CHAPTER 5

STRUCTURE
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5.0.0. GENERAL: -

The satellite data has been interpreted and all the structural details of the entire area have been brought out for convenience. However, the structure of the Yanakandka block i.e., the study area only is considered for documentation in the thesis. The structure of the area has been interpreted from the satellite product and it was verified in the field. All the structural details are given, following the standard symbols. The major structural features are trend lines, (trace of bedding), Strike and dip of formations, Joints, Folds and Faults. The structural map is given as (Fig. 5-1).

5.1.0. Trend Lines:-

These are intact traces of bedding. This gives very clear reflection of strike and dip of bedding. These are conspicuous in the northern part of Yanakandla Block and extend west ward in to the Reserved Forest area. In the satellite product these are seen as shades of blues and are very vivid. Outside the lease area these trend line are prominent (Fig. 5-2).
5.2.0. Strike and dip of the formations:

The rocks in the area under report are sub-horizontal in nature, (Fig. 5-3), as a result the trend of the formation is almost parallel to the outcrop pattern.

Fig. 5-3 Sub-horizontal bedding in the Yanakandla Block.

The horizontal disposition of bedding in Yanakandla Block is parallel to the contours. Hence, the strike varies from place to place. However, when the dip is about >5° the dip becomes more conspicuous and so is the case with strike, as noticed in the northern part of the Yanakandla Block (Fig. 5-4). The strike in general is WNW -ESE with SSW dips of about 5°. Towards south the dip amount becomes 3°.
Fig 5-4  Slightly steeper dips in the Yanakandla Block.

5.3.0. Joints -

These are present all over the area of study area. These can be classified as strike joints, bedding joints and transverse joints. All the said varieties of joints are present in the Yanakandla Block. These joints dip very steep to vertical. They are widely spaced, in the range of 1 m to 6 m. Most of these joints can further be classified as ‘Open Joints’ with the width ranging from a few centimeters to 0.5 m. (Fig 5-5). The joints run for considerable distance. These open spaces or gaps are filled with soil and grass has grown over the soil. The soil creep, in most of the cases, continues to 0.5 m to 1.5 m below the ground level.
Fig. 5-5. Style of Open Joints
The study has brought to light that the area has a mild tectonic imprint in the form of folds. Yanakandla Block also can be considered as a broad synform with the axis trending WNW – ESE. In this Block, there are tight shallow antiforms and synforms. (Fig. 5-6) Occasionally gently plunging antiforms are also observed. (Fig. 5-7a & 5-7b) The depth persistence of these folds is not expected and these are not likely to create any problem in the mining.

Fig 5-6 & 5-7a  Plunging antiforms in the Yanakandla Block
Fig 5-7b Tight Anticlinal structure

5.5.0 Faults -

The study of satellite image suggests that there is a major ENE-WSW trending lineament, (Figs. 5-1 & 5-2), located in the southern part, outside the lease area. Its affect is insignificant in the lease area in the western part. No significant throw has been observed. Towards east it continues into the Yanakandla Block as a lineament of minor magnitude only having similar trend. It is envisaged that this is not going to affect the mining in any manner.