stratigraphic sequence is interpreted to have been deposited in deltaic environments. Lithological and sedimentological characteristice of the formation suggest that it was deposited in a delta plain, delta front environments with majority of sequence having been deposited by distributary channels in the delta plain environments.

Sedimentary features like cross stratification, lamination, point bar, partial to high bioturbation, and excessive worms burrows indicate overall upper onshore deltaic environments.

The petrographic studies of the Datta Formation suggest pre-existing sandstone source from the Indian Craton.

The sequence stratigraphy of Datta Formation indicates transgressive and regressive episodes of the sea.