

SCRUTINY COMMENTS ON EXAMINATION OF DRAFT REVIEW AND UPDATION OF MINING PLAN INCLUDING PROGRESSIVE MINE CLOSURE PLAN IN RESPECT OF JIGINAHALLI MANGANESE ORE MINE (ML NO.2482) OVER AN AREA OF 22.45 HA (AS PER LEASE DEED), 24.82 HA (AS PER CEC SKETCH) IN JIGINAHALLI VILLAGE, SANDUR TALUK, CHITRADURGA DISTRICT, KARNATAKA STATE, SUBMITTED BYM/S. MARWA MINING COMPANY, FOR APPROVAL UNDER RULE 17(1) OF MCR, 2016.

GENERAL

1. Refer Minerals (Other than Atomic and Hydro Carbons Energy Mineral) Concession (Fourth Amendment) Rules, 2021 published vide Ministry of Mines, Gazette Notification G.S.R. 775(E) dated 2nd November 2021. In accordance with Sub-Rule (2) of Rule 17 of MCR, 2021 lessee has to submit the Draft RUMP 180 days before expiry of the plan period. The document has not been submitted in stipulated time. Hence, lessee needs to pay Rs.2,000/- per day penalty for late submission.

-In the instant case, the soft copy along with the processing fee is submitted to this office online on 07/03/2022 and it is 125 days late from the date of said Notification. You are therefore advised to pay penalty @ Rs2,000/- per day X 125 days i.e. Rs.2,50,000/- (Rupees two lakhs fifty thousand Only). The penalty may be paid by Demand Draft drawn in favour of Drawing & Disbursing Officer, Indian Bureau of Mines, Bangalore.

2. No cells may be left blank. Either “Nil” or “Not applicable” may be furnished.
3. Soft copy of the Excel sheet/word format may be filled in & submitted while submitting the final copy.
4. If any relevant information pertaining to the ‘calculation’ or ‘supporting information’ or ‘clarification’ may be provided as foot note in the respective table/para.
5. Wherever additional information or supporting document is given in Annexure, Annexure no may be specified in respective paras.
6. Serial Numbers of paras are not maintained as per the prescribed format. This may be verified and maintained as per the formats issued on FAQ on New Mining Plan format vide letter No.R-11011/1/IBM-M-A-MP/2012-CCOM-Vol-II dated 08/09/2021.

Chapter-1: General Information:

7. **Para 1.1: Lease Details:** The extent of lease area as per the CEC sketch and Mining lease deed may be given.
8. **Para 1.3.1: Approval of earlier Mining Plan & its subsequent Review in chronological Order:** Under this para only details of approved documents of Mining plan /SOM/RUMP needs to be given. If any additional information is felt necessary to be given for better clarity, the same may be added in the foot note.
9. **Para 1.3.2: Partial Surrendered Area during the stages of operation in chronological order:**The letter from DCF Ballari dated 31/12/2021 directing the lessee to submit the proposal for relinquishing/surrendering the excess area of 2.37 Ha which is referred in Annexure 14 D may also be enclosed. Cost of mining worked out for the instant lease is also enclosed as Annexure 14 D which may be verified and corrected.
10. **Para 1.3.4.1: Environment Clearance:**The copy of acknowledgement slip for TOR application is enclosed. Acceptance letter post verification issued to the project proponent may also be submitted.
11. **Para 1.3.4.3: Forest Clearance:** Validity of forest clearance may be clearly mentioned. The write up given under this item do not convey proper meaning.

12. **Para 1.3.5.1: Location of Boundary Pillars:** (i) Under this para only the details of pillars of the existing mining lease boundary be given. (ii) Lease boundary pillar co-ordinates provided are not authenticated by State Government. The same may be authenticated along with the Geo-referenced sketch map as per CCOM office circular no. 02/2010 dated 06/04/2010 and circular no. 1/2021 dated 07/06/2021.

CHAPTER-2-GEOLOGY AND EXPLORATION:

13. **Para 2.1.4: Local geology & Structure:** General thickness of the Manganese float ore and Manganiferrous clay/shale may be provided. Below Manganiferrous clay/shale it is mentioned as basement complex, which is regional lithology, basement rock observed in the lease area through pitting/drilling may be specified.
14. **Para 2.1.4.6:** The information given in this para may be simplified. Only Nature/form of ore and lumps & fines ratio may be specified.
15. **Para 2.2.1.9: Sampling:** (i) Details given about the sampling may be deleted. (ii) Total number of samples collected may be provided combinedly. (iii) In Location column, location range may be provided. Individual sample details may be provided in Annexure. (iv) Details of chemical analysis given in Remarks may be deleted, the same may be provided in Para 2.2.10 Chemical Analysis.
16. **Para 2.2.10 Chemical Analysis:** (i) Details given in this para may be simplified. In Sample ID column, total number of samples analysed and Type of sample may be given, grade range may be provided in grade %. Details of the samples (pit log/borehole log) along with analytical data and laboratory certificate may be enclosed as Annexure.
17. **Para 2.2.1.14:** Area covered under different level of exploration may be reviewed for its correctness.
18. **Para 2.2.2.1 Geological Mapping:** Only Financial year period may be specified in Year column.
19. **Para 2.2.2.5 Pitting:** Average grade of Mn may be provided in Grade column.
20. **Para 2.2.1.7.1 Core/Non-core Drilling:** Details of samples analyzed given in foot note, the same may be provided in Para 2.1.1.7.1. Details of litholog in CSV/Excel format may be provided as enclosure.
21. **Para 2.2.2.9 and Para 2.2.2.10:** The details of sampling and chemical analysis provided in these paras may be deleted and same may be provided in Para 2.1.2.9 and Para 2.1.2.10.
22. **Para 2.2.2.14 Area covered under exploration:** The details given in this para is not correct, the same may be reviewed and suitably modified as per the exploration carried out.
23. **Para 2.2.3 Ore body Geometry and grade:** Average Strike length and width of the ore body is not specified; hence, total area of the float ore may be specified in the foot note.
24. **Para 2.2.4.1 Methodology:** (i) The details given in this para may be reviewed, only information pertaining to methodology adopted for reserve/resources estimation along with level of exploration with grade, lumps and fines ratio, intercalated waste, bulk density of ore & waste and other important details may be provided.
25. **Para 2.2.4.2: Resource Calculation:** (i) The information given in the depth column may be reviewed for its correctness, since sectional area is considered for calculation, depth details may be deleted. (ii) In all the section line, manganese ore grade is specified as Mn:22.85%, the same may be verified, actual average grade in section line may be specified in grade column. (iii) As per the Bulk Density Study Report, Bulk Density of Manganese float ore is 3.01 t/m³, however, in this para for calculation 3.0 t/m³ Bulk Density is considered, the same may be reviewed and corrected. (iv) In the eastern part of geological cross sections (H-H', I-I', J-J' and K-K') it is observed that, the resources are

estimated beyond the explored depth, the same may be reviewed and corrected in Cross-sections and in calculation of Reserve/resources.

26. **Para 2.2.4.3 Mineral Resource Estimate for Conversion to Mineral Reserve:** (i) The information given is not appropriate w.r.t. title of the para, the same may be revised. In this para, it may be mentioned that Mineral reserves are estimated from geological resources by considering the level of exploration, deducting the blocked resources in safety zone & beyond Ultimate Pit limit etc.,
27. **Para 2.2.4.5: Mining Factors or Assumptions:** (i) In the Mining Factors, Overall pit slope, Ultimate Pit Depth, other mining factors if any may be provided. (ii) Requirement of Blasting is mentioned in this para, since the Deposit Type is 'Float Ore' and the ore is soft in nature, the requirement of Blasting may be verified. (iii) 6m height is proposed on non-working benches, for the safety point of the maximum height of the benches in float ore should be 3m and bench width should be at least 3 times the bench height.
28. **Para 2.2.4.6: Metallurgical Factors or Assumptions:** The information given in this para may be simplified by deleting the reference information given in table 2.3 and 2.4. The additional supporting information may be provided as Annexure.
29. **Para 2.2.4.7 Cost & Revenue Factors:** Only summary of Capital Cost, Operational Cost, Statutory Payment per ton etc. may be provided in this para, the other details may be provided in Annexure.
30. **Para 2.2.4.8 Market Assessment:** The details given in this para may be simplified, Only Potential buyers/ bidders' details may be provided.
31. **Para 2.2.4.9:** The given information in this para may be reviewed. The Other Modifying factors any applied for calculation of reserves may be provided, if no factors applied, the same may be mentioned.
32. **Para 2.2.4.11 Calculation of Blocked Resources:** (i) Data provided for sl. No. 4 to 8, UNFC code is not specified, the same be given. (ii) The information given in Bulk Density column is not correct, the same may be reviewed and suitably corrected. (iii) The grade and calculation details may be reviewed and suitably corrected as per the comments given in para 2.2.4.2.
33. **Para 2.2.4.12 calculation of Reserves:** (i) The 111 UNFC code specified for all the section line calculation is not correct, the same may be reviewed and suitably corrected. (ii) The grade and calculation details may be reviewed and suitably corrected as per the comments given in para 2.2.4.2.
34. **Para 2.2.4.13:** After the revised calculation 2.2.4.2, 2.2.4.11 and 2.2.4.12 in the details of Reserve/Resources given in this may be updated.
35. **Para 2.2.5 Future exploration proposal:** From the Geological Map it is observed that, eastern side of the lease area (between Section lines A-A' to G-G') not explored by Pitting/trenching/drilling and no exploration activity is proposed during the Plan period. As per Rule 12(4) of amended MCDR, 2021, in the case of existing mining leases, "Detailed exploration (G1 level) over the entire potentially mineralized area under the mining lease shall be carried out in the manner specified in the Minerals (Evidence of Mineral Contents) Rules, 2015 within a period of five years from the date of commencement of these rules.". Hence, it is advised to propose the exploration activities as per the MEMC Rules to cover the mineralized area into G1 level. Further it is also advised propose the drilling where the Pits/bore holes are ended in mineralized zone to prove the ore body 3-dimensionally.

CHAPTER-3-MINERAL BENEFICIATION/PROCESSING:

36. **Para 3.1: Mineralogy of the ROM Ore/ Mineral:** (i) Valuable mineral name should be 'psilomelane' or 'pyrolusite'.

37. **Para 3.2: Complete Chemical Analysis of the ROM Ore/Mineral:** Radicals including Mn and other radicals analyzed for, from NABL accredited laboratory need to be given and report be enclosed annexure and annexure number should be referred under this para.
38. **Para 3.5.3: Product Quality:** Under this para -10mm is considered as fines and average Mn content is said to be 20.85%. However, under para 2.1.4.6 it is stated to be clayey soil in float ore zone having Mn value below threshold limits and discarded as waste. Both statements are contradictory and may be verified and corrected appropriately.
39. **Para 3.9: Overall water requirement for mining and mineral processing:** The quantity of water required in KLD for mining & allied activities 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.
40. **Para 3.10: Flow sheets and charts:** Comment given under para 3.5.3 may be may be referred and flow chart for crushing and screening given under this para be corrected.

CHAPTER-4-MINING OPERATIONS:

41. **Para 4.2.1.2.2: Dump Details (i)** The details of dump ID (dead dump) given here may be checked for its correctness as it is mentioned as no stabilized in the mine under para 4.2.1.3. (ii) The height of the active dump AD is given as 16 m. It is advisable to restrict the height of the dump with each terrace of 10 m each to a maximum height as per the EC condition.
42. **Para 4.2.1.3: DETAILS OF STABILIZED DUMPS:** Under Para 4.2.1.2.2 it is stated that one dead dump of 11m exists in the lease area. Here no details are given. If the same is not stabilized and protective measures adopted, the proposals for stabilizing and protective measures be given in PMCP chapter.
43. **Para 4.2.2: Open Cast Mining: Bench Parameters:** (i) The entire mine contains float ore and Float ore mining is considered as mining of loose material. Therefore, the maximum height of the mine benches may be restricted to 3m and width 3 times of the bench height. Accordingly, the proposals may be rectified. The proposals given as 3-6 m with explanation in the foot note may also be reviewed and corrected.
44. **Para 4.2.2.2: Year wise Opencast Development:** (i) The manganese float ore is stated to be associated with 30% clay by volume. This may be substantiated by a fresh study after the resumption of Mining activities covering few locations of the proposed plan period. If there are considerable changes in the recovery factor, the document will have to be modified incorporating the outcome of the study. (ii) Production and Development Plan should indicate the boundaries of each year of proposed workings.
45. **Para 4.2.2.3: Transportation and Hauling Equipment:** The capacity of the dumper needs to be given in CBM as per the format.
46. **Para 4.6.2: Man Power deployment: Supervisory:** Here themanpower deployment is given over 3 shifts i.e., Shift 1, Shift 2 & General shift. However, in all other part of the document like machine calculation etc., it is stated as one shift. This may be verified and corrected. Also, correction in Para 4.6.6: needs to be attended accordingly.
47. **Para 4.7.2:** A foot note may be corrected and given indicating the concurrent backfilling of the waste into the mined-out pits and justifying the non-requirement of a new waste dump.

48. **Para 4.9: Use of Minerals:** Under Proposed use of Mineral, it may also be specified in the foot note as direct selling through Auction process as per the procedure existing in the State of Karnataka.

CHAPTER-5-SUSTAINABLE MINING:

49. **Para 5.2: CSR Initiatives:** for the year 2023-2024, the number of beneficiaries given under para 5.2.1.6 for both proposals and cumulative column may be verified for its correctness. year on year proposals to be added taking 2022-2023 as the base year covering the entire plan period.
50. **Para 5.2.1.13:**The proposal of green Energy consumption every year should be given in percentage (%) as per the format.

CHAPTER-6- PROGRESSIVE MINE CLOSURE PLAN:

51. **Para 6.2.1:** Backfilling: The foot note for material available for backfilling may be corrected by stating “will be backfilled if mineral content is below the threshold value”.
52. **Para 6.2.2.2: Protective Measures:**(i) It is noted that proposals for constructing toe wall & garland drains and plantation over these dumps are proposed during the plan period in these paras of the chapter. It is stated in para 6.2.1 that if the dumps are analyzed containing mineral content above threshold value, it will be mined out or if analyzed below threshold value it will be utilized for backfilling of the mined-out pits. In both the cases these existing dumps will not exist. Therefore proposals for constructing toe wall & garland drains and plantation over these dumps seems to be unrealistic. It may be reviewed and proposals modified. (ii) During inspection it is observed that the entire Mining lease boundary is not fenced or has been removed. Year wise fencing along with erecting intermediate boundary pillars at every 20 meters interval needs to be given. Also 7.5 meters of green belt needs to be demarcated all along the boundary.
53. **Para 6.2.11: Land use of lease area at the expiry of lease period (conceptual stage):** In the foot note here it may also be proposed to undertake fencing of mine pits, re-grassification of dumps if any and top benches, utility service area etc. In line with FMCP. Details may also be updated in Plate – Conceptual Plan and section.

CHAPTER-7- FINANCIAL ASSURANCE/PERFORMANCE SURETY:

53. Revised bank guarantee as per the Mineral Conservation and Development (Amendment) Rules, 2021 needs to be submitted.

CHAPTER-8- REVIEW OF PREVIOUS PROPOSALS:

54. **Para 8.1.2:** Since the last approved document didn't have SDF proposals, accordingly it should be mentioned “Not applicable” under this para.

Plans & Sections (hard copy)

55. List of all the plates submitted and indexed.
56. Lease Boundary Pillar Co-ordinates (latitude and longitude) may be provided in all the Plans.
57. Plans and sections should be suitably updated as per changes made in text
58. All the hard copies of the plates should be folded and placed in the pouch in such a way that the Title of the plate and Numbers are clearly visible.
59. 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.

60. 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.
61. The numbering of plates shall sequentially be maintained as per the format. 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.
62. All plans and sections should be signed with date by certified surveyor, Qualified Person, Geologist, Mining Engineer as per provisions of MCDR 2017.
63. **Plate IB:** CEC sketch enclosed does not contain lease boundary pillar co-ordinates. State Govt. authenticated lease boundary sketch along with lease boundary pillar co-ordinates may be provided
64. **Surface Geological Plan & Sections (Plate No.4 & 5):** In these plates all the necessary corrections may be done as per the comments placed under Geology and Exploration chapter.
65. **Production and Development Plan & Sections (Plate No 6A to 6E & 7):** In these plates all the necessary corrections may be done as per the comments placed under chapter 4: Mining operations.
66. **Conceptual Plan & section (Plate No.8 & 9):**This plan 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, construction of retaining wall if any, garland drain & re-grassification of the degraded land.
67. **Financial Assurance Plan (Plate No.12):** (i) only the outline with solid fill colors may be marked for different land particulars and indexed. (ii) All the land particulars to be shown prominently in this plate.

Plans & Sections (Soft copy)

68. All the plans in softcopy (kml files) need to be updated as per the comments given in the text part also in plates hardcopy.

ANNEXURE:

69. The numbering of annexure has not been sequentially maintained as per the format. Numbering of annexure to be specifically maintained as per the format. Any additional annexure enclosed may be followed after annexure no 18 with corresponding details. All the annexure as mentioned in above scrutiny comments of different chapters to be enclosed. Also, corrections in the annexure, as mentioned above in scrutiny comments of different chapters to be incorporated and corrected annexure to be enclosed.
70. Undertaking/Consent letter from the lessee may be digitally signed by the lessee.
71. Bulk density test report of each of the material handled in the mine may be enclosed.
72. Copy of Valid Bank Guarantee for the entire plan period as per the amended MCDR Rule 2021 needs to be submitted.
73. All the annexure to be properly numbered/ paged and relevant annexure to be signed by QP. The Page no range should be accordingly given in list of Annexure. All the annexure should be legible.
