

SCRUTINY COMMENTS ON EXAMINATION OF THE DRAFT MODIFICATION TO THE APPROVED MINING PLAN IN RESPECT OF HADDINAPADE IRON ORE MINE (ML.NO. 2516) OVER AN EXTENT OF 79.806 HA (AS PER CEC & JOINT DGPS SURVEY) IN SM BLOCK, SANDUR TALUK, BALLARI DISTRICT OF KARNATAKA STATE SUBMITTED FOR APPROVAL UNDER RULE 17(3) OF MCR, 2016.

Chapter 1: GENERAL INFORMATION:

1.1.2: Mining Plan Submission Criteria Details: The Annexure no. given may be verified and corrected as the Annexures has been enclosed 14 and 14A.

1.2: Land Ownership Details: Nature of land may be given as Reserved Forest Land.

1.3.4: Statutory Compliances: The details of permissible Annual Production as per CEC approval letter may be given as section 1.3.4.5 along with the CEC approval letter number and date. The related documents to be attached as Annexure and reference to be given. CFO for enhancement of production to 1.71 MTPA need to be submitted. Reference of annexure submitted should be made at every subheadings of each chapter wherever applicable.

Chapter 2: Geology & Exploration:

2.1.2: Details of Physiographic features and Infrastructures available in and around the lease/block area: The name of the Physiographic features such as River/nallah/reservoir, Public Road, Archaeological Monument etc may be given in the Remarks column

2.1.3: Regional Geology: Regional Stratigraphy of the area may be provided as an Annexure and the Annexure number may be referred in the Text.

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 in the iron ore may be provided.

2.1.4.5: Extent of Weathering/ Alteration: In this para, it is mentioned as the Iron ore is of very hard compact formation hence the weathering is very little. However, in section 2.1.4.6: Nature/Form of Mineral mentioned as friable and flaky type. The same may be reviewed and rectified. Lateral and vertical extent of weathering zone may also be provided.

2.1.4.7: Extent of Mineralization: There are 07 different ore bands, however details of the ore bands and their location, dimension (L x W x D), etc. not given. The same may be provided.

2.2 : Exploration

2.2.1: Name of the exploration agency may be provided.

2.2.1.1: Geological Mapping area covered unit (km² or Hectare) may be specified.

2.2.1.10: Chemical analysis: Details of Radicals analyzed, Type of ore, name of the agency (Laboratory) etc., may be provided. 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 ₂	Al ₂ O ₃	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.*

2.2.1.13: Bulk Density Study: Assumed figures of Bulk Density values given for ore and waste. Bulk density test may be carried out in future programme of exploration.

2.2.1.14: Area Covered under Exploration: Total area column is left blank, information of the same may be provided.

2.2.2.9: SAMPLING: Tentative area covered in the drilling/sampling may be specified.

2.2.2.10: Chemical Analysis: No information is given in the Table. Details of total no. of samples, radicals analyzed, type of Mineral may be provided in the Table.

2.2.2.14: Area Covered under Exploration: Second table of this section may be reviewed, remaining area under different level of exploration given in hectare; the same may be given in percentage and in the following column, area details may be given in Hectare.

2.2.3: ORE BODY GEOMETRY & GRADE: Information on general strike of the 07 ore bands and their dip may be provided in the Table. The name of the seven ore bodies mentioned is not available in the Geological Plan & Plates. The same may be updated in the geological plan and sections.

2.2.5.2: Threshold value & Cut off Parameters: All 35% Fe ore is minable as ROM. This sentence may be modified as 'All 35% and above Fe grade ore is minable as ROM'.

2.2.5.9: Calculation of blocked resources: (i) In the blocked resources calculation, UNFC code given as 331, however in the Reserves/Resources Table (section 2.2.5.11) for Resources UNFC code given as 211 and 221. The same may be re-examined and rectified. (ii) In the Reserves blocked column mentioned as 'others'. 'Others' information may be given in the foot note of the table.

2.2.5.10: Calculation of Reserves: In the Reserves calculation, UNFC code given as 331 & 332, this code refers to Resources. The same may be examined and modified suitably.

2.2.5.11: Reserve Resources re-estimated is given as on 01/07/2021. However, Reserve/Resources information as on 01/04/2021 may also be provided along with this information as per the format.

2.2.6.1: Geological Mapping: The geological mapping on 1:2000 scale already completed for the entire lease area i.e. 79.806Ha. However, Geological mapping on 1:2000 scale is shown in the Future programme of exploration. The may be examined and modified suitably.

2.2.6: Future Exploration Proposal

2.2.6.5: Exploratory Drilling: During the year 2021-22 & 2022-23 a total 06 core bore holes proposed with a total meterage of 500m. However, in the previous approved document dated 09/11/2020 it was proposed to drill 08 number of core bore holes, which are not yet commenced. The bore holes proposed may be reviewed and exploration proposals may be suitably modified to explore the entire mineralized area in G1 level.

From the Graphical lithologs of Plate no. IId/1, IId/2 and IId/3 it is observed that, most of the bore holes are closed in the Mineralized zone. As per Rule 12 (4)(b) of MCDR 2017, depth of exploration to be carried out shall be up to 300 meters or up to discontinuance of ore body, whichever is earlier. Hence, it is advised to review the exploration carried out and propose the exploratory core bore holes suitably to explore the area laterally at G1 level and vertically up to discontinuance of ore body.

CHAPTER-3 Mineral Beneficiation/ processing:

3.9: Overall water requirement of mining and mineral processing: The quantity of water required in Cum/day for mining & allied activities like dust suppression, drilling, plantation, domestic purpose like washing, drinking etc., details to be given under this para. Also indicate source of supply, disposal of water and extent of recycling and chemical analysis of water. Accordingly water balance chart is to be prepared and enclosed as annexure. Reference should be made and ensured that the water requirement should be within the EC & CFO permissible limits.

Chapter 4: MINING OPERATIONS:

4.2.1.1: PITS: Pits Status Active/In-active may be mentioned.

4.2.1.2.1: DUMP DETAILS: (i) Dumps status may be given as Active or In-active and Type of dump may be specified as Waste/Mineral Reject/OB etc. (ii) Only active dump details given in this para, all the dumps in the lease area including temporary/in-active/stabilized dump details may also be provided in this para.

4.2.1.3: DETAILS OF STABILIZED DUMPS: Method adopted for Stabilization of each dump may be given. A few photographs may be enclosed as annexure and reference made here.

4.2.2.1: Bench Parameters: (i) Under this para and all the sub paras in the chapter, Financial Years should be given in the Year column and not as Year 1, Year 2 etc. (ii) Depth of water table information may be provided.

4.2.2.2: Year wise Opencast Development: Year should be given in the financial year. Bench details and Location of Advancement needs to be given under the respective columns of the table which are left blank. Production and development calculation sheet should be prepared incorporating the bench details, advancement locations etc., and reference of the said calculation sheet should be made here. Recovery percentage (95%) is already considered while calculating the Reserves/resources, however again Recovery percentage (95%) applied while calculating production. The same may be re-examined and corrected.

As per the letter no. MC/R&R/2021-22 dated 28/07/2021 from Monitoring Committee; the Production capping for the Mine is 1.56322 Million tonne per annum for the year 2021-22. Production proposals for the year 2021-22 may be given in line with the said approval.

4.3.2: INSITU MINING: Only 95% ROM Quantity taken as salable ROM and remaining 5% not shown in Mineral Reject. The same may be examined and corrected. The Total ROM quantity should be total of saleable ore and Mineral reject.

Fines to lumps ratio for the ROM production may be given by adding separate row.

4.3.4: Calculation Summary: Years in the table needs to be given in financial years and not as year 1, year 2 etc. The total ROM quantity should be as per CEC capping limit. Accordingly, the information given in the table may be revised. The quantities of production and development already excavated during 2021-(i.e 01/04/2021 to 30/09/2021) may be discussed in the review chapter.

4.4.5: Machine Deployment Details: Type of machineries may be specified in all the Tables

4.6.2: Supervisory: Particulars of Supervisory staff is wrongly given under Sl. No., the same may be corrected.

4.6.6: No of Persons Engaged Per Day: Unit (tonnes) may be specified for the material to be Handled per Shift.

4.6.7: Supervision: Details of requirement/proposal of supervisory positions if any may be given in the para.

4.7.1: Existing Dump: If there is any proposal for dumping waste on the existing dumps, year-wise details may be provided.

4.7.2: New Dump: During the year IV & V, it is proposed to backfill in 1.13 Ha and 0.99 Ha area respectively, however from the exploration data (Geological Plan and graphical lithologs) it is observed that, the Fe content is + 35% (i.e. above threshold value of iron ore) in proposed area for backfilling. Hence, the backfilling proposal may be examined and suitably modified.

4.9: Use of Minerals: Name of Mineral may be corrected as iron ore only and under Physical Specifications +10mm ore may be specified as lumps.

Chapter 5: SUSTAINABLE MINING

5.2.1 CSR INITIATIVES: Year wise details in financial years (Separate form for each year) providing all the details of Efforts Made towards Providing Healthcare to Local Communities, Efforts Made towards Providing Transport to Local Communities, Efforts Made towards Providing Hygiene & Sanitation to Local Communities, Any Other Steps Taken for Improving the Socio-Economic Standard of Local Communities etc., needs to be given. Giving only the number of beneficiaries will not suffice. Further, it is observed that many of the activities are not proposed in the CSR, the same may be examined and given. Wherever, it is not proposed, justification for the same may be provided by adding row.

5.4: PROPOSED WELFARE & SOCIO-ECONOMIC DEVELOPMENT PROGRAMS FOR LOCAL COMMUNITIES: Year wise (financial years) details giving name of the villages to be covered and other relevant details should be given which are missing.

Chapter 6: PROGRESSIVE MINE CLOSURE PLAN:

6.1: Status of Land: Here Area under Stack yards (in hect) is given as 0.73 Ha. However under 4.2.1.2.2: STACK DETAILS, the area under mineral stacks is 2.71 Ha. This may be verified and corrected. The extent of the area occupied by dumps given in Chapter 4 is not matching with the extent given under this para.

6.2.1: Backfilling: Area available for back filling is given in Hectares. It is to be given in m². Also the area available is given as 4th and 5th year. It should be given in financial years. Commencement of back filling is subject to intimation of the proposals and its approval before commencing which shall depend on the Threshold values prevailing at that time.

During the year IV & V, it is proposed to backfill in 1.13 Ha and 0.99 Ha area respectively, however from the exploration data (Geological Plan and graphical lithologs) it is observed that, the Fe content is + 35% (i.e. above threshold value of iron ore) in proposed area for backfilling. Hence, the backfilling proposal may be examined and suitably modified.

6.2.2.1: Preparations For Ground Water Recharging: No proposals given for ground water recharging, the same may be reviewed and proposals may be given for Ground water recharging.

6.2.3.1: Green Belt Development: Cumulative work done (up to end of previous block of five years) has been left blank. It needs to be given with location.

6.2.3.1: The year wise plantation proposals may be shown in the respective plans.

6.2.7: Dump Area Stabilization & Development: The financial year needs to be given for the proposals made. If it already exists, it may be mentioned accordingly giving the years during which the same has been carried out.

6.2.9: TOPSOIL MANAGEMENT: Cumulative Work Done as on Date under 6.2.9.1 is not given. During the inspection it is observed existing plantation and dump stabilization by way of plantation wherein topsoil has been used which needs to be given.

6.2.11: LAND USE OF LEASE AREA AT THE EXPIRY OF LEASE PERIOD (CONCEPTUAL STAGE) Virgin area under Green Belt (in hect) is shown as 0 (zero) which is not correct. The extent of green belt area should be given. Also no details of total mined out area Reclaimed and Rehabilitated is given. As per the Hon'ble Supreme Court of India in Writ Petition No.114/2014 dated 08.01.2020, the mining

Lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc., Accordingly the details needs to be incorporated.

Further, it is observed that, many of the activities are not proposed in the PMCP, the same may examined and given. Wherever, it is not proposed, justification for the same may be provided by adding row.

Chapter 8: Review of Previous Proposals

It is seen that no review of the proposals are made for the earlier approved document under this chapter. It is advised to review the previous proposal from the document approved on 09/11/2020 for the period from 2021-22 to 2025-26. Since already 5-6 months are completed for the first year, the works already carried out till date or in progress may be given. Not done as this is first year of Plan Period under modification is not acceptable as many activities under different headings are almost half way thru and at many places activity existing also needs to be given.

PART-B, ANNEXURE: The order of Annexure to be enclosed is to be maintained as per the standard format. Some of the Annexures are wrongly quoted which needs to be corrected as reiterated in the earlier chapters.

Plates:

Surface Plan: (i) Elevation data of contours given as point features, the same may be given in the Attribute data by adding a Elevation column of contour line shape file. (ii) Lease boundary and safety zone is combined in one shape file, the lease boundary may be provided as separate shape file and Safety zone may be combined with other land use information data. The said corrections may be updated in the all the applicable plans.

Geological Map: At the central part of the lease area, soil cover shown, however drilling has been carried out in the soil cover area (Bore os. BKH – 81, 65, 73, 74, 75 and 76). From the bore hole data it is observed that iron ore mineralization established beneath the soil cover. It is advised to update the geological map as per the drill core data and propose additional bore holes in the soil cover area for exploring the mineralized zone under G1 level.

Production & Development Plan: (i) From the proposed 05 years plans it is observed that, there is an advancement of benches in the Production & Development sections, however, in the Production & Development Plan there is no sign of advancement of benches. All the benches are overlapping without any shift from 1st to 5th year. The may be rectified. (ii) Benches RL given in the Production & Development Plan shape file need to be reviewed and corrected.

Reclamation Plan: Proposed Backfilling area may be reviewed as per the comments given in para 6.2.1, accordingly plan may suitably modified.
