

REPORT ON CHECK INSPECTION OF OSTAPAL CHROMITE MINES OF M/S. FACOR LTD. IN JAJPUR DISTRICT OF ODISHA STATE [PREPARED IN THE FORMAT, PRESCRIBED VIDE CCOM'S LETTER NO. 11013/35/MP/MISC/89-CCOM (Vol. III)]

Name and designation of inspecting officer	:	SHRI HARKESH MEENA, RCOM, BHUBANESWAR		
Date of Inspection	:	16.03.2018		
1. General information of the mine				
(i) Name of the mine	:	OSTAPAL CHROMITE MINE		
(ii) Owner	:	SHRI R.K. SARAF		
(iii) Nominated owner	:	SHRI ROHIT SARAF		
(iv) Mining Engineer	:	SHRI SARASWATA NANDA		
(v) Agent	:	SHRI R K SINGH		
(vi) Mine Manager	:	SHRI A K PATRA		
(vii) Lease area	:	72.843 Ha		
(viii) Location	:	GURUJANG, KALIAPANI, SUKINDA, JAJPUR		
(ix) Lease period	:	50 YEARS		
(x) Date of Expiry	:	12.08.2035		
(xi) Date of approval of Mining Plan	:	06.10.2005		
(xii) Date of approval of Review of Mining Plan	:	30.03.2016		
(xiii) Period of Mining Plan/ Review of Mining Plan	:	2016-17 to 2020-21		
(xiv) Production	:			
		Year	Proposed in Tonne	Actual Tonne
		2016-17	104200.00	102087.903
		2017-18 (upto Feb'18)	107100.00	108298.00

2. Brief description of the mine:

(a) A brief description of the mine covering location, geology, problems associated with mining of the deposit etc.

(1) Location: Village:- Gurujanga
 Taluka:- Sukinda
 District :- Jajpur,
 State:- Odisha

The area is bounded by Latitude 21⁰' to 21⁰⁵' N & Latitude 85⁴⁰' E to 85⁵³'E. The location of lease area is under Survey of India, Topo Sheet No. 73 - G/16.

(2) Geology:

The Ostapal Chromite Mines is located in the Sukinda Ultramafic Complex to the North of Damsala Nallah. The lithological units occurring in the leasehold area are serpentinite, quartzite, pyroxenite, dolerite, Nickeliferous limonite etc. Host rock of chromite is serpentinite. The Ultrabasic mass has weathered to form a laterite capping of 10-20 Mtrs. thickness all over the lease area. The northern part, southern part and western part of the lease area is covered by talus

and clayey soil. The detrital deposit is cemented by clayey soil having thickness varying from 1 to 3 Mtrs.

The ultramafic body extends to the strike length of 15 km in NE - SW direction (Kansa to Kalarangi) and width varies from 1 km to 4 km. The widest part of ultramafics are confined to South western part and gradually tapering towards North – East and die out completely against quartzite.

The Chromite deposits of Sukinda ultramafic field occurs as six more or less parallel bands in Serpentinite. These Chromite bands are locally named as Band 1,2,3,4,5 & 6 and are separated from each other by Serpentinite / Pyroxenite ranging in thickness 120 M to 600 M. These chromite bands are exposed intermittently in quarries along strike length of 15 km while major portion of these bands are concealed under laterite capping.

Structurally, the lower sequence of the Iron ore super group has been folded into abroad syndrome plunging at a low angle of 150 to 200 based on the direction derived from cross beddings, the Sukinda syndrome is established as asymmetrically syncline with apex of the fold centering around Kansa village. As a result, the ore bodies of the region represent a horse shoe shaped structure. The whole group of rocks was effected by two boundary faults running with the northern and Southern margins of the ultramafic body. Rocks of the area have undergone tectonic deformation resulting in the development of asymmetrical syncline and realignment of Chrome ore bodies dictated by pressure.

The Serpentinised dunite – peridotite members have been subjected to intense chemical weathering resulting in the formation of nickel rich limonite cover with relics of serpentinite and talc schist. The primary Chrome ore bodies confined to these serpentinite – limonitic horizons have also undergone weathering and given rise to friable Chrome ore.

(3) Problems associated with mining of the deposit etc.

Problems associated with mining of the deposits are displacement of ore body due to fault, joint planes & intrusions.

(b) Description on deployment of mining machinery

Sl. No.	Machineries deployed	Capacity	Number of units	In use	Idle	Percentage of utilization	Brief description	Remarks
1	2	3	4	5	6	7	8	9
1	Back Hoes	1.3	1	1	Nil	100%	Diesel Engine	All the machineries are in use.
		1.5	2	2	Nil	100%		
2	Front End Loader	1.5	1	1	Nil	100%	Diesel Engine	
3	Water Sprinkler	12000	2	2	Nil	100%	Diesel Engine	
		8000	4	4	Nil	100%	Diesel Engine	
4	Dumpers	8.6	16	16	Nil	100%	Diesel Engine	
5	Drills / Blast Holes	110MM	2	2	Nil	100%	Pneumatic Machine	
6	Bull Dozers	D31	1	1	Nil	100%	Diesel Engine	
		D65	1	1	Nil	100%		
		D6R2	1	1	Nil	100%		
7	Air Compressor	437.5	2	2	Nil	100%	Diesel Engine	

3. Implementation of Mining Plan or Review of Mining Plan:

Sl.No.	Proposal in the approved Mining Plan or Review of Mining Plan	Observations regarding implementation of proposals given in approved Mining Plan or Review of Mining Plan.	Remarks/Reason for deviation															
1	2	3	4															
(1) CONSERVATION OF MINERALS																		
(a)	Exploration	<table border="1"> <thead> <tr> <th>Year</th> <th>Borehole Proposed</th> <th>Borehole Actual</th> <th>Spacing (m)</th> <th>Total Meterage (m)</th> </tr> </thead> <tbody> <tr> <td>2016-17</td> <td>4</td> <td>18</td> <td>50</td> <td>537</td> </tr> <tr> <td>2017-18</td> <td>6</td> <td>6</td> <td>50</td> <td>212</td> </tr> </tbody> </table>	Year	Borehole Proposed	Borehole Actual	Spacing (m)	Total Meterage (m)	2016-17	4	18	50	537	2017-18	6	6	50	212	Further exploration is required to prove the entire lease area into G1 Category.
Year	Borehole Proposed	Borehole Actual	Spacing (m)	Total Meterage (m)														
2016-17	4	18	50	537														
2017-18	6	6	50	212														
(b)	Utilization of sub-grade mineral	It was proposed for Beneficiation of subgrade mineral in COB Plant for up-gradation of the grade.	The total sub-grade minerals produced from the mine is being utilized in COB Plant for up-gradation of the grade.															
(c)	Any other proposal for monitoring	No proposal																
(2) SCIENTIFIC MINING																		
(a)	Mine Development and method of mining	<table border="1"> <thead> <tr> <th>Year</th> <th>Proposed in Metric Tonnes</th> <th>Actual in Metric Tonnes</th> </tr> </thead> <tbody> <tr> <td>2016-17</td> <td>104200.00</td> <td>102087.903</td> </tr> <tr> <td>2017-18</td> <td>107100.00</td> <td>108298.00</td> </tr> </tbody> </table> <p>The mining operation is carried out in opencast mechanized method. The benches are kept with 6m height and 12m width. The Opencast quarry is of 600 Mtr in length and 500 Mtr in width and it is of 103 Mtr depth from Surface. The overburden benches which form about 90% of total excavation are excavated by fully mechanized method with shovel, dumper and dozer combination</p>	Year	Proposed in Metric Tonnes	Actual in Metric Tonnes	2016-17	104200.00	102087.903	2017-18	107100.00	108298.00	During field inspection it was observed that the height & width of benches are not maintained as proposed in the approved Review of Mining Plan. The height of 3rd bench from bottom between grid line 2850-2950E & 2800-2900N is observed as 8-9 m and the width of benches is observed less than that of height at many places in the						
Year	Proposed in Metric Tonnes	Actual in Metric Tonnes																
2016-17	104200.00	102087.903																
2017-18	107100.00	108298.00																

						quarry and violation letter was issued under Rule 11(1) of MCDR, 2017 vide this office letter dated 27.03.2018 for such deviation.																		
(b)	Handling of Waste/ sub-grade material	<table border="1"> <thead> <tr> <th rowspan="2">Year</th> <th colspan="2">Proposed in Lakh Tonnes</th> <th colspan="2">Actual in Lakh Tonnes</th> </tr> <tr> <th>Sub grade</th> <th>Waste</th> <th>Sub grade</th> <th>Waste</th> </tr> </thead> <tbody> <tr> <td>2016-17</td> <td>0.42</td> <td>9.56</td> <td>0.51</td> <td>4.85</td> </tr> <tr> <td>2017-18 (FEB'18)</td> <td>0.42</td> <td>9.48</td> <td>0.46</td> <td>5.94</td> </tr> </tbody> </table> <p>It was proposed that the waste generated during the year 2017-18 will be stacked over the South over burden dump.</p>	Year	Proposed in Lakh Tonnes		Actual in Lakh Tonnes		Sub grade	Waste	Sub grade	Waste	2016-17	0.42	9.56	0.51	4.85	2017-18 (FEB'18)	0.42	9.48	0.46	5.94			During field inspection it was observed that the dumping of over burden is carried out on the extension part of the Northern over burden dump and violation letter was issued under Rule 11(1) of MCDR, 2017 vide this office letter dated 27.03.2018 for such deviation.
Year	Proposed in Lakh Tonnes			Actual in Lakh Tonnes																				
	Sub grade	Waste	Sub grade	Waste																				
2016-17	0.42	9.56	0.51	4.85																				
2017-18 (FEB'18)	0.42	9.48	0.46	5.94																				
(c)	Area reclamation & restoration	No area is matured for reclamation. Therefore no proposal in this regard.																						
(d)	Any other proposal for monitoring	No proposal																						
(3)	PROTECTION OF ENVIRONMENT																							
(a)	Afforestation	<table border="1"> <thead> <tr> <th>Year</th> <th>Proposed in ha</th> <th>No. of Plantation Proposed</th> <th>Actual in ha</th> <th>No. of Plantation Achieved</th> </tr> </thead> <tbody> <tr> <td>2016-17</td> <td>0.833</td> <td>2080</td> <td>4.03</td> <td>10075</td> </tr> <tr> <td>2017-18</td> <td>2.043</td> <td>5110</td> <td>2.586</td> <td>6465</td> </tr> </tbody> </table>	Year	Proposed in ha	No. of Plantation Proposed	Actual in ha	No. of Plantation Achieved	2016-17	0.833	2080	4.03	10075	2017-18	2.043	5110	2.586	6465			Afforestation is carried out as per proposal				
Year	Proposed in ha	No. of Plantation Proposed	Actual in ha	No. of Plantation Achieved																				
2016-17	0.833	2080	4.03	10075																				
2017-18	2.043	5110	2.586	6465																				
(b)	Quality of air	Quality of air is monitored in regular interval and is within the permissible standard.																						
(c)	Quality of Water	Quality of water is monitored in regular interval and is within the permissible standard.																						
(d)	Noise level	Noise level is monitored and is within the permissible limit.																						
(e)	Vibration	Under permissible limit																						
(f)	Any other proposal for monitoring.	The water generated from quarry passes through ETP for monitoring and reduction of hexavalent chromium (Cr+6) in mine discharge water.																						

4. History of Violations after approval of Mining Plan or Review of Mining Plan:

SL No.	Date of Inspection	Name of inspecting officer	Violations of MCDR, 1988/2017 observed and pointed out	Rectification of violations	Remarks
1	2	3	4	5	6
1.	13.03.2016	Shri Ibrahim Sharief, SR ACOM	Violation of Rule 13(1) & 45(5) was observed and pointed out to lessee on 05.05.2016.	Compliance received and complied on 23.06.2016.	
2.	21.05.2017	Shri Dilip Jain, JMG	Nil	NA	
3.	16.03.2018	Shri Harkesh Meena, RCOM	Violation of Rule 11(1) was observed and pointed out to lessee on 27.03.2018.		Show cause notice issued on 10.05.2018

5. Socio-Economic Development Plan:

Sl. No.	Proposed Action Plan towards socio-Economic Development	Expenditure Incurred 2016-17 (In Rs. Lakh)	Expenditure Incurred 2017-18 (In Rs. Lakh)	Remarks
1	2	3	4	5
(1)	General Development in the area			
	(i) Housing	2.4	2.24	
	(ii) Water Supply	5.99	2.37	
	(iii) Sanitation			
	(iv) Health safety and Medical Facilities	19.02	17.87	
(2)	Education and Training	13.31	12.81	
(3)	Employment to local inhabitants	226.64	210.00	
(4)	Public Transportation and communication	7.87	21.94	
(5)	Recreation and other sports activities	5.7	3.52	
(6)	Expenditure for environment management	18.84	14.48	
(7)	Other			
	Total	299.77	285.23	

(HARKESH MEENA)
Regional Controller of Mines