



भारत सरकार GOVERNMENT OF INDIA
खान मंत्रालय MINISTRY OF MINES
भारतीय खान ब्यूरो INDIAN BUREAU OF MINES
क्षेत्रीय खान नियंत्रक के कार्यालय
OFFICE OF THE REGIONAL CONTROLLER OF MINES



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BHUBANESWAR-751020

No. MRMP/A/16-ORI/BHU/2021-22

Date: 15.07.2021

To

Shri Harinand Rai, Director & Nominated Owner,
M/s Steel Authority of India Ltd,
Ispat Bhawan, Lodhi Road,
New Delhi-110003

Sub: Approval of modification of Review of Mining Plan of Bolani Iron & Mn Mine along with Progressive Mine Closure Plan (PMCP), over an area of 1586.36 ha in Keonjhar district of Odisha State, submitted by M/s Steel Authority of India Ltd under Rule 17(3) of MCR, 2016.

Ref: - i) Your letter No. SAIL/DTPRM/2021/110 dated 26.03.2021 received on 28.06.2021.
ii) This office letter of even no. dated 28.06.2021.
iii) This office letter of even no. dated 28.06.2021 addressed to the Director of Mines, Govt. of Odisha, copy endorsed to you.

Sir,

This has reference to the letter cited above on the subject. The draft of modification of Review of Mining Plan along with Progressive Mine Closure Plan (PMCP) has been examined in this office based on site inspection carried out on 05.07.2021 by Shri Ramkishan R, Senior Asst. Controller of Mines & Shri S K Mohapatra, Senior Mining Geologist. The deficiencies observed are enclosed herewith as Annexure- I.

You are advised to carry out the necessary modifications in the draft modification of Review of Mining Plan in the light of the contents vide Annexure- I and submit **three (3) firm bound and two (2) soft copies of the document text in USB Pendrive/Flash drive in a single MS Word file (the drawing/plates should be submitted in Auto CAD compatible format or JPG format in resolution of 100x100 pixels on same USB Pendrive/Flash drive)** with financial assurance under Rule 27 of MCDR 2017 of the Modification of Review of Mining Plan within 15 (Fifteen) days from the date of issue of this letter, for further necessary action. If the total page of annexures exceeds 50 (Fifty) then it should be submitted as separate volume. But reference of these annexures must appear in the modification of Review of Mining Plan document. The plates are also to be submitted in separate volume.

The para-wise clarifications and the manner in which the deficiencies are attended should invariably be given while forwarding the modified copies of the modification of Review of Mining Plan. It may be noted that no extension of time in this regard will be entertained and the modification of Review of Mining Plan will be considered for rejection if not submitted within above due date. It may also be noted that if the deficiencies are not attended completely, the submission would be liable for rejection without further correspondence.

Yours faithfully,

(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional controller of Mines

Copy for kind information and further necessary action to Shri Rajesh Kumar Naik & Subhasmita Das, Raw Material Division, 2nd Floor, Rourkela Steel Plant, Dist- Sundargarh, Odisha-769011.

(HARKESH MEENA)

क्षेत्रीय खान नियंत्रक / Regional controller of Mines

Scrutiny comment on Modification of Review of Mining Plan including PMCP of Bolani Manganese and Iron Mine of M/s Steel Authority of India Limited over an area of 1586.36 Ha in Keonjhar district of Odisha

GENERAL:

1. Sequence of paragraph, formats and its numbering as per IBM Manual Appraisal MP 2014 has not been covered in text. All the headings, formats as mentioned in the IBM Manual Appraisal MP 2014 should be furnished in all chapters in the text.
2. The mine is non-working and the supplementary lease deed over an area of 1586.36 Ha extended has not been executed. Therefore subsistence of validity of lease along with relevant documents should be submitted.
3. The date of expiry of 2nd RML and expiry of lease period as per Mineral (Mining by Government Company) rules, 2015 should be rechecked and corrected.
4. All the proposal for processing, beneficiation, loading, disposal of tailings etc. generated from adjacent lease of 5.1 sq. miles should not be the part of the mining plan of 6.9 sq. mile lease and should be omitted. Need to do necessary correction at all places in the document.

GEOLOGY AND EXPLORATION:

5. As discussed during field inspection, the lease area explored under different category of UNFC norms is incorrect and should be recalculated as per the provision of Part II point no.4 and part III of Minerals (Evidence of Mineral Contents) Rules, 2015 (MEMC Rules, 21015). The area considered under G4 level of exploration is incorrect to the extent that only the area identified having enhanced mineral potential through geophysical prospecting should only be considered under G4 category of UNFC per the provision of MEMC Rules, 2015. The justification for area considered for G1/G2/G3/G4 etc. have not been furnished as per the provision of MEMC Rules'2015. Necessary corrections to be done at all relevant places of the document and resource estimation.
6. In Para 1 (i), future exploration proposal should be modified to the extent that the depth of proposed boreholes should be up to 300 meters or up to discontinuance of ore body, whichever is earlier. The proposal for exploration should be over the period of one year only i.e. 2021-22.
7. Reserves and Resources have to be re-estimated based on latest updated survey and estimated by cross sectional method showing detail calculation of sectional wise reserves and resources; cross-sectional area, length of influence, volume, bulk density, recovery factor and tonnages separately for different categories of UNFC codes. The estimation should be done for grade between threshold and cut off grade and above cut off grade separately. Further, the boreholes whose chemical analysis results and borehole logs are not available should be omitted from plan and section and subsequently from resource estimation. The average grade of reserve and resource under various UNFC categories has not been furnished. The summary of ore and mineral reject along with grade under various level of UNFC should be furnished.
8. Justification of UNFC codes as per UNFC guidelines has not been furnished. Need to do necessary corrections.
9. In all the tables of reserves and resource estimated, the reserve/resource as on date.... should be furnished.

MINING:

10. Justification for area proposed for mining has not been submitted with respect to exploration, mineral conservation for achieving targeted ROM quantity and grade.
11. In production table furnished in page no.70 the term ROM quantity should be included.

12. The detail Section wise, RL wise re-calculation of excavation of OB/IB/waste, Ore, Mineral reject to be furnished by cross sectional method over redefined geological section. Need to do necessary correction and update at relevant places.
13. The details furnished under dump re-handling chapter should be in line with the joint verification reports enclosed to this document.
14. Conceptual Mine planning should be modified taking into consideration of the revised production from in-situ excavations, available reserves and resources describing the excavation, recovery of ROM, Disposal of waste, backfilling of voids, reclamation and rehabilitation showing on a plan with few relevant sections. Conceptual min planning should be limited to the end of the lease period.
15. The basis of calculation of furnished powder factors figures should be furnished. The details regarding the blasting should be elaborated.
16. In pursuant to the order dated 14.01.2020 passed by MoM, Gol, consequent up on the order dated 08.01.2020 of the Hon'ble Apex Court passed in W.P.(C) No. 114/2014, the lessee shall carryout "regrassing in mining area after closure of mines". Accordingly proposal has not been submitted in conceptual planning, conceptual plan and sections..

STACKING OF MINERAL REJECT /SUB GRADE MATERIAL AND DISPOSAL OF WASTE

17. In Para 4a, the nature and quantity of top soil, overburden / waste and Mineral Reject to be disposed of have not been furnished in the following format.

Year	Top Soil (cum)		Waste (cum)				Mineral Rejects (tones)			
	Reuse/ spreading	storage	Total generation	Back filling	Storage (dumpi ng)	Utiliza tion	Total generati on	Blending	Storage	Benefici ation

18. Justification of proposed waste dumping sites w.r.t to status of exploration, non-mineralization and outside the UPL have not been furnished. Dump plan and sections should be modified to the extent that sub surface lithology has not been shown.
19. Proposal for beneficiation in the adjacent lease area of 5.1 sq. miles is not permissible. Hence, proposal may be modified accordingly.

PROCESSING OF ROM AND MINERAL REJECTS:

20. A material balance chart with a flow sheet or schematic diagram of the processing procedure indicating feed, product, recovery, and its grade at each stage of proposed processing within the lease area only should be furnished. The processing facilities limited within the lease area should be described only. The tailings generated due to washing at adjacent ML of 5.1 sq. miles or 1321.45 Ha should not be disposed within the lease area of 6.9 sq. miles or 1586.36 Ha. Need to modify processing proposal accordingly in all relevant text part of the document.
21. Information furnished in Para 6 (d) is not relevant to the context and therefore should be omitted. It should be specified to the slime/tailings related material only. Need to do necessary correction.

OTHERS:

22. Information in respect to the existing and proposed manpower right from management level to unskilled labor both on role and contractual has to be mentioned separately in the text.

PROGRESSIVE MINE CLOSURE PLAN:

23. The air, water and noise monitoring stations and their frequency of monitoring have not been furnished in tabulated format. All water discharge points from lease area to external should be monitored. Accordingly, monitoring proposal to be submitted. Further, Gap plantation along the safety zone should be furnished.
24. All the paragraphs should be addressed in detail under PMCP chapter as per IBM Manual Appraisal MP 2014. The present land use pattern should be furnished as per the format of FA table of different heads.

25. In FA table the different heads should be kept as per the format specified in IBM manual appraisal 2014. The area under different heads of FA table should be properly shown in different hatching with present area and additional area in FA plan.
26. Year wise mining plan proposals and land use pattern should be submitted in softy copy in the format of .kml or .shp file along with document. Need to do necessary corrections.

PLATES (GENERAL):

1. Magnetic Meridian and date of observation should be given on all relevant plans. Date of survey should be given on all plans and sections and signature should bear date of signature. All plans & sections prepared should follow the conventions mentioned under MMR 1961. All plans and sections shall show a scale a scale of the plan at least twenty five centimeters long and suitably subdivided. The plans and sections submitted should bear the certificate that - the plans and sections are prepared based on the lease map authenticated by the state government. The index should be kept same in all the plans and sections.
2. All plans and sections to be submitted in UTM grid. The orientation of plans and sections as per UTM North should be rechecked and corrected.
3. **KEY PLAN:** The key plan should incorporate all features as mentioned Rule 32 5 (a) of MCDR 2017. The approach road to the lease area, 5 Km boundary and wind rose diagram etc. has not been shown.
4. Lease plan, DGPS surveyed lease map certified by competent authority of state government should be submitted.
5. **SURFACE PLAN:**
 - (i) Forest, Non-forest and surface right area to be shown in surface plan. The Surface Plan should be prepared to satisfy the provision as laid down rule 32 (1) (a) of MCDR'2017.
 - (ii) The DGPS surveyed latitude-longitude and UTM coordinates of all the boundary pillars have not been furnished in tabulated format. The plan should be updated based on the recent survey. Nomenclature of waste dumps and mineral reject dumps have not been shown.
 - (iii) The features within the lease area should only be shown in surface plan. Extension of waste dump, fines stack outside the lease area should be removed. Nomenclature of dumps are not legible.
 - (iv) Existing surface features of the lease area should be shown on surface plan. The hatched area of proposal regarding surrendering of the area should be removed. Need to do all relevant plans and sections.
6. **GEOLOGICAL PLAN & SECTION:**
 - (i) Part Geological plan and sections to be shown in 1: 2000 scale. The lithology of the unexplored lease area should be rechecked and corrected. Potentially mineralized area should be marked over geological plan. Revised borehole proposal should be shown after complying scrutiny point no 13. Need to do necessary correction.
 - (ii) Cross section lines with nomenclature have not been shown on the geological plan. The Geological Plan should be prepared to satisfy the provision as laid down rule 32 (1) (b), (c) and (d) of MCDR'2017
 - (iii) Scientific correlation of geological section has not been done as per the provision of MEMC, Rules 2015. In Geological plan and sections, the areas shown as blank should be filled with relevant lithology. UNFC codes, UPL should be shown in Geological sections.
7. **DEVELOPMENT PLAN & SECTION:**
 - (i) Development plan and sections should be revised based on updated geological map and sections. Existing and proposed OB an mineral rejects dumps should be shown. The nomenclature of the dumps should be done.
 - (ii) Index of the UPL shown in plan and section and those shown in index is different.
 - (iii) The proposed and existing bench mRL to be shown clearly over year wise development plan and sections.

- (iv) Geological information (lithology) has not been furnished on the area proposed for development in year wise development plan and sections. Plan and section should be drawn on same scale on 1: 2000.
- (v) Existing and proposed protective measures and plantation should be shown in different colors around all waste dumps and mineral reject dumps. Index of safety zone boundary and surface right area should have distinct color.
- (vi) Year-wise development plan and section should be separately submitted on same scale. Color index of the year wise proposal should be modified as discussed in during field inspection.
- (vii) Year wise mining plan proposals should be submitted in softy copy in the format of .kml or .shp file along with document. Need to do necessary corrections.

8. **ENVIRONMENT PLAN:**

The environment plan has not been prepared as per the provision laid down in rule 32 (5) (b) of MCDR'2017. Adjacent lease boundaries within 500m of lease boundary have not been shown.

9. **RECLAMATION PLAN:**

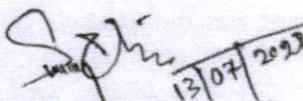
Existing and proposed protective measures and plantation should be shown in different colors along all waste dumps and mineral reject dumps. Backfilling proposal should be shown clearly. Index of safety zone boundary and surface right area should have distinct color.

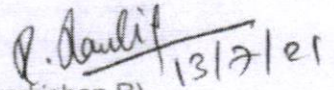
10. **FINANCIAL ASSURANCE AREA PLAN:**

The area degraded due to mining and allied activity and waste dump sites to be considered in FA calculation. The existing area and additional area under different heads should be shown properly under different colored hatching.

ANNEXURES:

1. Few photographs showing Land use of the lease area, environmental status of the area have not been furnished.
2. Details of Qualified person like experience and qualification as per provision of rule 15 of MCR 2016 should be furnished.
3. Copy of quality of air, water, soil, noise and other environmental a parameters monitoring report of the last year should be enclosed.
4. All the annexure to be properly numbered/paged and relevant annexure to be signed by qualified person etc. It is observed that many of the annexures are not legible. A legible copy of same to be enclosed. The details of all the BH to be annexed year wise BH wise. The lithology of the borehole logs should match with the lithology shown in Geological sections.
5. Copy of valid bank guarantee has not been enclosed.


(Sanjib Kumar Mohapatra)
Senior Mining Geologist


(Ramkishan R)
Senior Asst. Controller of Mines