

**Scrutiny Comments on draft ‘Review & Updation of Mining Plan’ in respect of Dharmapuri Iron Ore Mine, ML No.2160 of M/s Veerabhadrapa Sangappa & Company covering 18.46 Ha of area in RM Block, Sandur Taluk , Ballari District of Karnataka State.**

- *The Consent letter/Undertaking /Certificate from the lessee & qualified person may be digitally signed and enclosed in the text along with copy of the bank guarantee.*
- *The format of the New Mining Template & para wise numbering may not be changed.*
- *No cells may be left blank. Either “Nil”or”Not applicable” may be furnished.*
- *Annexure no. may be given for the attachments enclosed as annexure.*

#### **CHAPTER-1-GENERAL INFORMATION**

1. Para- 1.1:Name of the mineral may be furnished as per the mineral given in the lease deed.
2. Para- 1.1.1: (i) The details of the initial grant of the Mining Lease may be furnished.
3. Para 1.1.2: (i) Since the document submitted is for Review & Updation of Mining Plan, reasons for modification & period for which modification is proposed may be deleted.
4. Para 1.3: Date of initial execution of the lease may be furnished under this para.
5. Para-1.3.4: (i) The validity date may be furnished for Environment & Forest Clearance instead of just mentioning “Co- terminus with lease period”. (ii)The details of the permissible annual production as per the CEC should also be furnished under this Para. Also, the details of the CEC approval Letter no, date, Permissible annual production etc. to be given under this Para. The related documents to be attached as Annexure and reference to be given.
6. Para 1.3.5: Only the toposheet number in which the Mining Lease falls may be given.
7. Para 1.3.6: The List of members of all the partners should also be enclosed and reference to be given in this Para.

#### **CHAPTER-2-GEOLOGY AND EXPLORATION**

8. Para 2.1.3: Regional Strtigraphy of the area may be provided as an Annexure and the Annexure number may be referred in the Text or this may also be provided by inserting table in word file.
9. 2.1.4.2: Structure: The main ore structure of the deposit may be described like banded structure, vein-like structure, the massive structure, brecciated structure, etc
10. Para 2.1.4.3: Nature of occurrence of other lithologies along with foot wall and hanging wall rock may be described. Different type of iron ore available in the lease, their field occurrence, petrological characteristics and percentage of incidence of each type of ore may be given. Lumps and fines percentage of iron ore may also be provided.
11. Para 2.1.4.4: (i) The information of Mode of Occurrence & Controls of Mineralization iron ore in the lease area may be provided.(ii) All the material analyzing more than 45% Fe is considered as ore. The same may be corrected at all places in the text as per the latest threshold value of Iron Ore.

12. Para 2.1.4.5: Along with the information provided, extent of Weathering/ Alteration (lateral & vertical) may also be provided.
13. 2.1.4.6: Nature/Form of Mineral: the ratio of lumps to fines in ROM may be furnished under this para.
- Para 2.1.4.7: (i) There are different ore bands, however details of the ore bands and their location, dimension (L x W x D), etc. are not furnished. (ii) Most of the bore holes have been closed in mineral. Hence vertical extent of the mineralized has not been proved. Along with the information provided, depth of the ore body may also be provided.
14. Para 2.2.1.1: The year mentioned under geological mapping may be corrected.
15. Para 2.2.1.9 to Para 2.2.1.12 : The relevant information may be furnished.
16. Para 2.2.1.13: Bulk Density Study: (i) In the bulk density report attached, Bulk density of BHQ & Clay is not enclosed. (ii) All the details may be furnished as per the format and under column nature of Ore /OB, it may be given as massive hard, friable, powdery, laminated etc. Bulk density test report may be enclosed in annexure.
17. Para 2.2.1.14: Area proved as non mineralized of 2.96 Ha may be corrected & placed under suitable level of exploration based on the exploration carried out in the past. The exploration proposals may be given for converting 1.65ha of G2 level of exploration to G1 level of exploration during the plan period.
18. Para 2.2.1.7.1: The core /non-core samples information may be provided in CSV/excel file which shall normally include Five files namely (a) collar file, (b) survey file and (c) Geology log file, (d) Assay file and (e) RQD File. The file formats are as follows:

**(a) Collar file**

Hole_id*	Latitude	Longitude	Altitude	Max_depth	Hole_path (linear/angular)	Date of drilling

**(b) Survey file for drill holes**

Hole_id	Depth	Dip	Azimuth

**(c) Assay file**

radicals analysed (specify name of radical as an example given below)							
Hole_id	Depth_from	Depth_to	Fe	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	LOI	P

**(d) Geology file**

Hole_id	Depth_from	Depth_to	Lithological Description

**(e) Rock Quality Designation (RQD) File**

Hole_id	Depth_from	Depth_to	RQD%

*\*Hole ID should tally with the surface geological plan as available in the latest approved mining plan*

19. Para 2.2.2.9: The latitude & Longitude of the samples collected may be furnished.
20. Para 2.2.2.10: This paragraph may be reviewed and the relevant information may be furnished.
19. Para 2.2.2.14: (i) Area Covered under Exploration: From the concise litho logs given in Annexure, it is observed that most of the bore holes ended in the mineralized zone (i.e. Fe is greater than 35%). Hence the area is not completely explored. The area in given G1 level may be reviewed and accordingly information may be provided.(ii) Year wise area converted to G1 from G2,G3 & G4 and percentage % in G1 area may be reviewed & corrected.
20. Para 2.2.3: Para 2.2.3: (i)Details of all the ore bands with their dimensions may be furnished in this para. Further, in the table it is observed that in the radicals analysed, the information may be given in separate row for each radicals. (ii) The minimum grade % may be corrected as per the threshold value determined by IBM.(iii) Ore body Geometry and Grade : the name of radical may be specified, instead of name of the ore mineral.
21. Para 2.2.4.2: For the calculation of reserves/resources depth continuity of mineralisation may be considered limited to the depth upto which direct evidence of mineralization is established as per Minerals (Evidence of Mineral Contents) Rules, 2015.The reserves/ resources may be re-estimated and corrected at all places in the text & plates. (ii) Information of Level of exploration & grade furnished may be corrected for Iron Ore & Haematitic Siliceous ore.
22. Para 2.2.4.3 & 2.2.4.3: Only threshold value of hematitic iron ore provided. However, hematitic silicious iron ore (HSIO) also exists in the lease. The threshold value of HSIO also needs to be provided and cut off value for calculation of reserves may be specified.
23. Para 2.2.4.8: Market Assessment: The cut-off grade from this mine is mentioned as 60% Fe and the grade of ore +45% Fe will be suitably blended with higher grade ore. However, there is an ore exists between cut off grade and threshold value (i.e. between 35 to 45% of Fe ore) not taken into account in the Market assessment. If non saleable in the present Market Scenario, the iron ore between 35 to 45% Fe may be stacked separately as a Mineral Reject and the same may be proposed. The expenditure & revenue cost may be corrected as per the market condition suitably.
24. Para 2.2.4.13: The information on reserves & resources furnished as per the UNFC classification is not aligned with the section wise calculations. The same may be corrected.(ii) In this table, Reserve/ resources of Hematitic siliceous ore may also be furnished.
25. Para 2.2.5: (i) Geological mapping of the entire lease area has already been mapped in 1:2000 scale in the previous exploration. However, again the Geological mapping is proposed in future programme of exploration, the same may be deleted. (ii) Future exploration may be proposed as per comments placed at para 2.2.2.14.

### **CHAPTER-3-MINERAL BENEFICIATION/PROCESSING**

26. Para 3.5.2: The information of drilling equipment furnished in this chapter is irrelevant. Hence the same may be corrected.
27. Para 3.9: The quantity of water required in KLD for mining & allied activities process like dust suppression, drilling, plantation, domestic purpose, drinking etc. may be given under this Para. The details regarding source of supply of water, disposal of water, extent

of recycling, chemical analysis of water should also be furnished in this Para. The Water balance charts to be prepared accordingly and may be added in annexure and reference to be given under this Para. The water requirement should be within the EC & CFO permissible limits.

#### **CHAPTER-4-MINING OPERATIONS**

28. Para 4.1.2: (i) Under proposed method of mining “Mechanized” may be selected. (ii) Since the existing & proposed method of mining is same, reasons for proposed changes may be deleted. Changes proposed within the ML area if any may be mentioned here.
29. Para 4.2.1.1: (i) The area covered by pits (Ha) is not matching with the pit dimension given. The same may be corrected. (ii) The depth in Mts may be furnished along with length & width under pit dimension.
30. Para 4.2.2.1: (i)The overall slope of the pit furnished may be corrected as per the proposals given in the plan period. (ii) The no of benches in Ore & overburden may be corrected. (iii) The depth of the water table is given as 450 mts from existing surface bottom. The mRL of the existing surface bottom may be furnished.
31. Para 4.2.2.2: (i) The no. of benches furnished in this para is not matching with Para 4.2.2.1. (ii) Distance of advancement of benches may be furnished along with the direction. (iii) The recovery percentage of ore & waste may be taken into account for year wise calculation of production, over burden & accordingly change the stripping ratio. The total may also be corrected & annexed as annexure. (iv)The locational grid of advancement of benches may be furnished instead of section line.
32. Para 4.4: (i) No. of shifts may be mentioned as one instead of writing general shift.(ii) Handling required per hour may be divided by the effective working hours instead of 8 hours. Necessary corrections may be applied at all relevant places to calculate the requirement of machineries.
33. Para 4.5.1 & 4.5.2: Calculation for blasting & Explosive requirement in waste & ore may be reviewed & corrected accordingly.
34. Para 4.7.1: (i) Under waste management since existing dumps are proposed in the plan period, year wise details of the proposed area, height, quantity & location may be furnished as per the format.(ii) Similarly the proposed minerals stack details if existing stacks are used & the details of new stack may be furnished.
35. Para 4.9: Under use of Minerals, the physical & chemical compositions may be furnished. It is pertinent to mention here the use of minerals of less than 59% Fe.

#### **CHAPTER-5-SUSTAINABLE MINING**

36. Para 5.1- It should be specifically mentioned under this Para “ Sustainable Mining and SDF implementations during the plan period will be carried out in accordance with Rule 35 of MCDR 2017”.
37. Para 5.3: Under the proposed number of persons likely to get direct employment may be mentioned.

## **CHAPTER-6- PROGRESSIVE MINE CLOSURE PLAN**

38. Para 6.1: Since there was no operations carried out in the last plan period, area under mining operation, area under dumps & virgin area under green belt may be verified & corrected wrt the last approved document.
39. Para 6.2.2.2.2 & 6.2.2.2.3: The coordinates of proposed retaining wall & garland drain may be given in WGS 84 datum.
40. Para 6.2.2.1.2: Year wise proposal of 0.25 Ha area for water storage & recharge facility is furnished in para 5.2 (CSR Initiatives), preparation of coarse gravel bed may be given aligned with para 5.2.
41. Para 6.2.3.2: (i) Location may be furnished instead of section lines. (ii) The number of saplings proposed may be increased as per the condition given in Environment Clearance.
42. Para 6.2.6: Year wise proposal of 0.2 Ha area to be developed for recreation is furnished in para 5.2 (CSR Initiatives), all the details as per the prescribed format may be given in this regard.
43. Para 6.2.8.2: In this para other form of reclaiming the area other than plantation may be given if any.
44. Para 6.2.9.2: In the plan period there was no proposal of top soil generation, hence year wise proposal & use of top soil may be given as “nil”.
45. Para 6.2.11: Land use of lease area at the expiry of lease period (conceptual stage) may be corrected as per the latest approved document.

## **CHAPTER-7- FINANCIAL ASSURANCE/PERFORMANCE SURETY**

46. The land use pattern at the start of plan period & additional area requirement may be verified & corrected as per the last approved document & accordingly bank guarantee may be paid.

## **CHAPTER-8- REVIEW OF PREVIOUS PROPOSALS**

47. Para 8.1.1: Lease area utilisation may be furnished as per the last approved mining plan, the same may be corrected accordingly.
48. Para 8.1.2: Since the last approved document didn't have SDF proposals, accordingly it should be mentioned “Not applicable” under this para.
49. Para 8.3: Since there were no proposals in the last approved plan period under Socio-Economic, accordingly under para 8.3.1, 8.3.2, 8.3.3.1, 8.3.3.2, 8.3.3.3, 8.3.3.4 & 8.3.3.5 it should be mentioned “Not applicable”.
50. Chapter 9- This chapter is applicable only for fresh grant. Hence “Not applicable “ may be furnished under all the subheadings in this chapter.

### **51. PLANS & SECTIONS:**

- a) **Hard copies of all the plans may be submitted in .dwg format with UTM grids (WGS 84 datum) only. Soft copies of the same may be submitted in KML/SHP format.**

- b) **The plan submitted in SHP format does not contain any attribute data. Line, polygon & point feature should be in separate file with all the necessary information.**
- c) Numbering of plates to be specifically maintained as per the format. Any additional plates enclosed may be followed after plate no 11 with corresponding details.
- d) Geological Plan & section ( Plate No 3 & 4): (i) Area under G1,G2,G3 & G4 may be corrected as per the comments placed under Para 2.2.4.2 & sections may be prepared accordingly. (ii) All the area under different level s of explorations may be shown prominently & indexed accordingly.
- e) Production and Development Plans (Plate No.5A-5E): (i)The statutory boundary of 7.5m along the lease boundary may be shown in the plates. (ii) Proposed temporary mineral stack area may be reviewed & accordingly the same information may be furnished in the text. (iii) The no of benches with their respective mRL's proposed in the ore & OB may be verified & redrawn as per the information provided in the text. (iv) OB dump proposed may be aligned as per the approved R & R Plan.
- f) Production & development sections (Plate No.6): Separate year wise proposed production & development sections may be furnished.
- g) Progressive mine closure plan & section (Plate No.7& 8): (i) In this plate all the year wise PMCP activities proposed in the text may be shown with different colour coding & indexed accordingly.(ii) In this plate only the proposed engineering environmental measures like construction of retaining wall, garland drain, plantation may be shown & indexed accordingly
- h) Conceptual Plan & section (Plate No.9 & 9A): This plans needs to redrawn as per the information furnished in the text showing all the proposed activities at the conceptual stage of mining including fencing, plantation, backfilling, converting the dugout pit into water reservoir if any & regrassification of the degraded land. The same may be attended in the text part.
- i) Financial assurance plan (Plate No.12): This plate may be attended as per comments placed at chapter-7- financial assurance.
- j) Dump management Plan & section: Separate plate of OB dump management plan & sections may be given.

52. **ANNEXURE:**

- a) The particulars & Sl Nos. furnished in the list of annexure may be same as mentioned in the New Mining Plan template.
- b) Fresh feasibility report considering the present market condition may be prepared & signed.
- c) The 106(2)(b) permission from DGMS for working with Deep hole drilling and blasting with use of heavy machineries under MMR 1961 as mentioned above may be enclosed.

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