

SCRUNITY COMMENTS ON EXAMINATION OF THE DRAFT REVIEW AND UPDATION OF MINING PLAN INCLUDING PMCP IN RESPECT OF TUNGA IRON ORE MINE (ML.No. 0004), OVER AN EXTENT OF 32.86 HA, SITUATED IN ITTANAHALLI, VILLAGE SANDUR TALUK, BELLARY DISTRICT OF KARNATAKA STATE SUBMITTED UNDER RULE 17(1) OF MCR,2016 FOR APPROVAL BY M/S JSW STEEL LIMITED.

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 14/12/2021 and it is 42 days late from the date of said Notification. You are therefore advised to pay penalty @ Rs2,000/- per day X 42 days i.e. Rs.84,000/- (Rupees eighty four 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. The information given in PDF file is not in line with the information given in Excel file, there are many information are missing in the excel file. 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. Undertaking/Consent letter from the lessee may be digitally signed by the lessee.
7. Serial Numbers of all the chapters and sub paras should be 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.
8. On the cover page the extent of Mining lease area as per the Lease deed may also be mentioned. The name of district mentioned may be verified and corrected. Also type of lessee may be corrected as Private.

Chapter 1: GENERAL INFORMATION

9. **Para 1.1.2:** Details given under para Period for which modification is proposed may be deleted and may be mentioned as ‘Not Applicable’. The change in the extent of Mining Lease will be taken care in the Modifications to the approved document submitted in this office.
10. **Para 1.2: Land Ownership Details:** Details of Nature of Land may be provided.
11. **Para 1.3.1:** Details of Approval letter of earlier approved Mining Plan mentioned here and enclosed as Annexure. Annexure no. may be specified under this para.
12. **Para 1.3.2: Partial Surrendered Area during Stages of Operations in Chronological Order:** The earlier approved Mining was approved for an extent of 33.21 Ha. Forest clearance was granted for 32.68 Ha and accordingly lease deed executed. All the details as per the prescribed format be given under this para along with the supporting documents as annexure and reference of the annexure be given here.

13. **Para 1.3.4: Statutory Compliances:** (i) The details of permissible Annual Production as per CEC approval letter along with CEC approval letter number and date may be given as para 1.3.4.5 and supporting document may be provided as Annexure.
14. **Para 1.3.6: Owner / Nominated Owner:** The designation of Dr.Vinod Nowal in not matching with the Board Resolution for nominated owner attached as Annexure-4 and List of Board of Directors enclosed vide Annexure-19. It needs to be updated.
15. **Para 1.3.4.2:** SPCB Approvals is valid till 16/02/2022 the same needs to be renewed.
16. **Para 1.3.4.6: Explosive license:** All the details of explosive license may be provided as per the format supported with the copy of the same vide annexure. Annexure number may be provided in the foot note.
17. **Para 1.3.7:** (i) The consent letter issued by lessee and certificate of Qualified Person are not digitally signed. The same needs to be digitally signed.

CHAPTER-2-GEOLOGY AND EXPLORATION:

18. **Para-2.1.2: Details of Physiographic features and Infrastructures available in and around the lease:** Under Archaeological monuments/places of worships/ public utilities etc., only the name of the village given will not suffice. All the details of what is referred to should be given. (ii) Details of the Mining lease adjacent to the Mining leases within 5km may be specified in others.
19. **Para- 2.1.4.3-** Lithology, Petrographic & Mineralogical Description for Major, Associated & Indicator Minerals-(Pg.8) : Band-I : It is mentioned that the width of ore body is more at centre(SecS4-S4'), but it is not correct at the Section line S4-S4' as per the Geological Plan (Plate no.3).This may be corrected. Band-4 (Pg.9) : There is no such small band having the length of 220m towards eastern side of the Band-3 as per the Geological plan(Plate.3).The correct information may be furnished. (ii) Details of Hematitic Siliceous Iron ore (HSIO) may also be provided in this para.
20. **Para- 2.1.4.7- Extent of Mineralization- (Pg. 9)** – (i) Extent of Mineralization of all the Iron Ore bands, float ore (if any) may be provided in this para. (ii) the spelling of word “wide” variations may be corrected in the 2nd paragraph.
21. **Para 2.1.4.8:** Deposit type is mentioned as Bedded Startiform tabular deposit of irregular habit. If the deposit is irregular habit, the drill spacing for G1 level should be 50m or closer. Accordingly the area considered under G1 level of exploration may be reviewed.
22. **Para2.2.1.2 to 2.2.1.4:** Where the particular exploration activity is not proposed in the plan period, the same may be specified as ‘No proposal & Not carried out’.
23. **Para- 2.2.1.5-Pitting:** (i) “Nil” may be deleted. In the table, under column “Litho units exposed”, the information may be furnished. (ii) Average grade (Fe) may be specified for each pit. (iii) Litho unit and Form-I may also be enclosed as annexure for 5 trial pits carried out during the year 2021-22.
24. **Para 2.2.1.10:** (i) 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 for also the 20 boreholes (8 boreholes of 2018-19 and 12 boreholes of 2019-20) drilled by the lessee. The file formats are as follows:

(a) Collar

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	SiO2	Al2O3	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 %

These may be referred and enclosed as Annexure.

- ii) **Para 2.2.1.13- Bulk density-(Pg. 13)-** There is change in the bulk density of Iron Ore as per the last approved mine plan. The change considered from 3.5 t/m³ to 3.0 t/m³ may be justified supported with the test report and method adopted for calculating bulk density of ore and waste section under this Para as per the format and details to be given. The samples studied not specified, the same may be mentioned.
- iii) **Para 2.2.1.14- Area Covered under Exploration-(Pg. 14)-** The information on area covered under G-1, G-2, G-3, G-4 exploration, Area proved as non-mineralized area etc., is to be given correctly in the table under this Para as shown in the Geological Plan (Plate no.3).
- iv) **Para 2.2.2.13:** Bulk density Established by MMTC if any may be provided under this para.
25. **Para 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.
26. **Para 2.2.3-Ore Body geometry & Grade- (Pg. 16)-** The The name of the 4 ore bodies mentioned are not available in the Geological Plan & sections. The same may be updated in the geological plan and sections. The Average width and average grade given for all the bands may be checked and corrected. The average strike length of Iron ore Band-4 may be checked and given as per the depiction on the Geological plan. Also, the different iron ore bands depicted on the Geological plan don't match with the geological sections S5-S5' to S11-S11'.
27. **Para 2.2.4.2-Resource Calculation-(Pg-18)-** i) These resource calculations should be as per the sectional areas of all cross sections of four bands of ore body by showing their trends in the Geological cross sections with respect to Geological Plan as per Para 2.2.3: Ore body geometry & Grade. ii) While giving the section wise resource calculation, section wise, level wise (G1/G3) separate calculations needs to be given.
28. **Para 2.2.4.7: Cost & Revenue Factors:** Summary of Operating Cost of Iron Ore Mining, Capital Cost, Working Capital, may be provided in this para. Annexure no. of the Feasibility report may be referred.

29. **Para 2.2.4.11: Calculation of blocked resources:** It is observed that most of the iron ore resources are lying in the western and northern part of the Mining lease and the ore bands having westerly dip and extending into the adjacent Mining lease along the western and Northern mining lease boundary wherein considerable quantity of Iron Ore resources are blocked in the safety zone. Adjacent Mining lease also belong to the same Lessee, keeping in view the mineral conservation aspect, it is advised to propose and obtain common boundary working permission from the concerned authorities so as to bring the blocked resources under minable reserves category.
30. **Para 2.2.4.13:** It is stated that Hematitic Ore and Hematitic Siliceous Ore is estimated as on 01/04/2022 which is incorrect. Reserves/ Resources needs to be given as on 01/04/2021 and production achieved up to 30/11/2021 may be given in the foot note or separate table may be given for Reserves/Resources as on 01/12/2021. Also the details given in the feasibility report vide Annexure -12 need to be corrected accordingly.
31. **Para 2.2.5.5: Exploratory Drilling:** (i) The average depth of the borehole proposed for the Year 2024-25, should be given. From the Graphical litho logs of Plate no. 4, it is observed that, some of the bore holes are closed in the Mineralized zone. As per MEMC Rule, Detailed exploration G1 means 3-dimensional delineation of the deposit through exploration. Hence, it is advised to review the exploration carried out and propose the exploratory core bore holes suitably. (ii) In the foot note of the table it may be mentioned that, the proposed depth of drilling is tentative and drilling will be carried out up to the non-mineralized zone. (iii) Drilling may also be proposed where the bore holes are ended in mineralized zone. (iv) The year mentioned in detailed proposal of exploration enclosed as annexure -27 is not tallying with the year of proposal given under this para. Detailed proposal of exploration keeping in view the aforesaid comments may be reviewed and corrected accordingly. (iv) Type of borehole proposed is suggested to restrict to core borehole only in Para 2.2.5.5.1: Core/Non-core Drilling owing to the complicity of iron ore deposits.

Chapter 3: MINERAL BENEFICIATION / PROCESSING

32. **Para 3.1: Mineralogy of the ROM ore/ Mineral:** (i) the details of High Siliceous Iron Ore may also be provided. (ii) Details of gangue minerals may be provided and (iii) if any Mineralogical study is carried out, the report may be enclosed as Annexure and Annexure no. may be referred in this para. The details of gangue minerals along with its percentage need to be given.
33. **Para 3.3: Crushing Section:** Flow chart showing Process of crushing and screening if any here may be provided as Annexure and annexure no. may be specified in this para.
34. **Para 3.5.1: Screening and Classification:** Flow chart showing Process of screening may be provided as Annexure and annexure no. may be specified in this para.

Chapter 4: MINING OPERATIONS

35. **Para 4.2.1.3: Details of Stabilized Dumps:** Though there is proposal for re handling of the stabilized dump, details of Number of terraces, Average height of the terraces (m) length of the existing garland drain and extent of it stabilized as on date be provided in this para, only if the part of the dump is proposed to be re handled or mined, the extent of remaining dump proposed to be stabilized accordingly be given. If not the details of stabilization may be reviewed and accordingly given.
36. **Para 4.2.2.1: Bench Parameters:** (i) Maximum Depth of working may be given in w.r.t. mRL (ii) Depth of water table may be given w.r.t. mRL. Under this table it is mentioned as year wise Development & Production sections is enclosed vide Plate 6A to 6E. However, no such sections

are found enclosed and all the five year working sections are given in one Plate i.e Plate-6. Accordingly, it may be corrected.

37. **Para 4.2.2.2:** (i) Distance of advancement of benches may be furnished along with the direction. (ii) Under location of advancement, direction of advancement has been furnished. The same may be corrected & location coordinates may be given.
38. **Para 4.3: Material Handling Summary:** (i) Hydrological Study need to carried out regularly as prescribed in the EC. The Bulk Density study may be conducted as per M (EMC) Rules, 2016 and SOP of CGPB and study report may be enclosed. The report should contain the details of sample location, sample type, photograph of the pit where sample collected and methodology adopted for Bulk Density Study.
39. **Para4.4.4: Drill Machine Requirement:** The yield per hole considered under this table for ore and Waste does not match with the details provided under Para4.5.1 & Para 4.5.2 i.e Blasting & Explosive Requirement in Waste and Mineral / Ore. May be checked and corrected with correct details under all the above referred paras.
40. **Para 4.6.3 & Para 4.6.4: Skilled and semi skilled Workers and operators:** Loader operator is considered under both the paragraphs. May be checked and corrected if applicable.
41. **Para 4.7.3: Existing Stack:** There are no proposals for new stacks which may be mentioned under para 4.7.4: **(New Stack)**. However, it is advisable; some area may be proposed for new stack (Temporary) at suitable locations to avoid the deviations in the proposal.
42. **Para 4.9: Use of Minerals:** (i) In chemical specification column, average of all the major radicals analysed for the Iron ore as required by the captive steel plant may be provided.

Chapter 5: SUSTAINABLE MINING

43. **Para 5.2.1: Area for water Storage and Recharge facility:** The extent of area given year wise and finally given as cumulative 450 Ha appears to be unrealistic. May be checked and corrected if applicable.
44. **Para 5.2.1.14:** Details of Water usage and recycled water use may be provided. As per the EC condition, the lessee is required to construct catch drains and siltation ponds of appropriate size to arrest silt and sediment flows from the mine working, OB, and mineral dumps. The water so collected should be utilized for watering the mine area, roads, green belt development etc., The water balance chart enclosed as annexure 21 should cover this aspect also for source of water and supported with the project proponent commitment made before the starting of the mine to competent authority for drawl of requisite quantity of water. Accordingly necessary year wise details may be given under this para and Para 6.2.2 Water Reservoir.

Chapter 6: PROGRESSIVE MINE CLOSURE PLAN

45. **Para 6.2.3.2: Year Wise Proposal:** Only 250 & 380 no. of plants per year proposed as green belt plantation during the years 2022-23 & 2023-24 respectively which appears to be very less, the number of plants should be increased and proposal for gap plantation during the subsequent years of the plan period also be proposed.

Chapter 7: FINANCIAL ASSURANCE/ PERFORMANCE SURETY

46. The existing performance security is Rs. 81229965/- for **6.939 MMT** iron ore and is valid upto 21.02.2022, the difference amount of performance security if applicable may be paid to State Government as per the procedure.

Chapter 8: REVIEW OF PREVIOUS PROPOSALS

47. **Chapter 8:** Review of Previous Proposals: All the sub paras under this chapter should be reviewed for all the respective activities year wise covering the previous plan period.
48. **Para 8.1.1:** The lease area utilization should be in line with the Annual Return 2020-21 submitted.

CHAPTER-9- IMPACT ASSESSEMENT

49. Though this chapter is applicable only for fresh grant, all the headings & sub headings may be furnished with "Not Applicable" against each of the same as given in the format.

ANNEXURE:

50. 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.
51. Some of the Annexure nos. are not tallying with the reference given in the text. All the Annexure should be verified and suitably Annexure no. may be given.
52. Undertaking/Consent letter from the lessee may be digitally signed by the lessee.
53. Flow chart showing crushing and screening should be provided.
54. Bulk density test report of each of the material handled in the mine may be enclosed.
55. A copy of NABL Accreditation Certificate of M/s QMC Chemical Lab may be enclosed as annexure.
56. In Annexure-13, the chemical analytical data for the borehole no.MTM-8 is missing. This may be furnished.
57. In Annexure-27, the year of proposal may be given as per the same mentioned under para 2.2.5.5.1: Core/Non-core Drilling.
58. 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.

PART-C. PLANS &SECTIONS:

59. **All plan submission should be output of GIS in SHP format.** All sections submission should be in dwg. Format (Auto-cad output). The numbering of plates has not been sequentially 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.
60. All the plans & sections to be prepared in UTM grid and Northing & Easting gridlines should be clearly demarcated throughout the plan. The scale of the plan to be mentioned. The Mine Lease boundary along with 7.5 m safety zone should be prominently demarcated in all related plans & section. The other safety zone for Nala/Road/Villages/Electric power line etc. if any inside the ML area as per the statutory norms should also be demarcated along with the details of the safety zone, in the index.
61. It should be ensured that all attached plans & sections are prepared as per the content & scale specifications, of Rule 31(General requirement about Plan & Sections) of MCDR 2017& IBM Circular no. 1/2021.All plans and sections should be signed with date by certified surveyor, Qualified Person, Geologist, and Mining Engineer as per provisions of MCDR 2017.

62. **Geological Plan (Plate no. 3): 1)** the colour of litho units in the plates should be same in the geological plan and sections. 2) Geological Section (Plate No. 4)-All four bands of ore body as per the Para 2.2.3: Ore body Geometry & Grades of the Text may be shown with their trend in the sections with the help of lithologs of all boreholes drilled and exploratory pits by MECL and the lessee.
63. The lithologies as given in the geological plan should also be given in all the production & Development plans.
64. The KML file of all the plans to be also submitted in soft copy.
