

## **Justification for requirement of land outside the ML area for dumping of overburden to be generated from South Kaliapani & Sukurangi Chromite ML**

### **I. Constraints for OB dumping in South-Kaliapani ML (552.457ha):**

The major constraint of overburden dumping of this mine is non availability of non-mineral bearing land. The tentative volume of overburden to be generated by opencast mining at the conceptual stage has been assessed as 100.9 million M<sup>3</sup> (In-situ) for production of 15.01 million ton of mineable chrome ore basing on the present level of geological inputs & economics of mining. The conceptual pit area will cover 315.74 ha out of total lease area of 552.457 ha. Out of 174.99 ha available for OB dump in the ML, 95.31 ha has been occupied by existing dump. Hence, around 78.823 ha virgin area available for OB dump will accommodate only 35.17 Million M<sup>3</sup> (In-situ) excluding free area of 100m strip from the quarry edge and maximum dump height of 100m etc. There is no space left to dump balance 65.73 Million M<sup>3</sup> (In-situ) of OB within the ML to continue mining up to the conceptual pit limit besides 5.70 Million M<sup>3</sup> of OB to be dumped in Sukurangi.

### **II. Constraints for OB dumping in Sukurangi ML (382.709ha):**

Sukurangi ML lies to the east of South-Kaliapani ML. The total OB generation from the ML at conceptual period has been assessed at 45.825 Million M<sup>3</sup> to produce 5.23 million ton of chrome ore. The area available for OB dump is 20.258 ha which can accommodate 17.85 Million M<sup>3</sup> excluding free area of 100m strip from the quarry edge and maximum dump height of 100m. The land for 27.975 Million M<sup>3</sup> of OB dumping within Sukurangi ML area is not available. The agricultural land belonging to tribal community has not been proposed for OB dumping.

In order to overcome the constraints of OB dumping the following possibilities have been discussed:

Sl. No.	Total Chrome Ore (million ton)	Total OB (M <sup>3</sup> )	Space available for dump (ha)	OB that can be placed in the available space (M <sup>3</sup> )	Balance OB (M <sup>3</sup> )	Additional space required (in ha)	Space required outside ML (ha)
1	2	3	4	5	6 (3-5)	7	8 (4-7)
South-Kaliapani	15.01	100.90	79.68	35.17	65.73	228.54	148.86
Sukurangi	5.23	45.825	20.258	17.85	27.975	52.01	31.752
<b>Total</b>	<b>20.24</b>	<b>146.725</b>	<b>100.118</b>	<b>53.02</b>	<b>93.705</b>	<b>280.55</b>	<b>180.612</b>

**A. Possibility of backfilling the quarry voids within the MLs:**

The ore body in South-Kaliapani and Sukurangi ML continue much below the depth of the UPL i.e. 149 mRL. Chromite is a strategic mineral resource and there is possibility of opencast mining below the proposed UPL in future. Underground mining through competent strata (beyond 300mtr from GL approx.) is under feasibility study. Also there is a restriction by IBM for back filling the quarry, unless the ore is completely exhausted. Dynamic load of the backfilled overburden will also add to the difficulty of underground mining in future. Taking into consideration of the above facts, backfilling of quarry voids will not be prudent.

**B. Possibility of Dumping OB in Kaliapani ML: (971.245ha) of OMC:**

Kaliapani ML occurs to the north of South-Kaliapani ML. North-eastern part of Kaliapani ML has been explored and the UPL has been defined for this patch only. The only road, Tomka-Mangalpur which is main evacuation system for chrome ore of Sukinda Valley passes through this ML. Damsal Nala is flowing through the central part of this lease. Considering the above aspects it is not possible to dump the OB within this ML. No tenanted lands are proposed for use by mining & ancillary operations as most of the land are used by the local tribes for agriculture.

**C. Possibility of Dumping of OB outside the ML:**

Due to the above noted facts there is no scope of dumping of OB within the ML area as well as adjacent MLs of OMC. So the only alternative for disposal of OB is on a suitable land outside the ML area. For this purpose a patch of forest land over 168.948 ha to the east of Mahagiri hill has been selected. This area can accommodate about 100 million M<sup>3</sup> of OB (In-situ) and can provide practical and effective solution to OB dumping problem of South-Kaliapani & Sukurangi ML to continue opencast mining.

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