



SCHEME OF MINING FOR SUKRANGI LEASE (382.709 HA.)

APPLICANT: THE ODISHA MINING CORPORATION LTD.
RQP : MIECON LIMITED



5.0 MINING

5.1 Sallent description of present mining method:

The Sukrangi Chromite mines comes under Category-A (Fully Mechanized category) as per the IBM guideline. The deposit is worked by opencast mining method with formation of benches. Working benches are kept 6 m high and minimum 11 m wide. The conventional mining method deploys use of 115 mm diameter drills and blasting with low density (LD) cartridge explosives. 15-25 t capacity dumper/ tipper with matching capacity hydraulic excavators/ loaders for loading and transportation of ore to sale plots and transportation of waste/ sub grade materials to their respective dumps/ stock yards have been envisaged in this scheme of mining.

In general the stratum is very soft however, occasional drilling & blasting is being carried out in the hard strata only for improved fragmentation and as per the requirement of the customers. For the purpose of carrying out drilling, 115 mm diameter down the hole (DTH) blast-hole drills are deployed. The drilling pattern for 115 mm diameter holes is at a burden of 2m and spacing of 3m. The bench height has been kept at 6 m. Therefore keeping into account the factor for sub grade drilling & extra drilling to take care of hole collapse, the depth of the hole is around 6.5 m.

Around 2.5-4 cubic meters bucket capacity hydraulic excavators (diesel powered) is being used in conjunction with 15-25t dumpers. The ROM is being segregated at the mining face itself as ore/ beneficiable ore/ sub-grade ore depending into the content of Cr_2O_3 in it. If the Cr_2O_3 content in the ore is more than 40% it is being considered into direct ore, if the Cr_2O_3 content in the ore is between 30-40% it has been considered into beneficiable ore and if the Cr_2O_3 content in the ore is in between 10-30% it is being considered as sub grade ore. Accordingly the ore is being stacked into their respective stacking plots. Waste & sub grade materials generated is being transported to their respective dumping/ stacking locations. Front end loader of around 1.5-3.0 cubic meters bucket capacity is being deployed to load the ore/ beneficiable grade ore from the respective stacking plots.

Regular sampling of the ore at mine face itself is being carried out for on-face segregation of ore/ beneficiable grade ore & sub grade ore. As per the permission granted by DGMS under regulation 106(2)(b), the bench configurations adopted at Sukrangi chromite mine is given below:-

Height	: 6 meters
Min. working width	: 11 meters
Bank slope angle	: 60 deg.
Ultimate pit slope angle	: Below 25 deg.

The dimension of the existing quarry is approx. 750m x 350m.